

DEV
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OPS



DEVOPS



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DEVOPS TRAINING IN AHMEDABAD

DevOps is one of the highest-paying roles you can get at a software company. And even if you aren't working as a DevOps, knowing how it works will make you a more productive developer. You will learn what DevOps is, continuous integration, continuous deployment strategies, and application performance management. Many DevOps practices are commonly used in programming and web development, it is important to understand key terms and technologies. This course is totally beginner friendly and you will learn everything about devops and tools related to devops culture.

TOOLS INSTALLATION

- Package Manager - HomeBrew(MacOS)(window OS)
- Editor (VS Code or Sublime or IntelliJ IDEA)
- Git CLI
- Java OpenJDK
- Build Tools: maven, gradle, node, npm
- Docker and Docker-Compose
- Minikube, kubectl
- Terraform CLI
- Python
- Ansible

MODULE 1 [INTRODUCTION TO DEVOPS]

- Different IT Roles in Software Development & Delivery Process
- Traditional: Development vs Operations
- Why DevOps Culture
- DevOps Task and Responsibility

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MODULE 2 [INTRODUCTION TO LINUX OPERATING SYSTEM AND LINUX COMMAND]

- Introduction to Operating Systems
- Introduction to Virtual Machines (VM Part 1)
- Setup a Linux Virtual Machine (VM Part 2)
- Linux File System
- Introduction to Command Line Interface (CLI Part 1)
- Basic Linux Commands (CLI Part 2)
- Package Manager - Installing Software on Linux
- Vi & Vim Text Editor
- Users & Permissions
- Basic Linux Commands - Pipes & Redirects (CLI Part 3)
- Shell Scripting
- Environment Variables
- Networking
- SSH - Secure Shell

MODULE 3 [VERSION CONTROL SYSTEM - GIT]

- Introduction to Version Control
- Basic concepts of Git
- Setup Git Repository
- Working with Git
- Initialize Git Repository locally
- Concept of Branches
- Merge Requests
- Deleting Branches
- Avoiding Merge Commits (rebase)
- Resolving Merge Conflicts
- Don't track certain files/folders - .gitignore
- Save work-in-progress changes (stash)
- Going back in history (git log, git checkout)
- Undoing and changing commits (reset, revert, amend)
- Merging Branches
- Git for DevOps

100% REAL-TIME PRACTICAL TRAINING



MODULE 4 [BUILD TOOLS & PACKAGE MANAGER]

- Introduction to Build and Package Manager Tools
- Install Build Tools
- Windows Installation Help - Part 1
- Windows Installation Help - Part 2
- IMacOS/Unix Installation Help
- Build Artifact
- Build Tools for Development (Managing Dependencies)
- Run/Start the application
- Build JavaScript applications
- Other Programming Languages
- Publish Artifact
- Build Tools & Docker
- Build Tools & DevOps

MODULE 5 [PROJECT: DEPLOY APP ON DROPLETS]

- Introduction to Cloud & Infrastructure as a Service
- Setup server on DigitalOcean
- Deploy App on Droplet
- Create a Linux User



MODULE 6 [ARTIFACT REPOSITORY MANAGER]

- Introduction to Artifact Repository Manager
- Install and Run Nexus on Droplet
- Nexus UI Tour
- Repository Types
- Publish Artifact to Nexus
- Nexus API
- Blob Store
- Component vs Asset
- Cleanup Policies



MODULE 9 [AWS SERVICES]

- Introduction to Amazon Web Services
- Create an AWS account
- Identity & Access Management (IAM)
- Regions & Availability Zones
- Publish Artifact to Nexus
- Virtual Private Cloud (VPC)
- Classless Inter-Domain Routing - CIDR Block explained
- AWS and Jenkins Part I - Jenkins Pipeline to deploy on AWS EC2
- AWS and Jenkins Part II - Deploy using Docker Compose
- AWS and Jenkins Part III - Complete Pipeline
- Introduction to AWS CLI
- AWS and Infrastructure as Code (Terraform)
- Container Services Preview

MODULE 10 [CONTAINER ORCHESTRATION WITH KUBERNETES]

- Introduction to Kubernetes
- Basic Concepts and Main K8s Components
- Kubernetes Architecture
- Minikube and kubectl - Local Setup
- Kubernetes CLI - Main kubectl commands
- Introduction to YAML Configuration File
- Demo project: Deploying MongoDB and Mongo Express
- Organizing components with Namespaces
- Kubernetes Services
- Kubernetes Ingress
- Persisting Data with Volumes
- ConfigMap & Secret Volume Types
- Deploying stateful Apps with StatefulSet
- Introduction to Managed Kubernetes Services
- Helm - Package Manager of Kubernetes
- Helm Demo: Install a Stateful Application on Kubernetes using Helm
- Demo: Deploy App from Private Docker Registry
- Extending the K8s API with Operators
- Prometheus Operator Demo with Helm: Setup Prometheus Monitoring in K8s
- Secure your cluster - Authorization with RBAC
- Microservices in Kubernetes
- Demo project: Deploy Microservices Application
- Production & Security Best Practices
- Demo project: Create Helm Chart for Microservices
- Demo project: Deploy Microservices with Helmfile

MODULE 7 [CONTAINERS WITH DOCKER]

- What is a Container?
- Container vs Image
- Docker (Container) vs Virtual Machine
- Docker Architecture and its components
- Main Docker Commands
- Debug Commands
- Demo Project: Overview
- Demo Project: Developing with Docker
- Demo Project: Docker Compose - Running multiple services
- Demo Project: Dockerfile - Building our own Docker Image
- Demo Project: Private Docker Repository - Pushing our Docker
- Image into a private Registry on AWS
- Demo Project: Deploying our containerized application
- Docker Volumes - Persist data in Docker
- Demo Project: Volumes - Configuring persistence for our application
- Docker & Nexus: Push/Pull to Nexus Repository
- Docker & Nexus: Run Nexus as Docker container

MODULE 8 [BUILD AUTOMATION & CI/CD WITH JENKINS]

- Introduction to Build Automation
- Install Jenkins
- Jenkins UI Tour
- Install Build Tools
- Jenkins Basics Demo
- Docker in Jenkins
- Freestyle to Pipeline Job
- Introduction to Pipeline Job
- Jenkinsfile Syntax
- Create full Pipeline
- Introduction to Multibranch Job
- Wrap Up Jenkins Job
- Credentials in Jenkins
- Jenkins Shared Library
- Trigger Jenkins Job - Webhook
- Versioning your application - Part 1
- Versioning your application - Part 2

MODULE 11 [KUBERNETES ON AWS]

- Introduction to Container Services on AWS
- Create EKS cluster with Node Group - Part 1
- Create EKS cluster with Node Group - Part 2 (Autoscaling)
- Create EKS cluster with Fargate
- Create EKS cluster with eksctl
- Deploy to EKS cluster from Jenkins Pipeline
- Complete CI/CD Pipeline with DockerHub
- Complete CI/CD Pipeline with AWS ECR

MODULE 12 [INFRASTRUCTURE AS CODE WITH TERRAFORM]

- Introduction to Terraform
- Install Terraform & Local Setup
- Providers
- Resources & Data Sources
- Change/Destroy Resources
- More Terraform commands
- Terraform State
- Terraform Output
- Variables
- Environment Variables
- Initialize Git Repository
- Demo Project 1: Automate your AWS Infrastructure - Part 1
- Demo Project 1: Automate your AWS Infrastructure - Part 2
- Demo Project 1: Automate your AWS Infrastructure - Part 3
- Provisioners
- Modules - Part 1
- Modules - Part 2
- Modules - Part 3
- Demo Project 2: Terraform & AWS EKS - Part 1
- Demo Project 2: Terraform & AWS EKS - Part 2
- Demo Project 2: Terraform & AWS EKS - Part 3
- Demo Project 3: Complete CI/CD with Terraform - Part 1
- Demo Project 3: Complete CI/CD with Terraform - Part 2
- Demo Project 3: Complete CI/CD with Terraform - Part 3
- Terraform Remote State
- Terraform Best Practices

MODULE 13 [PROGRAMMING WITH PYTHON]

- Introduction to Python
- Install Python & Local Setup
- Our first program
- Strings & Numbers
- Variables
- Functions
- User Input
- Conditionals (if / else) & Boolean Data Type
- Error Handling with Try / Except
- While Loops
- Lists and For Loops
- Sets
- Built-In Functions
- Dictionaries
- Modules
- Demo Project: Countdown App
- Packages, PyPi & pip
- Demo Project: Automation with Python - Working with Spreadsheets
- Classes and Objects

MODULE 14 [AUTOMATION WITH PYTHON]

- Introduction to Boto3 (AWS SDK for Python)
- Install Boto3 & Connect to AWS
- Getting familiar with Boto API
- Python vs. Terraform
- Project: EC2 Server Status Checks
- Project: Writing a Scheduled Task
- Project: Add Tags to EC2 Server Instances
- Project: Print EKS Cluster Information
- Backup & Restore
- Website Monitoring and Recovery



MODULE 15 [CONFIGURATION MANAGEMENT WITH ANSIBLE]

- Introduction to Ansible
- Install Ansible
- Setup Managed Servers
- Ansible Inventory
- Add EC2 Instances to Inventory
- Managing Host Key Checking
- Introduction to Ansible Playbook
- Ansible Modules Overview
- Ansible Collections
- Project: Automate Node App Deployment - Part 1
- Project: Automate Node App Deployment - Part 2
- Project: Automate Node App Deployment - Part 3
- Variables in Ansible
- Project: Automate Nexus Deployment - Part 1
- Project: Automate Nexus Deployment - Part 2
- Configure Git & Default Inventory Location
- Project: Ansible & Docker - Part 1
- Project: Ansible & Docker - Part 2
- Project: Ansible Integration in Terraform
- Dynamic Inventory
- Project: Automate Kubernetes Deployment
- Ansible Integration in Jenkins - Part 1
- Ansible Integration in Jenkins - Part 2
- Ansible Integration in Jenkins - Part 3
- Structuring Playbooks with Ansible Roles

MODULE 16 [MONITORING WITH PROMETHEUS]

- Introduction to Monitoring with Prometheus
- Install Prometheus Stack in Kubernetes
- Data Visualization with Prometheus UI
- Introduction to Grafana
- Alert Rules in Prometheus
- Create own Alert Rules/li>
- Introduction to Alertmanager
- Configure Alertmanager with Email Receiver
- Trigger Alerts for Email Receiver
- Monitor Third-Party Applications
- Deploy Redis Exporter
- Alert Rules & Grafana Dashboard for Redis
- Collect & Expose Metrics with Prometheus Client Library (Monitor own App - Part 1)
- Scrape Own Application Metrics & Configure Own Grafana Dashboard (Monitor own App - Part 2)

TRAINING INCLUDES THE FOLLOWING SERVICES

- Theoretical sessions
- Practical session
- Doubt solving session
- Analysis & Evaluation
- Assignments
- 1 mini project
- 1 live project
- Special soft skill training
- Interview preparation
- Interviews
- Experience Certificate

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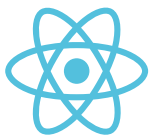
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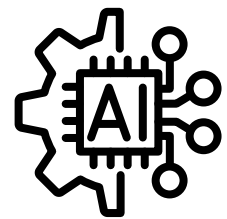
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Python



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