DevOps Certification Training Course Content

Course Duration - 45-50 Hrs., 7-8 Weeks

Course Information

Batch Options

Weekday Batch
Mon – Fri – 1.5 Hr./Day

About the Trainer

Industry Expert Trainer with 15+ Years
Real Time Work Experience at Top US
Based Product and Consulting Firms

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Introduction To DevOps Training

DevOps

DevOps is a set of practices, tools, and a cultural philosophy that automate and integrate the processes between software development and IT teams

What you'll learn

- Learn DevOps Skills from an Industry Expert
- Version Control, Linux, Containerization & Orchestration
- GIT, GITHUB, Azure Repo, Docker, Kubernetes, AKS, EKS
- Azure DevOps & CI/CD with AWS DevOps
- CI/CD With Jenkins, CM with Ansible and Terraform
- AWS & Azure Cloud Core Skills
- Communication, Collaboration & Monitoring
- Prepare for DevOps certification exams and get Job Ready
- Resume & Interview preparation and Job Assistance

Course Content

***** Fundamentals of DevOps & Cloud *****

Module 1: Introduction to DevOps

- Introduction to DevOps
- Benefits of working in a DevOps environment
- DevOps Lifecycle
- DevOps Stages
- DevOps Delivery Pipeline
- Web Application Architecture
- Web Technologies
- Web Technologies used in Projects

Module 2: Software Development Life Cycle & Application Lifecycle

- SDLC Methodologies
- Waterfall Methodology
- Agile Methodology
- Scrum Framework
- What is DevOps?
- What is Cloud, SAAS, IAAS, PAAS?
- What is Testing?

Module 3: Introduction to Agile

- The Manifesto for Agile Software Development
- The Principles behind the Agile Manifesto
- Agile Approaches
- Agile Frameworks

Module 4: Introduction to Scrum

- An overview of Scrum
- The Scrum Roles & Responsibilities
- The Scrum Artifacts
- The Scrum Events

Module 5: Azure Boards

- What are Azure Boards?
- Why use Azure Boards?
- Agile Project Management Best practices
- Basic concepts of Azure Boards
- Connecting Boards to GitHub
- Work items
- Kanban Boards
- Sprints
- Scrum and Plans
- Azure Boards Integrations

******* Version Control – GIT, GITHUB, Azure Repo *******

Module 6: Introduction to Version Control System

- Centralized Version Control System
- Distributed Version Control System

Module 7: GIT (Version Control)

- Git Introduction
- Git Architecture
- Git Workflow
- Git Branching Model
- Git Merging Branches
- Detached Head for Retro scoping
- Undoing Changes
- Git Ignore

Module 8: Distributed Version Control System -GitHub

- GitHub For Remote Repositories
- Using existing GIT Repositories with Clone
- Pull Requests
- Tagging

Module 9: Distributed Version Control System -Azure Repos

- Repos For Remote Repositories
- Using existing GIT Repositories with Clone
- Pull Requests

***** Linux for DevOps & Cloud *****

Module 10: Introduction to Operating Systems

- Introduction to Operating Systems Introduction to Linux OS
- Linux Distributions
- Linux Architecture

Module 11: Basics of Linux

- Understanding Command Line Interface - CLI
- Understanding Linux File System
- Using Text Editor (vi)

Module 12: File Management with Linux

- File & Directory Management
- Archive Files Using tar and zip utilities
- Package Management
- User Management
- File Permissions
- Service Management

Module 13: Networking

- Understand how IP addresses, ports, and DNS works
- Load Balancers
- HTTP/HTTPS

Module 14: Security

- Configure Firewalls to secure the application

***** Containerization & Orchestration: Docker, Kubernetes, AKS, EKS *****

Module 15: Introduction to Containers

- Virtualization using Virtual Machines
- Introduction to Containerization
- Virtual Machines vs Docker

Module 16: Containerization with Docker

- Docker Architecture
- Components of Docker
- Setting up Docker
- Docker Registry
- Docker Images Vs Docker Containers
- Running Docker Containers
- Docker Volumes
- Containerize Applications
- Creating Docker Container from Docker Image
- Sharing images using Docker Hub
- Deploying Docker applications using multiple containers
- Running applications using Docker Compose
- Docker Networks

Module 17: Orchestration with Kubernetes

- Introduction to Container Orchestration
- Container Orchestration Tools
- Overview of Kubernetes
- Kubernetes Architecture
- Components of Kubernetes
- Understanding Containers
- Running Containers
- Sustaining Containers
- Running Pods of Containers
- Clustering of Pods
- Clustering of Containers
- Replica Sets
- Deployments and Services
- Attaching Docker and Kubernetes
- K8s Release Notes
- Linking Kubernetes and Cloud Native

Module 18: Azure Kubernetes Service

- AKS Storage
- AKS Virtual Nodes
- Azure Container Registry for AKS
- Azure AKS - Auto Scaling
- CI/CD with AKS
- Azure Monitoring Using AKS

***** Azure DevOps (Application Life Cylce Management) *****

Module 19: Introduction to Azure DevOps

- What is Azure DevOps?
- Azure Boards
- Azure Repos
- Azure Pipelines
- Azure Test Plans
- Azure Artifacts
- Creating Pipelines in Azure DevOps
- Connecting project in Azure DevOps

Module 20: Azure Boards

- What are Azure Boards?
- Why use Azure Boards?
- Agile Project Management Best practices
- Basic concepts of Azure Boards
- Connecting Boards to GitHub
- Work item
- Kanban Board
- Sprint
- Scrum and Plans
- Azure Boards Integrations

Module 21: Azure Repos

- Introduction to Azure Repos
- Compare TFVC and Git
- Key Concepts in Azure Repos
- Search your code in Repos
- What is TFVC?
- Azure Repos Integrations

Module 22: Azure Pipelines

- What are Azure Pipelines?
- Why use Azure Pipelines
- Deploying to Azure
- Key concepts in Pipelines
- CI Triggers in pipelines
- YAML Basics
- Ecosystems and Integration
- Setting up CI build
- Adding Tests to the Pipeline
- Agents and Tasks

Module 23: Azure Test Plans & Artifacts

- What are Azure Artifacts?
- Key concepts in Artifact
- Working with packages
- Feeds
- Views and upstream sources
- Connecting to Azure Pipelines

- What are Azure test plans?
- Exploratory and Manual testing
- Test from Kanban board
- Creating Test Plans
- Testing Web Apps

******* CI/CD with AWS DevOps *******

Module 24: AWS Code Commit

- CodeCommit - Overview
- CodeCommit - First Repo
- CodeCommit - HTTPS config
- CodeCommit - clone, add, commit, push
- CodeCommit - Branches and Pull Requests

Module 25: AWS Code Build

- CodeBuild - Overview
- CodeBuild - First Build
- CodeBuild - buildspec.yml
- CodeBuild - Artifacts and S3

Module 26: AWS Code Deploy

- CodeDeploy - Overview
- CodeDeploy - EC2 Setup
- CodeDeploy - Deployment Configurations
- CodeDeploy - appspec.yml

Module 27: AWS CodePipeline

- CodePipeline - Overview
- CodePipeline - All Integrations
- CodePipeline - Adding CodeCommit
- CodePipeline - Adding CodeBuild
- CodePipeline - Adding CodeDeploy

******* CI/CD With Jenkins *******

Module 28: Introduction of Continuous Integration

- Overview and Flow of Continuous Integration
- Benefits of Continuous Integration
- Requirements of Continuous Integration
- Build tools and Repository Manager for Continuous Integration

Module 29: Introduction of Continuous Deployment

- Overview of Continuous Deployment
- Benefits of Continuous Deployment
- Tools for Continuous Deployment
- Agile Mentality of Continuous Deployment

Module 30: Jenkins for Continuous Integration

- Overview of Jenkins
- Setting Up Jenkins
- Setting Up Build Jobs
- Build Parameters & Triggers
- Jenkins Job DSL & Plugins

Module 31: Jenkins for Continuous Deployment

- Jenkins Pipelines
- Jenkins Integrations
- Advanced Jenkins Usage

******* Configuration Management with Ansible and Terraform *******

Module 32: Introduction to Configuration Management

- Complexity in Infrastructure Management
- Introduction to Configuration Management Tools
- PULL vs PUSH Based Configuration Management

Module 33: Configuration Management with Ansible

- Introduction To Ansible
- Ansible Setup
- Ansible Inventory
- Ansible Modules
- Ansible Ad-Hoc Commands
- Introduction To YAML
- Ansible Playbooks
- Ansible Handlers
- Ansible Facts & Variables
- Ansible Templates
- Ansible Roles

***** AWS Cloud *****

Module 34: AWS Cloud Fundamentals

- Fundamentals of Cloud Computing
- Walk through AWS Free Tier Account
- AWS Management Console
- Cloud Offerings - Public vs Private vs Hybrid
- Infrastructure As A Service - IAAS
- Platform As A Service - PAAS
- Software As A Service - SAAS

Module 35: AWS Cloud Networking

- AWS Regions
- AWS Availability Zones
- VPC Components
- Internet Gateway
- Subnets
- Route Tables
- Network Access Control List - NACL
- Security Group
- VPC Requirement
- VPC Subnetting
- VPC Requirement
- Build Custom VPC

Module 36: AWS Cloud Server Management

- Introduction To EC2
- EC2 Components
- EC2 Instance Setup
- SSH Clients
- GitBash - Putty - Terminal
- AWS Key Pairs
- Apache Web Server Setup
- Hosting Web Application
- Public IP
- Private IP
- Elastic IP
- Godaddy - DNS Setup
- Configuring DNS for Website Mapping

Module 37: AWS Security Management

- Public Subnets
- Private Subnets
- Public Subnets vs Private Subnets
- Bastion / Jump Server
- NAT Gateway Intro
- Setup NAT Gateway with Private Subnets
- Install Application using NAT Gateway
- Update Application Patches using NAT Gateway

Module 38: AWS Database Management

- Intro To Databases
- IAAS Databases vs PAAS Database
- Host IAAS Databases
- Host PAAS Database
- Setup Web Application For IAAS DB
- Setup Web Application For PAAS RDS

***** Azure Cloud *****

Module 39: Azure Cloud Fundamentals

- Fundamentals of Cloud Computing
- Walk through Azure Free Tier Account
- Overview of Azure Resource Manage
- Cloud Offerings - Public vs Private vs Hybrid
- Infrastructure As A Service - IAAS
- Platform As A Service - PAAS
- Software As A Service - SAAS

Module 40: Azure Cloud Networking

- Azure Regions
- Azure Availability Zones
- Azure VNET Components
- Creating a Virtual Network
- Virtual Network Peering
- Azure Bastion
- Azure Load Balancer

Module 41: Azure Cloud Server Management

- Introduction To VM's
- Azure VM Components
- Azure VM Setup
- SSH Clients
- GitBash - Putty - Terminal

Module 42: Azure Cloud Server Management

- Azure Key Pairs
- Apache Web Server Setup
- Hosting Web Application
- Private & Static IP
- Godaddy - DNS Setup
- Configuring DNS for Website Mapping

Module 43: Azure Database Management

- Intro To Databases
- Setup Database Instance
- Setup Web Application For DB
- Setup SQL Instance
- Setup Web Application For SQL

***** Automation for DevOps - Shell Scripting and Python *****

Module 44: Python as a Scripting Language

***** Communication, Collaboration & Monitoring *****

Module 45: Communication & Collaboration with Slack

- Getting started with Slack
- Starting with Channels
- Working with Messages and Calls
- Sharing Files and Conversations
- Searching and Shortcuts in Slack
- Slack Integrations with DevOps

Module 46: Introduction to Monitoring & Observability

- Introduction to Monitoring
- Introduction to Observability

Module 47: Monitoring & Observability with Prometheus

- Introduction to Prometheus
- Working with Prometheus
- Monitoring and Alerting
- Internals – Storage and Security

Module 48: Monitoring & Observability with Grafana

- Grafana Overview and Overall Architecture
- Installing Grafana on a Linux Server and Windows
- Starting, Stopping Grafana Services on Windows
- Installing Grafana on Docker
- Creating Grafana Dashboards
- Grafana User Interface Overview
- Implementing Monitoring and Observability with Grafana

Module 49: DevOps Certification Guidance

- Explain various DevOps Certification Options
- Discuss 50+ Important DevOps questions
- Practice DevOps Certification questions

Module 50: Guidance on Resume Preparation, Interview & Job Assistance

- Prepare Crisp Resume as Salesforce Admin & Developer
- Discuss common interview questions in Salesforce
- Explain students what jobs they should target and how