KOENIG SOLUTIONS · COURSE OUTLINE

DevOps: Git, Jenkins, Docker & Ansible

5 Days
DURATION

102
TOPICS

LEARNING OBJECTIVES

- Compare Waterfall, Agile and DevOps methodologies
- Explain the continuous DevOps lifecycle and its stages
- Apply Git commands for version control such as commit and branching
- Configure Jenkins jobs, build triggers and plugins for CI
- Describe the end-to-end continuous delivery flow and disciplines
- Build and manage Docker images and containers
- Develop Ansible playbooks using roles, variables and templates
- Implement a combined Git, Jenkins and Ansible deployment workflow

COURSE SYLLABUS

102 Topics

DAY 1

Introduction to DevOps

TOPICS

- Comparison > Waterfall, Agile & DevOps methodologies
- Understanding the DevOps movement & culture

DEVOPS LIFECYCLE – ALL ABOUT 'CONTINUOUS'

- Continuous Development
- Continuous Testing
- Continuous Integration
- Continuous Deployment
- Continuous Monitoring
- Continuous Feedback
- DevOps Strategy & Milestone planning – Process, people skills & tools
- DevOps Tools overview

Source Code Version Control Using Distributed Version Control Tool – Git

TOPICS

- **Various Git Flavors:** GitHub, BitBucket, GitLab etc
- Git 101 using GitHub > Server & Client set up – Registration on GitHub, installing Git
- Git advanced hands on sessions > Add, Commit, log, status, tracking new files, ignoring file types, staging changes, removing files & directories
- Git Branching Model, Repository Organization and Hooks (Client and web hooks)

DAY 2

Continuous Integration Server – Jenkins/Hudson

CREATING A SIMPLE JOB

- Introduction
- Basic Project
- Our Project
- Looking at the Code
- Moving to Jenkins
- Manually Building
- Build Triggers
- Jenkin Plugins
- Creating a Job
- Build Steps
- First Build Step
- Testing the Trigger
- Add Tests
- Workspaces
- Post Build Actions
- Reporting Test Results
- Failing the Build
- Fixing the Build
- Summary

Plugins

TOPICS

- Introduction
- Plugin Architecture
- Extension Points
- Getting Plugins
- Plugin Wiki
- Useful Plugins Overview
- Source Code Plugins
- Trigger Plugins
- Build Tool Plugins
- Wrapper Plugins
- Notifier Plugins
- Reporting Plugins
- Artifact and UI Plugins
- Installing a Plugin
- Plugin Configuration
- Security Overview
- Summary

The Big Picture

TOPICS

- Introduction
- A Case Study
- The Flow
- **Demo:** The Flow
- Stay Calm
- Areas of Discipline
- Unit Testing
- Test Coverage
- Acceptance Testing
- Code Quality Metrics
- Notifications
- Documentation
- Deployments
- Growing
- Summary

DAY 3

TOPICS

- Introduction To Docker
- Container Vs Virtual Machines
- Docker Architecture
- The Docker Hub
- Docker Installation
- Creating First Image
- Working with Multiple Images
- Packaging a customized container
- Running container commands
- Container Port Redirect
- Container Snapshots
- Attach to a Running Container
- Removing Images
- Understand Directory Structure
- Services on startup
- Dockerfile
- Pushing Images to Docker Hub

DAY 4 & 5

TOPICS

- Ansible Introduction
- Inventory
- Modules
- Plays & playbooks
- Setting up Ansible workstation
- Creating Playbooks
- Roles
- Variables
- Templates
- Dynamic Inventory
- Files
- Handlers
- Meta
- Tasks
- Facts
- Vault
- Download & Using Modules & Plugins from Galaxy
- Setting up three tier setup with Ansible
- Ansible Unit Testing of Playbooks
- Complete DevOps Journey which include (Git + Jenkins + Ansible Unit Testing of playbooks + AWS EC2 Instance + Apache Installation + Deploy Dynamic Web Content)

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

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