

Innovate faster with DevOps

DevOps strategy

Innovate faster with DevOps - DevOps strategy

Course content

- ✚ **Introduction to devops**
 - Define DevOps
 - What is DevOps?
 - SDLC models, Lean, ITIL, Agile
 - Why DevOps?
 - History of DevOps
 - DevOps Stakeholders
 - DevOps Goals
 - Important Terminology
 - DevOps Perspective
 - DevOps and Agile
 - DevOps Tools
 - Configuration Management
 - Continuous Integration and Deployment

- ✚ **Introduction to cloud computing**
 - What is Cloud Computing?
 - Characteristics of Cloud Computing
 - Cloud Implementation Models
 - Cloud Service Models
 - Advantages of Cloud Computing
 - Concerns of Cloud Computing

- ✚ **Introduction to virtualization**
 - What is Virtualization?
 - History of Virtualization
 - What is Hypervisor?
 - Types of Server Virtualization
 - Benefits of Virtualization
 - Important Virtualization Products

- ✚ **Vagrant**
 - Introduction
 - Why and what is Vagrant?
 - Uses of Vagrant in an environment
 - Alternatives of Vagrant
 - Vagrant versions
 - Installation and Configuration
 - Installing Virtual Box
 - How to install Vagrant on Windows?
 - Configuring Vagrant
 - Provisioning with Vagrant
 - Creating first VM with Vagrant
 - Operations on the VM
 - Connecting to the VM
 - Add required Images to Vagrant
 - Using Vagrant

- ✚ **GIT-version control**
 - Introduction
 - Version Control Systems
 - Local, Centralized, and Distributed Installing GIT
 - Installing on Linux
 - Installing on Windows
 - Initial setup
 - GIT Essentials
 - Creating Repository
 - Cloning, Check-in, and Committing
 - Fetch pull and remote
 - Branching

Chef for configuration management

Overview of Chef

- Common Chef Terminology (Server, Client, Workstation, Repository etc.)
- Servers and Nodes
- Chef Configuration Concepts

Workstation Setup

- How to configure knife?
- Execute some commands to test connection between knife and workstation

Organization Setup

- Create organization
- Add yourself and node to organization Test Node Setup
- Create a server and add to organization
- Check node details using knife

Node Objects and Search

- How to Add Run list to Node
- Check node Details Environments
- How to create Environments?
- Add servers to environments

Roles

- Create roles
- Add Roles to organization



Puppet for configuration management



What is Puppet?

- How puppet works
- Puppet Architecture
- Master and Agents
- Configuration Language
- Resource Abstraction Layer
- Transactional Layer Installation and Configuration
- Installing Puppet
- Configuring Puppet Master and Agent
- Connecting Agents

Puppet Master

- Puppet configuration tree
- Puppet configuration files Puppet Language Basics
- The declarative language
- Resources
- Resource Collectors
- Virtual Resources
- Exported Resources
- Manifests
- Relationships and Ordering
- Modules and Classes

- Class Parameters
 - Defined Types
- Puppet Language Advanced
- Facter
 - Variables
 - Conditional statement
 - If Else
 - Case and Selectors
 - More Conditionals and Logic
 - Resource relationship Templates
 - Static Contents Explosion
 - Using Dynamic Content with Templates
 - Templates Overview
 - ERB
- Example Code Manifests/Modules
- NTP Module
 - Users Module
 - SSH
 - Sudo

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- Nagios: monitoring**
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- Introduction and Installation
- Obtaining Nagios
 - Compiling and installing Nagios Basic configuration
 - Creating a new host and service
 - Creating a new e-mail contact
 - Verifying configuration
 - Creating a host group and service group
 - Creating a new contact group
 - Creating a new time period
- Plugins and commands
- Finding and installation of a Plugin
 - Removing a plugin
 - Creating a new command
 - Customizing commands
- Using Nagios GUI
- Scheduling downtimes
 - Generating reports
 - Configuring notification
 - Configuring checks
 - Managing
- Flapping NRPE Monitoring
- Enabling Remote Execution
 - Monitoring local services on a remote machine with NRPE
 - Setting the listening address for NRPE

- Setting allowed client hosts for NRPE
- Creating new NRPE command definitions securely
- Creating a custom NRPE script

Jenkins – continuous integration

Introduction

- Understanding continuous integration
- Introduction about Jenkins
- Build Cycle
- Jenkins Architecture

Installation

- Obtaining and installing Jenkins
- Installing and configuring GIT
- Java installation and configuration
- Maven Installation
- Exploring Jenkins Dashboard

Jobs

- Creating and running the Jobs
- Adding and updating Plugins
- Disabling and deleting jobs Build Deployments
- Understanding Deployment
- Tomcat installation and configuration
- Deployment Plugins
- Deploying a war file from Jenkins to Tomcat Securing Jenkins
- Authentication
- Jenkins Plugin
- Authorization
- Confidentiality
- Creating users
- Best Practices for Jenkins

Docker – containers

- What is a Docker
- Use case of Docker
- Platforms for Docker
- Dockers vs Virtualization Architecture
- Docker Architecture
- Important Docker components
- Understanding the Docker components Installation
- Installing Docker on Linux
- Understanding Installation of Docker on Windows
- Some Docker commands

Provisioning

- Docker Hub
- Downloading Docker images
- Running Docker images

- Running commands in container
- Running multiple containers Custom images
- Creating a custom image
- Running a container from the custom image
- Publishing the custom image

Docker Networking

- Accessing containers
- Linking containers
- Exposing container ports
- Container Routing

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- Setting up Perforce



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