

DevOps Syllabus

Cloud computing

- ✓ What is Cloud Computing
- ✓ How Cloud Computing are helpful
- ✓ Cloud's role in DevOps orchestration
- ✓ What is AWS
- ✓ Use cases in AWS
- ✓ Companies using AWS and Market trends
- ✓ Different Services offered in AWS
- ✓ Use case: - Highly available fault tolerant systems
- ✓ Understanding availability zone
- ✓ region
- ✓ Creating your own account in AWS
- ✓ Creating a VPC
- ✓ subnet
- ✓ network gets way
- ✓ Running your own EC2 instance
- ✓ Connecting in EC2 and installing https in EC2
- ✓ S3
- ✓ Over view S3
- ✓ SNS, Cloud watch
- ✓ Understanding the Serverless (Lambda)

DevOps History and evolution of DevOps

- ✓ What is the market trend of DevOps
- ✓ Which background people can switch to DevOps
- ✓ Some typical tool stack for DevOps Jobs
- ✓ How to get maximum from the course
- ✓ Client-Server and Distributed Version control system

Git

- ✓ Advantages of Git over SVN
- ✓ Git User trends
- ✓ Different Git tools (Git Desktop, Kraken)
- ✓ Git Installation and Configuration
- ✓ Setting up Git Bash and Git UI
- ✓ Creating first repository: Local
- ✓ Git commands: add
- ✓ commit
- ✓ push
- ✓ status
- ✓ history
- ✓ Branch why what? Understanding Master
- ✓ Creating a Branch
- ✓ Merging a Branch
- ✓ Resolving Merge conflicts
- ✓ checking the difference
- ✓ Understanding the tags: Modifying
- ✓ undoing
- ✓ deleting and discarding
- ✓ What
- ✓ Use Case of Unit Testing
- ✓ Different kind of Unit Testing
- ✓ What is JUnit
- ✓ Writing a Simple JUnit Test
- ✓ Test NG introduction
- ✓ Write a Unit Testing Case in your Favorite language.

Linux Administration

- ✓ A Linux Introduction
- ✓ Open Source Philosophy
- ✓ Distributions
- ✓ Embedded Systems
- ✓ Command Line Basics
- ✓ Basic Shell
- ✓ Command Line Syntax – ls
- ✓ Command Line Syntax – \$PATH, Case Sensitivity
- ✓ Command Line Syntax – Basic Commands
- ✓ Command Line Syntax – uname
- ✓ Command Line Syntax – Command History, Command Completion
- ✓ Command Line Syntax – cd and pwd
- ✓ Shell Configuration Files
- ✓ Variables – Environment / System Variables
- ✓ Variables – User Defined
- ✓ Globbing
- ✓ Quoting
- ✓ Formatting Commands
- ✓ Working with Options
- ✓ Using the Command Line to Get Help
- ✓ Man
- ✓ Info
- ✓ locate, find, whereis, and using /usr/share/doc/
- ✓ Exercise: Man Page Walkthrough
- ✓ Exercise: Basic Command Line
- ✓ Using Directories and Listing Files
- ✓ The Linux File System
- ✓ Files, Directories
- ✓ Hidden Files and Directories
- ✓ Home
- ✓ Absolute and Relative Paths
- ✓ Exercise: Maneuvering the Linux File System
- ✓ Creating, Moving and Deleting Files
- ✓ Files and Directories
- ✓ Case Sensitivity
- ✓ Simple Globbing and Quoting
- ✓ The Power of the Command Line
- ✓ Archiving Files on the Command Line
- ✓ Files, Directories
- ✓ Archives, Compression
- ✓ Searching and Extracting Data from Files
- ✓ Commands (Revisited)
- ✓ Command Line Pipes
- ✓ I/O Redirection
- ✓ Regular Expressions
- ✓ Exercise: Practicing with Pipes and Grep
- ✓ Turning Commands into a Script
- ✓ Basic Text Editing
- ✓ Basic Shell Scripting
- ✓ Basic Shell Scripting, Continued
- ✓ Exercise: Using the vi Text Editor
- ✓ Available
- ✓ The Linux Operating System
- ✓ Choosing an Operating System
- ✓ Windows, Mac, and Linux Differences
- ✓ Distribution Life Cycle Management
- ✓ Understanding Computer Hardware
- ✓ Hardware
- ✓ Where Data is Stored
- ✓ Kernel

- ✓ Processes
- ✓ syslog, klog, dmesg
- ✓ /lib, /usr/lib, /etc, /var/log
- ✓ Your Computer on the Network
- ✓ Internet, Network, Routers
- ✓ Domain Name Service and the Default Gateway (Network Router)
- ✓ Network Configuration
- ✓ Security and File Permissions
- ✓ Basic Security and Identifying User Types
- ✓ Root and Standard Users
- ✓ System Users
- ✓ Creating Users and Groups
- ✓ User IDs
- ✓ User Commands
- ✓ Group Commands
- ✓ Exercise: Managing User Accounts
- ✓ Exercise: Creating User Groups
- ✓ Managing File Permissions and Ownership
- ✓ File/Directory Permissions and Owners
- ✓ Special Directories and Files
- ✓ Symbolic Links
- ✓ System files, Special Files, and Sticky Bits
- ✓ Use Case in Maven
- ✓ Ant vs Maven
- ✓ Maven installation and Configuration What is Maven Central
- ✓ Dependency Management why and How
- ✓ Introduction to POM
- ✓ Build lifecycle
- ✓ Maven repositories Maven plugins
- ✓ Using a POM file to run unit testing (Jenkins)
- ✓ Multi-module POM
- ✓ dependency hierarchy
- ✓ Artifactory management
- ✓ Maven Release and Snapshot
- ✓ Assignment- Create a Maven Hello world Java Project
- ✓ Run the Unit testing and and create the artifact for that
- ✓ Use Case (How Artifactories are managed)
- ✓ Artifact Lifecycle
- ✓ Basic use of Sonatype Nexus
- ✓ Artifactory Live demo
- ✓ Use Case WebServer Deployment in DevOps
- ✓ Architecture
- ✓ Different types of Webserver
- ✓ Proxy servers
- ✓ Mail Server
- ✓ Installation of Tomcat
- ✓ Manual Deployment
- ✓ Deploying a Web application using Maven
- ✓ Idea about Automated Deployment using Continuous Integration
- ✓ Create a Tomcat Server and Deploy the application manually
- ✓ Create a Tomcat Server and Deploy the Application Using Maven
- ✓ Benefits of Code Profiling tool
- ✓ Use case of Code Profiling tool
- ✓ Different kind of Code quality tools
- ✓ Over view of Sonar
- ✓ Installation of SonarQube
- ✓ Installation fo Code Analyser
- ✓ Sonar profiles
- ✓ Running Sonar for a project
- ✓ Configuring SonarQube for one Sample Java project.

Jenkins

- ✓ Why Jenkins?
- ✓ What is Continuous Integration and Continuous Deployment (Use Case1)
- ✓ Jenkins installation and Configuration
- ✓ Running Jenkins as windows service
- ✓ Deploying Jenkins in Tomcat Server
- ✓ Jenkins Global Configuration
- ✓ Building your first Hello world job
- ✓ Jenkins User Management
- ✓ Jenkins Plugin management
- ✓ Jenkins SCM configuration (Git SVN)
- ✓ Understanding the Jenkins workspace
- ✓ Build
- ✓ pre build and post build job
- ✓ Jenkins Unit testing
- ✓ Automation testing
- ✓ Mail notification
- ✓ Jenkins Reporting
- ✓ Matrix and trend
- ✓ Jenkins remote executor
- ✓ Master Slave configuration in Jenkins
- ✓ Jenkins Most used plugin
- ✓ Advanced Reference
- ✓ Jenkins pipeline plugin
- ✓ Groovy scripting
- ✓ Scriptler
- ✓ Jenkins Parameterized build
- ✓ Environment inject plugin
- ✓ Use of Jenkins environment variables
- ✓ Deploying a specific revision
- ✓ Customizing the Jenkins UI
- ✓ Project based Matrix plugin
- ✓ Parallel Execution
- ✓ Configuring Jenkins Hub and Node in the cloud (AWS)
- ✓ Configuring a Selenium Desktop node with a Linux Server (AWS)
- ✓ Case Study
- ✓ Real time implementation of Automated role back
- ✓ Multi branch Deployment.
- ✓ What is Virtual Machine
- ✓ Why we need it
- ✓ What is Container
- ✓ Difference between Containers and Virtual Machine

Docker

- ✓ Docker Installation and Configuration
- ✓ Major Docker Components
- ✓ Container Management Running Containers
- ✓ Docker file
- ✓ Working with Registries
- ✓ Docker Port Forwarding
- ✓ What is Configuration Management
- ✓ Configuration Management Challenges
- ✓ Configuration Management in DevOps Ecosystem
- ✓ Some tools
- ✓ Trends
- ✓ What is Container and Containerization
- ✓ Different types of Containers
- ✓ DOCKER: What why how ?
- ✓ Use Case 1 (Why Docker)
- ✓ Docker installation
- ✓ Docker VS Vagrant
- ✓ Docker Run commands
- ✓ Advanced Docker
- ✓ run commands
- ✓ Docker volume persistence
- ✓ Overview of Docker Compose
- ✓ Docker Hub
- ✓ Creating your own image
- ✓ Advanced reference
- ✓ Create a Docker container to run Jenkins
- ✓ Create a Docker container to run a CI/CD pipeline
- ✓ Use case 1 (Why puppet)
- ✓ Puppet installation and configuration
- ✓ Resource implementation
- ✓ Managing files and executing programs
- ✓ Testing your code Using Puppet Languages
- ✓ Variables Numbers and Strings
- ✓ Facts
- ✓ control flow
- ✓ Regex
- ✓ Loops
- ✓ Resource Processing
- ✓ Advanced Course
- ✓ Puppet Modules
- ✓ Define QA environment
- ✓ Changing Base Module path
- ✓ Separation of Data from Code
- ✓ Introduction to Hiera
- ✓ Hiera Backend creation in Puppet
- ✓ Variables and Function lookups
- ✓ Using Puppet modules
- ✓ Puppet Forge-Server- GitHub repo.

Ansible

- ✓ What is Ansible
- ✓ Advantages of Ansible
- ✓ Environment Provisioning
- ✓ Configuration Deployment
- ✓ Installation of Ansible (AWS)
- ✓ Modules
- ✓ Playbooks and Writing a Playbook
- ✓ What is Monitoring
- ✓ Why we need monitoring
- ✓ Different tools of monitoring
- ✓ What is Nagios
- ✓ Nagios Architecture
- ✓ Different components of Nagios
- ✓ A typical Nagios Dashboard
- ✓ Installation and Configuration