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## DevOps Training

**Duration: 120Hrs**

### DevOps Syllabus

1. What is DevOps?
  - a. History of DevOps?
  - b. How does DevOps work anyways?
  - c. Principle of DevOps:
  - d. DevOps combines the best of all teams providing the following
  - e. Who should go for this course?
  - f. Prerequisites
2. Version control system
  - a. Benefits of version control
  - b. Installing Git
  - c. Git Setup
  - d. Creating a local repository, adding files, and committing changes
  - e. Viewing history and diffs
  - f. Staging changes as multiple commits
  - g. Deleting and renaming files
  - h. Undoing changes to the working copy
  - i. Undoing/redoing changes in the repository
  - j. Ignoring files with .gitignore
  - k. Cloning a Remote Repository
  - l. Basic Repository Statistics
  - m. Viewing Commits
  - n. Git Protocols
  - o. Viewing Branches and Tags
  - p. Fetching from a Remote
3. Issue Tracking Tool- JIRA
  - a. License and Free Trial
  - b. Jira features
  - c. JIRA Project
  - d. JIRA issues

**Head Office** :No. 602, 6th Floor, G Square Business Park, Plot No-25 & 26, Sector No-30, Landmark Opposite Sanpada Station, Vashi, Navi Mumbai – 400705.

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- e. JIRA workflow
- f. Practice Session
- 4. What is Configuration Management?
  - a. Configuration Management Process
  - b. Why You Need a Configuration Management Tool to Automate IT
  - c. Configuration Management Tools
  - d. Puppet
    - i. What is Puppet?
    - ii. Features of Puppet System
    - iii. Puppet – Architecture
    - iv. Puppet – Workflow
    - v. Installation and configuration of master server and agents
    - vi. Install Puppet Master
    - vii. Configure Puppet Master
    - viii. Install Puppet Agent
    - ix. Configure Puppet agent
    - x. Generate and Sign Certificate
    - xi. Module
    - xii. Create first module
    - xiii. Puppet manifest
    - xiv. Working with Variables
    - xv. Using Loops
    - xvi. Practice session
- 5. Chef
  - i. What is Chef?
  - ii. Features of Chef
  - iii. Chef – Architecture
  - iv. Key Building Blocks of Chef
  - v. Installation
  - vi. Create the Cookbook
  - vii. Practice session
- 6. CI tools installation and configuration –Jenkins
  - a. Getting Started with Jenkins
  - b. Installing Jenkins
  - c. System Requirements
  - d. Installation
  - e. Jenkins Setup and Build Jobs



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- f. Managing Plugins
- g. Installing a plugin
- h. From the web UI
- i. Updating a plugin
- j. Removing a plugin
  - i. Uninstalling a plugin
  - ii. Disabling a plugin
- k. Practice session
- 7. Build Automation – Maven
  - a. Introduction to Maven
  - b. Setting up Maven Environment
  - c. What is POM?
  - d. What is Repositories in Maven?
    - i. Local Repository
    - ii. Remote Repository
    - iii. Central Repository
  - e. Maven Build Life Cycle
  - f. Maven Build Automation
  - g. Build Automation using Jenkins Server
  - h. Setting up Jenkins Server
  - i. Creating a new job and Deploying the Build
  - j. Practice session
- 8. Artifact Storage
  - a. Introduction
  - b. What is a repository
  - c. Installing Nexus
  - d. Practice session
  - e.
- 9. Monitoring tool setup-Zabbix
  - a. Zabbix Installation
    - i. Adding Zabbix repository
    - ii. Server/proxy/frontend installation
    - iii. Creating Database
    - iv. Importing data
    - v. Configure database for Zabbix server/proxy
    - vi. Frontend configuration
  - b. Zabbix Agent Installation on Linux



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- i. Repository installation
    - ii. Agent installation
    - iii. Agent Configuration File
  - c. Configuration
    - i. Hosts and host groups
    - ii. Configuring a host
    - iii. Configuring a host group
  - d. Items
    - i. Creating an item
    - ii. Value mapping
    - iii. Configuration
  - e. Applications
    - i. Configuration
  - f. Triggers
    - i. Configuring a trigger
    - ii. Trigger expression
    - iii. Example
    - iv. Trigger dependencies
    - v. Configuration
    - vi. Trigger severity
    - vii. Mass update
  - g. Events
    - i. Event correlation
    - ii. Trigger-based event correlation
    - iii. Configuration
    - iv. Global event correlation
    - v. Configuration
  - h. Practice Session
- 10. ELK



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- a. ELK Logical architecture
- b. Elasticsearch
- c. Logstash
- d. Kibana
- e. ELK stack installation
  - i. Prerequisites
  - ii. Elasticsearch
  - iii. Install and configure elasticsearch
  - iv. Install and Configure Kibana
  - v. Install and Configure Logstash
  - vi. On client machine Filebeat installation
  - vii. Test and Practice session

## 11. Docker

- a. What is Docker?
- b. What are containers?
- c. Features of Docker
- d. Docker Architecture
- e. Installing docker on linux
- f. Docker registry
- g. Docker images
- h. Docker containers
- i. Practice session

## 12. Ansible

- a. Ansible Introduction
- b. Ansible Installation
  - i. Control machines
  - ii. Remote machines
- c. YAML basics
- d. Introduction to Ad-hoc commands
  - i. Parallelism and Shell commands
  - ii. File transfer
  - iii. Managing Packages



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- iv. Gathering facts
- e. Playbooks
  - i. Playbook Structure
  - ii. Create a playbook
- f. Roles
  - i. Role Directory structure
  - ii. Using roles
- g. Variables
  - i. What makes A valid variable name
  - ii. Variables defined in a playbook
- h. Practice session



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