

1. Introduction to Dev Ops and its Necessities

Learning Objectives - In this module, you will learn what is DevOps and its necessities, DevOps roles, day-to-day problems & their solutions. You will also learn about the various infrastructure layouts and understand Scalability and Availability.

Topics - DevOps, DevOps Roles, DevOps Necessities, DevOps Problems & Solutions, Making a DevOps Transition, Identifying cultural impediments and overcoming it, Building Accountability and Trust, Understanding the Infrastructure layouts and its Challenges, Understand Scalability and Availability, Networking Concepts from an enterprise perspective.

Practical's to be covered - Subnetting.

2. Understand Common Infrastructure Servers

Learning Objectives - In this module, you will learn about various Infrastructure Servers, their Configuration & Optimization.

Topics - Working of DNS Server at Internet Scale, DNS Installation, DNS Configuration, DNS Tuning and Geolocation. Understand Web Servers like Apache, Nginx and their differences, Configure Apache and Nginx for the Enterprise, Load Balancing through HA Proxy and Setup NFS for storage presentation.

Practical's to be covered - DNS Installation and Configuration, DNS Master/Slave Configuration, HTTPD Web Server setup, HA Proxy Setup - Both HTTP & TCP based load balancing and Nginx Installation and Configuration.

3. Implement Automated Installations and Deployments

Learning Objectives - In this module, you will learn about Automatic Installation of Servers, Continuous Integration, Configuration Deployments and Packaging.

Topics - Installation of Linux Servers using PXE boot or kick start method, Yum repository setup and Automatic system updates. Configuration of SVN and GIT.

Practical's to be covered - Linux Installation Methods - Setup PXE (Preboot Execution Environment) and Linux Repository Setup.

4. Understand Performance tuning aspects and basic Security for Infrastructure

Learning Objectives - In this module, you will learn about Performance aspects of the Infrastructure from an Enterprise perspective and Implementation of Security to make environment more secure.

Topics - Operating System tuning concepts and its Concerns, Types of Disk Schedulers, Performance and Use Cases, Network tuning Parameters and their Influence, Understand the Security at the OS and Network level, Configure Linux Firewall and other security aspects for a secured environment.

Practical's to be covered - Automatic System updates, SVN and Git Configuration and IP Tables.

5. Installation & Configuration of Jenkins and Puppet

Learning Objectives - In this module, you will learn about Installation & Configuration of Jenkins and Puppet.

Topics - Installation of Jenkins, Authentication with LDAP, UNIX etc, Integration with SVN, Remote command execution, Puppet Installation and Configuration, Puppet manifests and examples, Puppet with SVN.

Practical's to be covered - Jenkins installation and setup, Jenkins and SVN integration, Jenkins Remote execution, Build job by sending an email, Puppet installation and Configuration, Puppet Manifest examples- User creation, Tomcat installation, Apache Server installation and MySql Parameter changes.

6. Introduction to Automation with Ansible and Salt Stack

Learning Objectives - In this module, you will learn about the basics of Ansible, Ansible Playbooks, Ansible Inventory/Dynamic Inventory, Ansible Patterns.

Topics - Infrastructure as Code, Ansible Installation, Ansible Communication framework, Ansible Playbooks, Ansible Inventory/Dynamic Inventory, Ansible Patterns, Sample Scripts, SALT Stack States, SLS and Top files, Namespaces, Renderers, Templating Modules, Orchestration.

Practical's to be covered - Ansible Installation, Ansible Playbooks, Salt Installation, Running Salt.

7. Automation with Chef

Learning Objectives - In this module, you will learn about the Basics of Chef, Chef Cookbooks, Chef Architecture, Tools - Knife & Scripting and Chef Development Kit.

Topics - Chef Recipes, Chef Cookbooks, Chef Architecture, Tools - Knife & Scripting, Chef Development Kit (ChefDK)

Practical's to be covered - Command Line Tools: Chef and Knife Commands.

8. Monitoring, Logging, Tomcat and System Tools

Learning Objectives - In this module, we will look at Monitoring, logging and auditing and also various DevOps tools/commands that are necessary for the day-to-day activities. We will also look at setting up Tomcat Server.

Topics - Introduction to various logging tools, Understand System auditing, Install and Configure Nagios Monitoring for the Infrastructure, Installation of Tomcat Server and examples, Understand Openssl and Openssh details, Understand rsync for backups, Understand Commands like: Isof, netstat, Understand Virtual Memory, Free, top, vmstat, iostat, uptime, find, screen, strace, Disk commands like - df, du, mkfs, tune2fs, fdisk, dd, Understand /etc/fstab, Mount commands.