

RH124 - Red Hat System Administration - I

1. Getting started with Red Hat Enterprise

- Introduction and History of UNIX & Linux
- Differences between centos, red hat enterprise linux & fedora
- Difference between UNIX & LINUX

Describe and define open source, Linux distributions, and Red Hat Enterprise Linux

2. Downloading, Installing and Understanding Booting Process of OS - Redhat Linux

- Download the virtual box and installing in your systems
- Downloading and installing Redhat linux
- Understanding and deep dive into

POST, BIOS(UEFI), MBR, GRUB(GRUB2), SYSTEMD(initd), RUNLEVELS(TARGET)

- Understanding and deep dive into Linux architecture, kernel, interpreter, shells, memory

3. Linux FSH (File System Hierarchy)

- Understanding and deep dive into FSH

4. Access the command line

- Log into a Linux system and run simple commands using shells
- Understanding the terminals (TTY's) using the shell
- Identifying the shells and usage of shells

5. Manage files from the command line

- Copy, move, create, delete, and organize files while working from the bash shell
- understanding the commands to create, move, create, delete, sorting with commands by recursively and forcefully head, more, less, tail, cat commands
- Use input-output redirection.

6. Get help in Red Hat Enterprise Linux

- Resolve problems by using local help systems
- Help , man commands understanding
- Technical os support from enterprises linux

7. Create, view, and edit text files

- Manage text files from command output or in a text editor.
- Understanding the vi, vim, gedit, nano editors and their modes
- Understanding the inode.

8. Symbolic links or Backup Methods

Understanding the hard link and soft links

9. Manage local users and groups Managment

- Create, manage, and delete local users and groups, as well as administer local password policies.
- Understanding the commands useradd, userdel, usermod, groupadd, groupdel, groupmod, Passwd, gshadow commands and their policies implementation
- Switching users and accessing the shells

10. Control access to files

- Set Linux file system permissions on files and interpret the security effects of different permission settings
- Understanding the commands chmod, chown, setfacl, getfacl, sticky bits•

11. Monitor and manage Linux processes

- Evaluate and control processes running on a Red Hat Enterprise Linux system.
- understanding the top, ps, lscpu commands

12. Control services and daemons

- Control and monitor network services and system daemons using systemd.
- understanding the systemctl, service commands (status, start, stop, restart, enable modes)

13. Configure and secure SSH

- Configure secure command line service on remote systems, using OpenSSH.
- SSH authentication by using asymmetric method by generating the public key and• private key password less authentication modes
- SSH password authentication mode

14. File and Folder Transfer and downloading from linux -linux, linuxwindows, linux-mac (viceversa)

- Understanding SFTP, SCP, Rsync commands
- Understanding the winscp and filezilla
- Understanding the wget and curl commands

15. Analyze and store logs

- Locate and accurately interpret logs of system events for troubleshooting purposes.
- Understanding the system logs, user logs etc.

16. Manage networking

- Configure network interfaces and settings on Red Hat Enterprise Linux servers.
- Understanding iptables, netstat, telnet, ss, ficonfig, nslookup, dig commands.

17 Archive and transfer files

- Archive and copy files from one system to another.
- understanding the zip, gunzip, bzip, archive(tar) commands.

18 Searching the Contents in linux

- Understanding the grep, locate, find commands

19 Install and update software packages

- Download, install, update, and manage software packages from Red Hat and DNF package repositories.
- understanding the rpm, yum, wget commands

20. Access Linux files systems

- Access, inspect, and use existing file systems on storage attached to a Linux server.
- Understanding the fstab, mtab, blkid commands

21. Analyse servers and get support

- Investigate and resolve issues in the web-based management interface, getting support from Red Hat to help solve problems.

22. Comprehensive review

- Review the content covered in this course by completing hands-on exercises.

RH134 - Red Hat System Administration – II

1. Schedule future tasks

- Understanding the cron jobs, crons, anacron, crontab,

2. Tune system performance

- Understating the system, memory, IOstat, Network
- Understanding the /proc and top and ps
- Understanding the virtual memory, system activity reported , iostat,

3. Manage SELinux security

- Understating the selinux importance in linux
- Implementing the selinux modes target, permissive, enabled,disabled,enforcing.

4. Maintain and manage basic storage

- Understanding the File system and file system types ext2,ext3,ext4 and xfs,btrfs,etc
- Harddisk storage partition and formatting
- Understanding the LVM, creating, resizing, extedning, LVM.

7. Network-attached storage or File server

- NFS creating ,accessing , deleting

8. Control the boot process

- Understanding the run levels to limit the boot process

9. Manage network security

- Ip tables, ethernet cards attaching

Course Content for AWS Cloud Training

Amazon Web Services-Essentials

Course Objectives:

- Recognize terminology and concepts as they relate to the AWS platform
- Navigate the AWS Management Console Understand the security measures AWS provides
- Differentiate AWS Storage options and create an Amazon Simple Storage Service (S3) bucket
- Recognize AWS Compute and Networking options and use Amazon Elastic Compute Cloud (EC2) and Amazon Elastic Block Storage (EBS)
- Identify Deployment and Management options
- Load balance and Auto-Scaling with EC2
- Use EC2 APIs
- Debug AWS EC2 instance

Why Choose Apponix for AWS Cloud Training?

- Apponix has excellent qualified AWS Trainers
- 100% student satisfaction rate, we will continue that in future.
- 5000+ satisfied students overall till now
- Excellent Lab facility for AWS Training
- There are no hard & fast rules for timings.
- All our trainers are min 7+ years of AWS cloud experience.

1: Introduction to AWS

- Navigate the AWS Management Console
- Recognise AWS Global Infrastructure
- Describe the security measures AWS provides
- Create an Amazon EC2 instance
- Remotely connecting to an EC2 instance
- Setting up Amazon Linux and Apache web server
- Browsing Amazon Machine Images (AMI)
- Specifying security groups and key pairs
- Creating new images off of running instances

2: AWS Storage

- Identify key AWS storage options
- Describe Amazon EBS
- Use Amazon EBS with AmazonEC2
- Working with Volumes and snapshots
- Transmitting data in/out of the Amazon cloud

3: Installing Software in your Amazon Instance

- Implementing a Web server in an Amazon Linux/Windows Instance
- Configure the firewall to access a Webserver.

4: Security in Public Cloud

- Security issues in PublicCloud
- Securing the Access : Creating a RSA Public/Private Key forVMs
- Creating a software firewall
- Configuring firewall rules
- Securing the access with an Elastic IPs
- Managing users with Identity AccessManagement(IAM)

5: Alternate access

- Using EC2 Command Line APIs [from Windows/Linuxmachines]

6 Load-balancing with EC2 and Auto Scaling

- Creating and using LoadBalancers
- Distributing incoming traffic with elastic loadbalancing
- Dynamically adding and removing instances with AutoScaling

7: CloudWatch to be seen along with Auto Scaling

- Overview of Monitoring and SettingAlarms
- Visualising utilization metrics withCloudWatch
- Setting alarms to send and receive notifications

8: Simple Notification Services [to be seen along with AutoScaling]

- Using SNS to sendNotifications

9: Amazon S3 Basics

- CreatingBuckets
- CreatingFolders
- UploadingObjects
- Making ObjectsPublic
- CreatingBuckets
- Securing Bucket/Objectaccess
- Configuring a Bucket as StaticWebPage
- Controlling Life Cycle of a Bucket
- Accessing Amazon Buckets from Windows/Linuxdesktops/Servers

10: Virtual Private Cloud

- Create a VPC [VPC with a Single PublicSubnet]
- Create and attach an Internet gateway
- Create an Amazon VPCsubnet
- Set up routing in the VPC
- Set up a security group to control the inbound and out bound traffic
- Launch an instance into the subnet
- VPC console to allocate an Elastic IP address and assign it to theinstance
- Amazon EC2 console to terminate your instance and the Amazon VPC console to delete your VPC

11: AWS-RDS • Overview of AWS RDS

- Launching a MySQL Database in RDS
- Creating Backups/Snapshots and Read Only DBs
- Connecting to RDS-DB using local DB-Clients
- Terminating a DB instance.

12: AWS-IAM

- Creating Groups and Defining access policy
- Creating Users
- Login to AWS account using new users

13: Installing Software in your Amazon Instance

- Implementing a Web server in an Amazon Linux/WindowsInstance
- Configure the firewall to access a Webserver.

14: AWS-CloudFormation

- Introduction to CloudFormation
- Launching instances in EC2 usingTemplates.

15: AWS-CloudFront

- Concepts ofAWS-CloudFront
- Host a Website withCloudFront.

16: AWS-Route53

- Creating a Failover setup for Load Balancers running in different AWS regions[users need to have a registeredDomain]
- Health Check a private website.

17 :AWS-Cloud Trial

- Using CloudTrial to trail the APICalls

18 : Hosting Applications withElasticBeanstalk

- Improving application delivery with Platform as a Service(PaaS)
- Deploying scalable applications on the AWScloud
- Selecting and launching an application environment (sample application in PHPand MySQL)

19 :Dynamo DB

- Overview of AWS DynamoDB
- DynamoDB Tables and NamingConventions
- Data Types inDynamoDB
- DynamoDB CapacityUnits
- ConfiguringAlarms
- Tacking Backup andRestore

20 : Lambda Function

- Overview of AWS Lambda
- Creating a Lambda Function with Node.js
- Lambda Pricing & Uploading Code
- Connecting Lambda Functions to API Gateway Endpoints
- Accessing Lambda Logs
- Getting Started with Body Mapping Templates.

21 : API Gateway

- Overview of API Gateway
- Create a REST API
- Create Resource
- Create HTTP Methods
- Deploy API
- Integrating with Lambda function.

22 : Simple Queue Service

- Overview of SQS
- Create Standard queue
- Create FIFO queue
- With Timer or Delay to a Standard queue.

23 End user Computing, Organization setup and Resource Sharing with (SSO)

- Directory services (Launching AWS managed AD)
- SSO integration with AD users
- Work Email
- Work docks
- Workspaces
- AWS management SSO login.

24 : AWS System Manager

- Run command
- Content De-duplication
- Delete the queue

25 : Compute

- 2 and 3 tier web architecture running in EC2 (windows andLinux)
- Multiple Child application Running in EC2 (windows and Linux)
- Light sail implementation • ECS and ECR launching Docker images
- Understanding of launching On Demand Instances, Reserved, spot, Dedicated Hosts andDedicated Instance.

26 : AWS-Automation with Python Boto3module

- Complete In Depth understanding and implantation AWS-Automation by usingBoto3 Module
- Launching EC2 and Entire VPC creation by using Python code.
- Creation S3 Buckets by writing python boto3module
- Creating IAM users and Roles and Polices by using Python boto3module

27 : Security, Identity and Compliance Management

- Securing the web application by using the WAF
- AWS Inspector
- AWS security Manager (SSL/TLS Certificates)
- AWS Shield • AWS Artifact
- AWS Key Management Service
- Compliance • Patch Manager

28 : AWS Cost Management

- AWS Cost Explorer
- AWS Budgets
- AWS Market place Subscription.

DevOps Training

DevOpsOverview

- Devops roles have increased from 10% to 45% in 2018 and Nearly 70% of the system administrators are replaced with roles in devops.
- In short Devops is definitely a promising career for all IT professionals. In next few years 90% of the companies will adopt devops culture.
- In India average salary for a devops professionals is Rs 13,34,890 per year. Devops professionals have Hugh demand and potential in near future. To become a devops professional you should learn few automation tools like Chef, Puppet, Ansible, Jenkins and few other very useful tools like GIT, Nagios, Dockers.
- Apponix is dedicated to provide best learning experience for its students since 6 years. We offer the best DevOps training in Bangalore, we are proud to say we are the top DevOps training provider in Bangalore, we make sure all our students will get good training experience.
- All our DevOps instructors are working in MNC and have min 7 years of experience.
- Apponix DevOps Training course is designed by industry experts and to cover latest marketcloud requirements.
- DevOps Certification Training Course which will prepare you for a career in a DevOps environment, the fastgrowing field that bridges the gap between software developers and operations.
- You will become an expert in deployment, automation of configuration management tools such as GIT, Docker, Jenkins, Puppet and Nagios.
- DevOps Training from Apponix will help you gain skills on tools which are used in devops environment.
- In DevOps training course you will be equipped with latest technologies used in the DevOps

environment The topics covered are very up to date and very much relevant to the devops, The skills you gain will be very helpful to work in either production support team, projects team or BAU Team.

DevOps Training course objectives:

- In-depth knowledge on Continuous Development, Continuous Integration, and Continuous Testing by performing hands-on on GIT, Jenkins and Selenium
- Comprehensive knowledge on Configuration Management, and Continuous Deployment using Puppet, Ansible Working on Continuous Deployment stage by performing hands-on on popular tools like Docker and Kubernetes.
- The exposure to the stage of continuous monitoring using Nagios.
- The ability to automate all aspects of a modern code delivery and deployment pipeline using: Source code management tools.

Build & monitoring tools
 Test automation tools
 Containerization through Docker
 Configuration management tools

Why choose Apponix as a Top DevOps Training Institute in Bangalore?

- Apponix has excellent trainers for Devops with rich experience in industry.
- 100% student satisfaction rate in DevOps training
- More than 1000 students completed training in DevOps since 2013
- Excellent Lab facility for DevOps Training
- We have excellent rating till date, overall 4.9 Rating in Google & Facebook.

DevOps Training Course Content

1: DevOps Lab Setup tools for Linux and Windows Environment

- Git Bash installation and Github account setup
- Tomcat installation and Configuration
- Jfrog Artifactory installation and Configuration
- Maven Installation and Configuration

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- JenkinsinstallationandConfiguration
- AnsibleInstallationandConfiguration
- SonarqubeinstallationandConfiguration
- DockerInstallation andconfiguration
- Javainstallationand Configuration
- EnvironmentalvariablesetupforbothwindowsandLinux

2:IntroductiontoDevopsandDevsecops

- Introductionto DevOps
- WhatisDevOps?
- SDLCmodels,Lean,ITIL,Agile
- WhyDevOps?
- HistoryofDevOps
- DevOpsStakeholders
- DevOpsGoals
- Important terminology
- DevOpsperspective
- DevOpsandAgile
- DevOpsTools
- Configurationmanagement
- ContinuousIntegrationandDeployment

3:IntroductiontoSDLC,Softwaretesting,Agile:Softwaretestinglifecycle

- WorkingwithBlockboxtesting
- WorkingwithWhiteboxtesting
- WorkingGreyboxtesting
- WorkingwithFunctiontesting
- WorkingwithRegressingtesting,smoketesting,Systemtesting,Integrationtestingetc.

4:AgileMethodologies:

- ProcessflowofScrum Methodologies
- Projectplanning,scrumtesting,sprintPlanningandReleasemanagement
- Analysis
- Design,Executionandwrappingclosure

5: LINUX Administration

- Introduction to Linux Families (ex: Redhat & Debian Family)
- Working with APT and YUM and DNF
- Working with AWK and SED commands

6: Installation and Initialization:

- Installation, Package Selection
- Anatomy of a Kick start File, Command line
- Introduction to Bash Shell o System Initialization, Starting the Boot Process: GRUB.

7: Boot and Package Management:

- Securing single-user mode (su login)
- Shutting down and rebooting the system
- RPM Package Manager, Installing and Removing Software, Updating a Kernel RPM
- YUM Command set, Install packages by using yum.
- Apt-get command set, Apt-cache package management.

8: User Administration:

- Understanding different types of groups and creation of groups
- Creation of users in different groups o Understanding Password, Shadow Files
- Understanding password aging
- Creation of quotas for users, groups and file systems
- Understanding users security files
- The different commands for Monitoring the users
- TROUBLESHOOTING o Automation of jobs – Cron , at
- Working with commands tar, find, grep, etc.

9: Run levels:

- Understanding the different types of run-levels
- Understanding different types of shutdown commands
- Understanding run control scripts o Understanding the different types.

Version Control/ SCM(Git)

1: Introduction to Git

- Overview of SVN, GIT , Clear case , perforce & Comparision o Introduction of Git
- Selecting Git Client
- Creating Repository
- Working with Tag
- Creating and Merging Branches
- Executing Git Commands
- Git Logs , Git stash, Git rebase
- Merge conflict issues resolving
- Git pull, clone, fetch

Ansible Modules

1: Introduction to Ansible

- What is Ansible
- Change Management
- Provisioning with Ansible
- Benefits of using Ansible

2: Ansible Building blocks and Process flow

- Introduction to Ansible Anatomy o Ansible Requirements Specification
- Overview of Ansible Components
- Overview of Ansible Strategy

3: Ansible Playbook Modules and directory structure

- Introduction to Ansible Playbook
- Introduction to Ansible Modules
- Lab (Docs, setup, service, yum ...etc)

4: Variable, Facts and jinja2 templates

- Working with Ansible Variable o Working with Facts
- Working with Jinja2 Template.

5: Play and Playbooks

- Overview of Ansible Playbooks
- Playbook Language Example
- Working on Ansible Handlers o Executing a Playbook.

Docker Modules

1: Getting Started with Docker

- Introduction to Docker
- What's under the hood - Namespaces, Cgroups and OverlayFS
- Understanding Virtualization
- Virtualization vs Container

2: Docker Installation

- Creating a Virtual Docker Host(CentOS) by using Vagrant
- Installing Docker on CentOS
- Introduction to Docker namespaces

3: Docker Images

- Introduction to Docker Images
- Building a Docker Image with a Dockerfile
- Sharing Data in Your Docker Host with Containers
- Sharing Data Between Containers
- Copying Data to and from Containers
- Creactoing Docker Hub Account.
- Building Images using DockerFile.
- Pull and Push Images From/To Docker Hub.

4: Docker Networking

- Introduction to Docker Networking
- Finding the IP Address of a Container
- Setting Up a Custom Bridge Network for Docker

5: Container Operations

- Port Mapping for Docker
- Creating, Starting, Stopping, Renaming, Removing Containers
- Inspacting Containers
- Limiting Rrsoruces Memory and CPU
- Prioritizing CPU Utilization

6: Docker Compose

- Introduction to Docker compose
- Creating Docker compose file
- Executing Docker Compose file

Jenkins Modules

1: Introduction to Continuous Integration and Jenkins-CI/CD

- What is Continuous Integration
- Jenkins Continuous Integration
- What is Continuous Deployment
- Jenkins Vs Jenkins Enterprise

2: Jenkins Installation

- Downloading and Installing Jenkins using TomCat
- Creating Jenkins as a Service.
- Starting and Stopping Jenkins

3: Configure Jenkins and User Management

- Secure Jenkins
- Create a new user
- Generate ssh key for Jenkins user
- Plug-in management

4: Jenkins jobs setup

- Setting up a Jenkins job (Freestyle, Pipeline, maven, MSBuild, Pybuild)
- Jenkins parametrized jobs setup (choice params,boolean params etc)
- Email notification jobs
- Parallel jobs configuration
- nodes (slaves) configuration

5: Jenkins Integration

- Git integration with Jenkins
- Maven Integration with jenkins
- ansible , artifactory integration
- Docker and scanning tool integration
- AWS and code review tool

6: Jenkins User administration

- Role based administration
- Project based administration
- Metric based administration
- Slaves configuration
- Users and groups creation

Maven Modules

1: Build Tolls overview

- What is maven and Msbuild, Pybuild,gradle and ant
- Maven Evolution
- Maven Objective and Environment setup
- Maven project creation
- What is POM.xml and super POM
- Maven build life cycle creation and Default Build lifecycle

2: Customized Project and plugin setup

- Maven Project setup
- Maven plugin download and setup
- Maven Build automation with CI service

3: Maven Repositories and GAV snapshots.

- What is GAV and project and Snapshots ,version
- Maven Web application creation with pom.xml
- What is Maven repository
- Local repo
- Central repo and Remote repo
- Maven Dependencies and plugin

Complete guide to Kubernetes

1: Introduction to Kubernetes

- The need for a Container Orchestration Engine
- Battles of COEs, which one to choose
- Key Features of a COE.
- What makes Kubernetes the defacto COE choice.
- Negatives of using Kubernetes

2: Key Concepts of Kubernetes

- Namespaces o Pods
- Replica Sets and Deployments
- Service Discovery and Load Balancing
- Configmaps, Storage, Network, RBAC
- Statefulsets, Crons and Jobs
- Kubernetes Architecture

3: Setting up Environment

- Provisioning and configuring on AWS
- Initialise Cluster with Kubeadm
- Setting up Weave CN
- I o Launching Kubernetes Dashboard
- Setting up a kubernetes Visualizer
- Resetting cluster created with kubeadm

4: Building blocks of Pods

- Introduction to pod o Writing pod Specification
- Launching and Operating Pods (Login to the pod, browsing the web UI of the pod)
- Attaching a volume to a Pod
- Launching Multi-Container Pods

- Connecting to Individual Containers
- Launching Replica Set and Fault Tolerance
- Solution part - Deploying a worker app

5: Managing Application Configurations with ConfigMaps and Secrets

- Introduction to Config Maps and Secrets
- Creating Config Map for Vote app
- Setting up Environment Specific Configs
- Adding Configs from Files
- Creating Secrets to Encrypt Database
- Setting Environment vars using Secrets

6: Setting up Firewall with Network Policies

- Creating default network policy for namespace
- Exposing public facing app and allowing inter namespace communication.

Promethues and Grafana

- Installation and configuration
- Adding metric and pod level and node level
- Installing grafana pkugin in Prometheus

Terraform

- Installation and integration in AWS
- Understanding basic terra form modules providers
- Writing terraform code to provision compute network storage in AWS

Shell Scripting

Introduction

- Kernel
- Shell
- How to use Shell
- Common Linux Command Introduction
- Linux commands related to the process
- Redirection of Standard output/input
- Redirectors
- Pipes• & Filters
- How to Run Shell Scripts
- Quotes in Shell Scripts
- Shell Arithmetic
- Command Line Processing (Command Line Arguments)
- Exit Status
- Filename Shorthand or meta Characters (i.e. wild cards)

Python Programming

Introduction

- What is Python and history of Python
- Unique features of Python
- Python-2 and Python-3 differences
- Install Python and Environment Setup
- First Python Program
- Python Identifiers, Keywords and Indentation
- .Comments and document Command-line arguments
- Getting User Input
- Python Data Types
- What are variables?
- Python Core objects and Functions
- Number and Maths
- Assignments

CONTROL STATEMENTS

- If-Else
- If-Else If-Else
- While Loop
- For Loop
- Break
- Continue
- Assert
- Pass
- Return

LIST, RANGES & TUPLES IN PYTHON

- Introduction
- Lists in Python
- More about Lists
- Understanding Iterator's
- Generators, Comprehensions and Lambda Expressions
- Generators and Yield
- Next and Ranges
- Understanding and using Ranges
- More About Ranges
- Ordered Sets with tuples

PYTHON DICTIONARIES AND SETS

- Introduction to the section
- Python Dictionaries
- More On Dictionaries
- Sets
- Python Sets Examples
- Input and Output in Python
- Reading and writing text files
- Writing Text Files
- Appending to Files and Challenge
- Writing Binary Files Manually
- Using Pickle to Write Binary Files

PYTHON BUILT IN FUNCTION

- Python user defined functions
- Python packages functions
- Defining and calling Function
- The anonymous Functions
- Loops and statement in Python
- Python Modules & Packages

ThankYou