

# **RHCSA & RHCE**

## **Course Content**



# Red Hat System Administration (RHCSA)

## Outline for this course

**48:00 Hours**

### 1.Introduction to RHEL

- Kernel
- Shell
- What is Linux/Unix?

### 2.Installation of LINUX

- System requirements
- Types of Installation
- Installation steps

### 3.Accessing the Command Line

- Introduction of CLI, GUI & VC
- Introduction to Bash Shell
- Introduction to Terminal
- File System Hierarchy
- Basic Commands
- Editor
- More operations on shell

### 4.Managing User & Groups

- Users
- Groups
- Managing Password & Account Policy
- Important files related to user and group
- Switch user
- Managing User privilege with SUDO

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## 5.Managing Permissions In Linux

- File Permissions
- Special Permissions

## 6.Managing Network

- TCP/IP Network Model
- Network Commands
- Introduction of IPv4 Addresses
- Introduction of MAC
- Introduction of IPv6
- Network Troubleshooting

## 7.SSH (Secure Shell)

- Openssh
- Key-based authentication
- Compression and Archiving
- Hands-on Labs

## 8.Package Management

- RPM Package Manager
- Yum Package Manager
- Yum v/s .DNF
- Hands-on Labs

## 9.Controlling Services & Daemons

- Features of Systemd
- Using Service Unit
- Using Target Unit
- Configurations of Systemd

## 10. Managing Linux Processes

- Parent and Fork Process
- Process State
- Listing Process
- Process as Job
- Killing Process
- Describing Load Average

## 11. Analyzing & Storing Logs

- Log Priority
- System-journald
- Rsyslog
- Log Rotation

## 12. Analyzing Servers & Getting Support

- Enable Web console-Cockpit
- RedHat Insight

## 13. Managing Standard Partitions

- Partition Scheme as
- Disk Naming
- Managing Disk by parted
- Created partition by fdisk
- Filesystem
- Mounting the Partition
- Managing Swap partition

## 14. Managing Logical Volumes

- Logical Volume Management(LVM)

## 15.Selinux – Security Enhanced Linux

- Introduction of SELinux
- Managing File's Context level
- Managing Port's context level
- Managing SELinux Boolean

## 16.FireWalld – Managing Network Security

- Zones in Firewallld
- Helpful commands of IPtables

## 17.TroubleShooting & Boot Process

- GRUB2 – Grand Unified Boot loader
- Breaking Root .Password
- Securing Root password
- Debug Shell
- Using The Emergency Rescue Targets
- Boot Process

## 18.Task Scheduling

- Schedule Job Using "at"
- Schedule Job using "crontab"
- Managing Temporary File

## 19.Accessing Network Attached Storage

- Creating NFS Server
- Creating NFS Client

## 20.Kickstart & Virtualization

- Steps involve in Kickstart
- Virtualization



## 21.Improve Command Line Productivity

- Use of Find
- Use of Grep
- Use of SED
- Use of AWK
- Writing Simple batch Scripts
- Hands-on Labs

## 22.Task Scheduling

- Schedule Job Using "at"
- Schedule Job using "crontab"
- Managing Temporary File

## 23.Accessing Network Attached Storage

- Creating NFS Server
- Creating NFS Client

## 24.Kickstart & Virtualization

- Steps involve in Kickstart
- Virtualization

# Red Hat Certified Engineer (RHCE) RHEL 8

## Outline for this course

**32:00 Hours**

### 1.Introduction of Ansible

- Admin Task
- What is Automation
- Infrastructure As Code
- Ansible
- Ansible – Agentless Tool
- Service Managed by Ansible
- Service Beyond Ansible
- Properties of Ansible
- Ansible Tower
- Installation of Ansible
- Ansible – Control Node & Managed Host
- Installation with subscription
- Installation with python
- Installation with epel
- Hands-on Labs

### 2.Deploying by Ansible

- Ansible Inventory
- Overriding the Location of the Inventory
- Host Patterning
- Ansible Infrastructure
- Authentication with root
- Authentication by Local User
- SUDO Configuration for Ansible
- Ansible Configuration
- Customizing location of ansible.cfg

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- Ansible Module
- Core Module
- Extra Module/Community Module
- Custom Module
- Module Categories
- Ansible-doc
- Idempotency with Module

### 3. Ansible Ad-Hoc

- General Module Category
- Ping Module
- Setup Module
- To Check facts
- Stat Module
- File Module
- Copy Module
- Fetch Module
- Synchronize Module
- Yum Module
- Service Module
- User Module
- Authorized \_key
- ACL Module
- URI Module
- Unarchive Module
- Cron Module
- Selinux Module
- Shell Module
- Command Module
- Logs on Managed Host



## 4.Implementing Playbook

- Playbook vs AdH0c
- Managing Playbooks
- Basic of Play Book
- Simplify the complexity of space in YAML file
- Basic Sample of Playbook
- Deprecated sample of Playbook
- Playbook with Privilege Escalation
- Execution and Troubleshoot of Playbook
- Playbook and Idempotent
- .Multiple plays in playbook
- More Usecase of Playbooks
- Managing files Using Playbook

## 5.Variables in Ansible

- Introduction
- Naming Variable
- Defining Variable
- Play Scope Variable
- Host based and group based variables
- Global Scope Variable
- Variables and Arrays
- Variable in external file
- Include variable for Task
- Debug and Register Variable
- Debug
- Register
- Hands-on Labs

## 6. Ansible Vault

- Commands of Ansible Vault
- Ansible Vault and Playbook
- Hands-on Labs

## 7. Variables in Ansible

- Using Ansible Facts
- Older fact Approach
- New fact Approach
- Disable Ansible Facts
- Custom Facts
- How to call custom facts in play book
- Write custom fact on managed host
- Using custom fact on managed host
- Hands-on Labs

## 8. Implementing Task Control

- Loops in Playbook
- Loop Sample
- Loop with Variables
- Conditions in Playbook
- Logical Conditions
- Loop and Conditional Task
- Enable disable task using Booleans
- Implementing Handler
- Error Handlers
- `ignore_errors = yes`
- `Force_handlers: yes`

- Block error handling
- Failed\_when:
- Changed\_when

## 9. Jinja Template

- Magic Variable
- Loops in Jinja2
- Hands-on Labs

## 10. Managing Large Projects

- Managing inventory
- Selecting Host and Patterning
- Dynamic Inventory
- Fork and Serial in ansible
- Fork
- Serial
- Including and Importing files
- Limitations of Includes

## 11. Implementing Roles

- Path for Roles
- Creating Roles
- Ansible Galaxy
- Installing RHEL System Roles
- Hands-on Lab

## 12. Troubleshooting & Automating Admin Task

- Troubleshooting Commands
- Automating Admin Task

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