



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**Red Hat Enterprise Linux 7**

**COURSE CONTENT:**

**RH124 Red Hat System Administration I**

Red Hat System Administration 1(RH124) is designed for IT Professionals who are new to Linux. This course will actively engage students in task focused activities, lab-based knowledge checks, and facilitative discussions to ensure maximum skill transfer and retention. In addition GUIbased Environment will be featured to build on the student's existing technical knowledge, while command line concepts will be introduced to provide a foundation for students planning to become full time Linux system administrator.

**Course Outline**

Unit 1: Accessing the Command Line, Recognize the BASH shell based on the default prompt. Use Linux efficiently by switching between virtual consoles, Display usage messages and be able to interpret a command's syntax.

Unit 2: Managing Files from the Command Line, Recognize and Find Familiarity in a File-system Tree, Learn Terms Like "root" Directory and Subdirectory, Introduction to Different types of Data in Separate System Directories.

Unit 3: Getting Help in Red Hat Enterprise Linux, Learn "man" Terminology, Including Topics and Sections, Become Aware of The importance of less-noticed man sections.

Unit 4: Creating, Viewing and Editing Text Files, Control Output to Files, Use Pipe to Control Output to Other Programs.

Unit 5: Manage Local Linux Users and Groups, Explain the Role of Users and Groups on a Linux System and How They are understood by the Computer.

Unit 6: Controlling Access to Files with Linux File-system Permissions, Explain How the Linux File Permissions Model Works.

Unit 7: Monitoring and Managing Linux Processes, Learn the Processes Lifecycle, in Order to better Comprehend Process States.

Unit 8: Controlling Services and Daemons, List System Daemons and Network Services Started by System services and Socket units.

Unit 9: Configuring And Securing Open-ssh Service, Log into a Remote System Using ssh to Run Commands From a Shell Prompt.

Unit 10: Analyzing and Storing Logs, Describe the Basic "syslog" Architecture in RHEL7

Unit 11: Managing RHEL Networking, Explain Fundamental Concepts of Computer Networking.

Unit 12: Archiving and Copying Files between Systems To Create Backups and Transfer Files Over The Network.



Unit13: Installing and Updating Software Packages, Register System With Your Red Hat Account and Entitle Them to Software Updates for Installed Products.

Unit 14: Accessing Linux File-systems, Determine which Directories in the File-system Hierarchy are Stored on Which Storage Devices.

Unit 15: Using Virtualized Systems, Recognize the Consistent Use of KVM Architecture Throughout of Red Hat Product Line.

Unit 16: Accessing the Command Line

## **RH 134 Red Hat System Administration II**

Red Hat System Administration II (RH134) is designed for IT Professionals working to full time Linux Administrators, the course is a follow ups to rh124(SA1). This course will actively engage students in task focused activities, lab-based knowledge checks, and facilitative discussions to ensure maximum skill transfer and retention. Students who attend System Administration I and System Administration II will be fully prepared to take the Red Hat Certified System Administration (RHCSA)Exam.

### **Course Outline**

Unit 1: Automating Installation with Kickstart, Explain Kickstart Concepts and Architecture, Install and configure Linux using Kickstart

Unit 2: Using Regular Expressions with "grep", Create a Regular Expressions that match desired data.

Unit 3: Creating and Editing Text files with vim, Explain the three main modes of "vim".

Unit 4: Scheduling Future Linux Tasks, Scheduling tasks using at and cron.

Unit 5: Managing Priority of Linux Processes, Explain about Linux Processes and nice values.

Unit 6: Controlling Access to Files with Access Control Lists (ACL),Describe ACL's and file system mount options.

Unit 7:Managing SELinux Security, Explain the Basics of Se-Linux permissions and Context Transitions, Display Current Se-Linux Modes, Correctly Interpret the Se-Linux Context of a File, Identify Current Se-Linux Boolean Settings.

Unit 8: Connecting to Network-Defined Users and Groups, User authentication using centralized Identity Management Services.

Unit 9: Adding Disks, Partitions, and File Systems to a Linux System, Create and Delete disk Partitions on disks with an MBR Partitioning Scheme Using "fdisk". Create and Delete disk Partitions on disks with an GPT Partitioning Scheme Using "gdisk", Format Devices Using "mkfs" Mount File System into the Directory Tree

Unit 10: Managing Logical Volume Management (LVM) Storage, How to manage high performance LVM storage.



Unit 11: Accessing Network Attached Storage with Network File System (NFS), Access , Mount and unmount NFS Shares .

Unit 12: Accessing Network Storage with SMB, How to mount and unmount smb file-system using the command line.

Unit 13: Controlling and Troubleshooting the Red Hat Enterprise Linux Boot Process, Describe and Influence the RHEL Boot Process.

Unit 14: Limiting Network Communication with Firewalled, Configure the Basic Firewall Using "firewalld", "firewalld-config" and "firewalld-cmd".

Unit 15: Comprehensive Review, Comprehensive Review of System Administration 2

### **RH254 Red Hat System Administration III**

Red Hat System Administration III (RH254) is designed for experienced Linux administrators who require automation techniques using Bash Scripting and deployment of network services includes DNS , , APACHE HTTPD, MARIADB, POSTFIX. MAIL SERVER, NFS ,SAMBA , ISCSI STORAGE, FIREWALLD etc.

#### **Course outline**

Unit 1: Controlling Services and Daemons, Control System Daemons and Services Using Systemctl.

Unit 2: Managing IPV6 Networking, Configure and troubleshoot IPV6 address on Red Hat Enterprise Linux systems

Unit 3: Configuring Link Aggregation and Bridging, Configure and Troubleshoot Network Bonding and Teaming on RHEL

Unit 4: Network Port Security, Implement a Secure Network Using Firewall

Unit 5: Managing DNS for Servers, A Brief Study about DNS Records and how to Configure a Secure Caching DNS.

Unit 6: Configuring Email Transmission, Configure RHEL Server to Transmit all E-mail through an Unauthenticated SMTP Gateway.

Unit 7: Providing Remote Block Storage, How to Access Remote Storage Space Using ISCSI.

Unit 8: Providing File Based Storage, export File System to Client Systems Using NFS and Providing Security.

Unit 9: Configuring MariaDB Databases, Install and Configure Mariadb Database.

Unit 10: Providing Apache HTTPD Web Service, Configure a Secure Apache HTTPD Web-service.

Unit 11: Writing Bash Scripts, Write simple shell scripts using Bash.



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Unit 12: Bash Conditionals and Control Structures, Bash Conditionals and Other Control Structure.

Unit 13: Configuring the Shell Environment, Use Bash Startup Scripts to Define Environment Variables, Aliases and Functions.

Unit 14: Linux Containers and Docker, Details about Linux Containers and Dockers.

Unit 15: Comprehensive Review, Comprehensive Review of System Administration 3