



Hewlett Packard Enterprise

Course Datasheet

Linux Administration with Scripting

Education Services course product number – HPE-LINUX-v1.0

Course length – 60 Hrs.

Delivery mode – Instructor Led Training (ILT)

Virtual Instructor Led Training (vILT)

Red Hat Linux (RHEL -7) Essentials and Administration is designed for beginning Linux system administrators who are interested in learning essential system administration skills for Enterprise Linux. The class provides hands-on training to effectively use, customize, and script common command line utilities. In addition, administrators will learn how to perform essential system administration tasks including basic installation, package management, and user management procedures.

Course Objective

Basics of Linux, User management, Disk Management, Package Management, Server Management, Security Implementation, Scripting.

Prerequisite

User-level experience with any computer operating system.

Course Modules

Chapter 01 – Linux Basics

- Access the command line
- Log in to a Linux system and run simple commands using the shell.
- Manage files from the command line
- Copy, move, create, delete, and organize files from the bash shell prompt.
- Get help in Red Hat Enterprise Linux
- Resolve problems by using online help systems and Red Hat support utilities.
- Create, view, and edit text files
- Create, view, and edit text files from command output or in an editor.
- Manage local Linux users and groups
- Manage local Linux users and groups, and administer local password policies.
- Control access to files with Linux file system permissions
- Set Linux file system permissions on files and interpret the security effects of different permission settings.
- Monitor and manage Linux processes
- Obtain information about the system, and control processes running on it.
- Control services and daemons

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- Control and monitor network services and system daemons using systemd
- Configure and secure OpenSSH service
- Access and provide access to the command line on remote systems securely using OpenSSH
- Analyze and store logs
- Locate and accurately interpret relevant system log files for troubleshooting purposes.
- Manage Red Hat Enterprise Linux networking
- Configure basic IPv4 networking on Red Hat Enterprise Linux systems.
- Archive and copy files between systems
- Archive files and copy them from one system to another.
- Install and update software packages
- Download, install, update, and manage software packages from Red Hat and yum package repositories.
- Access Linux file systems
- Access and inspect existing file systems on a Red Hat Enterprise Linux system.
- Use virtualized systems
- Create and use Red Hat Enterprise Linux virtual machines with KVM and libvirt.

Chapter 02 – Linux Administration, Server and Security

- Automate installation with Kickstart
- Automate the installation of Red Hat Enterprise Linux systems with Kickstart.
- Use regular expressions with grep
- Write regular expressions that, when partnered with grep, will allow you to quickly isolate or locate content within text files.
- Create and Edit text files with vim
- Introduce the vim text editor, with which you can open, edit, and save text files.
- Schedule future Linux tasks
- Schedule tasks to automatically execute in the future.
- Manage priority of Linux processes
- Influence the relative priorities at which Linux processes run.
- Control access to files with access control lists (ACL)
- Manage file security using POSIX access control lists.
- Manage SELinux security
- Manage the Security Enhanced Linux (SELinux) behavior of a system to keep it secure in case of a network service compromise.
- Connect to network-defined users and groups
- Configure systems to use central identity management services.
- Add disks, partitions, and file systems to a Linux system
- Manage simple partitions and file systems.
- Manage logical volume management (LVM) storage
- Manage logical volumes from the command line.
- Access networked attached storage with network file system (NFS)
- Access (secure) NFS shares.
- Access networked storage with SMB
- Use autofs and the command line to mount and unmount SMB file Systems
- Control and troubleshoot the Red Hat Enterprise Linux boot process
- Limit network communication with firewall
- Configure a basic firewall

Chapter 03 – Linux Administration, Server and Shell Scripting

- Control services and daemons
- Review how to manage services and the boot-up process using systemctl
- Manage IPv6 networking
- Configure and troubleshoot basic IPv6 networking on Red Hat Enterprise Linux systems
- Configure link aggregation and bridging

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- Configure and troubleshoot advanced network interface functionality including bonding, teaming, and local software bridges
- Control network port security
- Permit and reject access to network services using advanced SELinux and firewalld filtering techniques
- Manage DNS for servers
- Set and verify correct DNS records for systems and configure secure DNS caching
- Configure email delivery
- Relay all email sent by the system to an SMTP gateway for central delivery
- Provide block-based storage
- Provide and use networked iSCSI block devices as remote disks
- Provide file-based storage
- Provide NFS exports and SMB file shares to specific systems and users
- Configure MariaDB databases
- Provide a MariaDB SQL database for use by programs and database administrators
- Provide Apache HTTPD web service
- Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts
- Write Bash scripts
- Write simple shell scripts using Bash
- Bash conditionals and control structures
- Use Bash conditionals and other control structures to write more sophisticated shell commands and scripts
- Configure the shell environment
- Customize Bash startup and use environment variables, Bash aliases, and Bash functions
- Linux containers preview
- Preview the capabilities of Linux containers, Docker, and other related technologies in Red Hat Enterprise Linux 7