Red Hat System Administration II

Length: 5 days
Format: Live Remote
Time: Day

About This Course

This course goes deeper into enterprise Linux administration including file systems and partitioning, logical volumes, SELinux, firewalling, and troubleshooting.

The topics covered include automating installation with Kickstart, intermediate and advanced level command line building blocks and tools, troubleshooting, network file sharing server configuration, connecting to a directory service, managing advanced security settings, maintenance tasks, and kernel tuning.

Required Exams

Audience Profile

Course Objectives

Outline

1. Automated installation with Kickstart
    * 1. Kickstart
    * 2. Anaconda: An Overview
    * 3. Anaconda: Booting the System
    * 4. Anaconda: Common Boot Options
    * 5. Anaconda: Loading Anaconda and Packages
    * 6. Anaconda: Storage Options
    * 7. Anaconda: Troubleshooting

Lab Tasks

* 8. Linux Installation
* 9. Automating Installation with Kickstart

2. Use regular expressions with grep * 1. Searching Inside Files
* 2. The Streaming Editor
* 3. Regular Expression Overview
* 4. Regular Expression Implementations
* 5. Regular Expressions
* 6. RE Character Classes
* 7. Regex Quantifiers
* 8. RE Parenthesis

Lab Tasks

* 9. Pattern Matching with Regular Expressions
* 10. Extended Regular Expressions
* 11. Using Regular Expressions With sed

3. Create and edit text files with Vim * 1. Text Editing
* 2. vi and Vim
* 3. Learning Vim
* 4. Basic vi
* 5. Intermediate vi

Lab Tasks

* 6. Text Editing with Vim

4. Schedule future Linux tasks * 1. Automating Tasks
* 2. at/batch
* 3. cron
* 4. The crontab Command
* 5. crontab Format
* 6. /etc/cron.*/ Directories
* 7. Anacron
* 8. Systemd Timers

Lab Tasks

* 9. Creating and Managing User Cron Jobs
* 10. Adding System cron Jobs

5. Manage priority of Linux processes * 1. Viewing Processes
* 2. Managing Processes
* 3. Tuning Process Scheduling

Lab Tasks

* 4. Process Management Basics

6. Control access to files with access control lists (ACL) * 1. File and Directory Permissions
* 2. File Access Control Lists
* 3. Manipulating FACLs
* 4. Viewing FACLs
* 5. Backing Up FACLs

Lab Tasks

* 6. Using Filesystem ACLs

7. Manage SELinux security * 1. SELinux Security Framework
* 2. SELinux Modes
* 3. SELinux Commands
* 4. Choosing an SELinux Policy
* 5. SELinux Booleans
* 6. Permissive Domains
* 7. SELinux Policy Tools
* 8. SELinux Troubleshooting
* 9. SELinux Troubleshooting Continued

Lab Tasks

* 10. Exploring SELinux Modes
* 11. SELinux File Contexts

8. Connect to network-defined users and groups * 1. RHEL DS Client Configuration
* 2. System Security Services Daemon (SSSD)

Lab Tasks

* 3. Using LDAP for Centralized User Accounts

9. Add disks, partitions, and file systems to a Linux system
    * 1. Partitioning Disks with fdisk & gdisk
    * 2. Resizing a GPT Partition with gdisk
    * 3. Partitioning Disks with parted
    * 4. Non-Interactive Disk Partitioning with sfdisk
    * 5. Filesystem Creation
    * 6. Filesystem Maintenance
    * 7. Managing an XFS Filesystem
    * 8. Swap

Lab Tasks

    * 9. Creating and Managing Filesystems
    * 10. Hot Adding Swap

10. Manage logical volume management (LVM) storage
    * 1. Logical Volume Management
    * 2. Implementing LVM
    * 3. Creating Logical Volumes
    * 4. Activating LVM VGs
    * 5. Exporting and Importing a VG
    * 6. Examining LVM Components
    * 7. Changing LVM Components
    * 8. Advanced LVM Overview
    * 9. Advanced LVM: Components & Object Tags
    * 10. Advanced LVM: Automated Storage Tiering
    * 11. Advanced LVM: Thin Provisioning
    * 12. Advanced LVM: Striping & Mirroring
    * 13. Advanced LVM: RAID Volumes

Lab Tasks

    * 14. Creating and Managing LVM Volumes

11. Access networked attached storage with network file system (NFS)
    * 1. File Sharing via NFS
    * 2. NFSv4+
    * 3. NFS Clients
    * 4. NFS
    * 5. NFS Server Configuration

Lab Tasks

    * 6. NFS Server Configuration

12. Access networked attached storage with SMB * 1. Accessing Windows/Samba Shares from Linux
* 2. AutoFS
* 3. AutoFS Configuration

Lab Tasks

* 4. Using autofs

13. Control and troubleshoot the Red Hat Enterprise Linux boot process * 1. System Boot Method Overview
* 2. systemd System and Service Manager
* 3. Modifying systemd services
* 4. Systemd Service Sandboxing Features
* 5. systemd Targets
* 6. Using systemd
* 7. Legacy Support for SysV init
* 8. Booting Linux on PCs
* 9. GRUB 2
* 10. GRUB 2 Configuration
* 11. The Boot Loader Specification
* 12. GRUB 2 Security
* 13. Boot Parameters
* 14. Initial RAM Filesystem
* 15. init
* 16. Linux Runlevels Aliases
* 17. Systemd local-fs.target and sysinit.target
* 18. Systemd basic.target and multi-user.target
* 19. Legacy local bootup script support
* 20. System Configuration Files
* 21. RHEL8 Configuration Utilities
* 22. Shutdown and Reboot

Lab Tasks

* 23. Boot Process
* 24. Booting directly to a bash shell
* 25. GRUB Command Line
* 26. Basic GRUB Security
* 27. Managing Services With Systemd's systemctl
* 28. Creating a systemd unit file
* 29. Troubleshooting Practice: Boot Process

14. Linux network communication with firewall * 1. Netfilter: Stateful Packet Filter Firewall
* 2. Netfilter Concepts
* 3. Using the iptables Command

* 4. Netfilter Rule Syntax
* 5. Targets
* 6. Common match_specs
* 7. Extended Packet Matching Modules
* 8. Connection Tracking
* 9. FirewallD

Lab Tasks

* 10. Securing Services with Netfilter
* 11. FirewallD

15. Container Technology Overview * 1. Container Fundamentals
* 2. Daemonless Containers
* 3. Podman
* 4. Podman Configuration
* 5. Podman Images
* 6. Podman Volumes
* 7. Podman Networking
* 8. Rootless Podman
* 9. Podman and Pods
* 10. Building Images with Buildah
* 11. Managing Images with Skopeo

Lab Tasks

* 12. Podman
* 13. Podman Networking
* 14. Podman and Pods
* 15. Podman Container at Boot

16. Comprehensive review * 1. System Administration II

Lab Tasks

* 2. Understand And Use Essential Tools
* 3. Operate Running Systems
* 4. Configure Local Storage and Filesystems
* 5. Users, Groups, and File Permissions
* 6. Maintenance and Recovery