

Red Hat RHCSA (Linux Server Admin)



Red Hat

SYLLABUS



Rooman Technologies Pvt Ltd
#30, 12th Main, 1st Stage Rajajinagar,
Bangalore – 560010

E-mail: info@rooman.net
Phone: 7022020000



Document Conventions	ix
Introduction	xi
Red Hat System Administration II	xi
Orientation to the Classroom Environment	xii
Controlling Your Systems	xiii
Internationalization	xiv
1. Improving Command-line Productivity	1
Writing Simple Bash Scripts	2
Guided Exercise: Writing Simple Bash Scripts	6
Running Commands More Efficiently Using Loops	9
Guided Exercise: Running Commands More Efficiently Using Loops	15
Matching Text in Command Output with Regular Expressions	18
Guided Exercise: Matching Text in Command Output with Regular Expressions	26
Lab: Improving Command-line Productivity	29
Summary	35
2. Scheduling Future Tasks	37
Scheduling a Deferred User Job	38
Guided Exercise: Scheduling a Deferred User Job	40
Scheduling Recurring User Jobs	44
Guided Exercise: Scheduling Recurring User Jobs	47
Scheduling Recurring System Jobs	50
Guided Exercise: Scheduling Recurring System Jobs	53
Managing Temporary Files	57
Guided Exercise: Managing Temporary Files	60
Quiz: Scheduling Future Tasks	63
Summary	67
3. Tuning System Performance	69
Adjusting Tuning Profiles	70
Guided Exercise: Adjusting Tuning Profiles	75
Influencing Process Scheduling	77
Guided Exercise: Influencing Process Scheduling	81
Lab: Tuning System Performance	85
Summary	89
4. Controlling Access to Files with ACLs	91
Interpreting File ACLs	92
Quiz: Interpreting File ACLs	99
Securing Files with ACLs	101
Guided Exercise: Securing Files with ACLs	105
Lab: Controlling Access to Files with ACLs	110
Summary	119
5. Managing SELinux Security	121
Changing the SELinux Enforcement Mode	122
Guided Exercise: Changing the SELinux Enforcement Mode	126
Controlling SELinux File Contexts	129
Guided Exercise: Controlling SELinux File Contexts	133
Adjusting SELinux Policy with Booleans	136
Guided Exercise: Adjusting SELinux Policy with Booleans	138
Investigating and Resolving SELinux Issues	141
Guided Exercise: Investigating and Resolving SELinux Issues	145
Lab: Managing SELinux Security	149
Summary	155



6. Managing Basic Storage	157
Adding Partitions, File Systems, and Persistent Mounts	158
Guided Exercise: Adding Partitions, File Systems, and Persistent Mounts	168
Managing Swap Space	172
Guided Exercise: Managing Swap Space	176
Lab: Managing Basic Storage	180
Summary	188
7. Managing Logical Volumes	189
Creating Logical Volumes	190
Guided Exercise: Creating Logical Volumes	197
Extending Logical Volumes	202
Guided Exercise: Extending Logical Volumes	207
Lab: Managing Logical Volumes	211
Summary	217
8. Implementing Advanced Storage Features	219
Managing Layered Storage with Stratis	220
Guided Exercise: Managing Layered Storage with Stratis	225
Compressing and Deduplicating Storage with VDO	231
Guided Exercise: Compressing and Deduplicating Storage with VDO	234
Lab: Implementing Advanced Storage Features	238
Summary	247
9. Accessing Network-Attached Storage	249
Mounting Network-Attached Storage with NFS	250
Guided Exercise: Managing Network-Attached Storage with NFS	255
Automounting Network-Attached Storage	259
Guided Exercise: Automounting Network-Attached Storage	262
Lab: Accessing Network-Attached Storage	268
Summary	275
10. Controlling the Boot Process	277
Selecting the Boot Target	278
Guided Exercise: Selecting the Boot Target	283
Resetting the Root Password	286
Guided Exercise: Resetting the Root Password	290
Repairing File System Issues at Boot	292
Guided Exercise: Repairing File System Issues at Boot	294
Lab: Controlling the Boot Process	297
Summary	303
11. Managing Network Security	305
Managing Server Firewalls	306
Guided Exercise: Managing Server Firewalls	314
Controlling SELinux Port Labeling	318
Guided Exercise: Controlling SELinux Port Labeling	321
Lab: Managing Network Security	325
Summary	333
12. Installing Red Hat Enterprise Linux	335
Installing Red Hat Enterprise Linux	336
Guided Exercise: Installing Red Hat Enterprise Linux	340
Automating Installation with Kickstart	343
Guided Exercise: Automating Installation with Kickstart	351
Installing and Configuring Virtual Machines	354
Quiz: Installing and Configuring Virtual Machines	359
Lab: Installing Red Hat Enterprise Linux	361



Summary	367
13. Comprehensive Review	369
Comprehensive Review	370
Lab: Fixing Boot Issues and Maintaining Servers	373
Lab: Configuring and Managing File Systems and Storage	380
Lab: Configuring and Managing Server Security	387

RH134

Red Hat System Administration II

Document Conventions

Introduction

1. Improving Command-line Productivity

Writing Simple Bash Scripts

Guided Exercise: Writing Simple Bash Scripts

Running Commands More Efficiently Using Loops

Guided Exercise: Running Commands More Efficiently Using Loops

Matching Text in Command Output with Regular Expressions

Guided Exercise: Matching Text in Command Output with Regular Expressions

Lab: Improving Command-line Productivity

Summary

2. Scheduling Future Tasks

Scheduling a Deferred User Job

Guided Exercise: Scheduling a Deferred User Job

Scheduling Recurring User Jobs

Guided Exercise: Scheduling Recurring User Jobs

Scheduling Recurring System Jobs

Guided Exercise: Scheduling Recurring System Jobs

Managing Temporary Files

Guided Exercise: Managing Temporary Files

Quiz: Scheduling Future Tasks

Summary

3. Tuning System Performance

Adjusting Tuning Profiles

Guided Exercise: Adjusting Tuning Profiles

Influencing Process Scheduling

Guided Exercise: Influencing Process Scheduling

Lab: Tuning System Performance

Summary

4. Controlling Access to Files with ACLs

Interpreting File ACLs

Quiz: Interpreting File ACLs

Securing Files with ACLs

Guided Exercise: Securing Files with ACLs

Lab: Controlling Access to Files with ACLs

Summary

5. Managing SELinux Security

Changing the SELinux Enforcement Mode

Guided Exercise: Changing the SELinux Enforcement Mode

Controlling SELinux File Contexts

Guided Exercise: Controlling SELinux File Contexts

Adjusting SELinux Policy with Booleans

Guided Exercise: Adjusting SELinux Policy with Booleans

Investigating and Resolving SELinux Issues

Guided Exercise: Investigating and Resolving SELinux Issues

Lab: Managing SELinux Security

Summary

6. Managing Basic Storage

Adding Partitions, File Systems, and Persistent Mounts

Guided Exercise: Adding Partitions, File Systems, and Persistent Mounts

Managing Swap Space

Guided Exercise: Managing Swap Space

Lab: Managing Basic Storage

Summary

7. Managing Logical Volumes

Creating Logical Volumes

Guided Exercise: Creating Logical Volumes

Extending Logical Volumes

Guided Exercise: Extending Logical Volumes

Lab: Managing Logical Volumes

Summary

8. Implementing Advanced Storage Features

Managing Layered Storage with Stratis

Guided Exercise: Managing Layered Storage with Stratis

Compressing and Deduplicating Storage with VDO

Guided Exercise: Compressing and Deduplicating Storage with VDO

Lab: Implementing Advanced Storage Features

Summary

9. Accessing Network-Attached Storage

Mounting Network-Attached Storage with NFS

Guided Exercise: Managing Network-Attached Storage with NFS

Automounting Network-Attached Storage

Guided Exercise: Automounting Network-Attached Storage

Lab: Accessing Network-Attached Storage

Summary

10. Controlling the Boot Process

Selecting the Boot Target

Guided Exercise: Selecting the Boot Target

Resetting the Root Password

Guided Exercise: Resetting the Root Password

Repairing File System Issues at Boot

Guided Exercise: Repairing File System Issues at Boot

Lab: Controlling the Boot Process

Summary

11. Managing Network Security

Managing Server Firewalls

Guided Exercise: Managing Server Firewalls

Controlling SELinux Port Labeling

Guided Exercise: Controlling SELinux Port Labeling

Lab: Managing Network Security

Summary

12. Installing Red Hat Enterprise Linux

Installing Red Hat Enterprise Linux

Guided Exercise: Installing Red Hat Enterprise Linux

Automating Installation with Kickstart

Guided Exercise: Automating Installation with Kickstart

Installing and Configuring Virtual Machines

Quiz: Installing and Configuring Virtual Machines

Lab: Installing Red Hat Enterprise Linux

Summary

13. Running Containers

Introducing Containers

Quiz: Introducing Containers

Running a Basic Container

Guided Exercise: Running a Basic Container

Finding and Managing Container Images

Guided Exercise: Finding and Managing Container Images

Performing Advanced Container Management

Guided Exercise: Performing Advanced Container Management

Attaching Persistent Storage to a Container

Guided Exercise: Attaching Persistent Storage to a Container

Managing Containers as Services

Guided Exercise: Managing Containers as Services

Lab: Running Containers

Summary

14. Comprehensive Review

Comprehensive Review

Lab: Fixing Boot Issues and Maintaining Servers

Lab: Configuring and Managing File Systems and Storage

Lab: Configuring and Managing Server Security

Lab: Running Containers