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Red Hat System Administration II – Solution, Skill Labs

Course Specifications

Course Number: ACI76-059SL_rev1.0
Lab Length: Approximately 17 hours

Red Hat 134 - Guided Exercise Sandbox

Introduction
Overview

This sandbox environment has the needed Virtual Machine to perform the Guided Exercises for the Red Hat System Administration II. You will find the Guided Exercises and step by step directions in the e-book for the course.

Red Hat Solution - Ch 01 - Improving Command-line Productivity

Introduction
Objective

In this lab, you will create a Bash script that can filter and get relevant information from different hosts.

Overview

You should be able to:

- Create a Bash script and redirect its output to a file.
- Use loops to simplify your code.
- Filter the relevant content using grep and regular expressions.

Red Hat Solution - Ch 03 - Tuning System Performance

Introduction
Objective

In this lab, you will apply a specific tuning profile and adjust the scheduling priority of an existing process with high CPU usage.

Overview

You should be able to:

- Activate a specific tuning profile for a computer system.
- Adjust the CPU scheduling priority of a process.

Red Hat Solution - Ch 04 - Controlling Access to Files with ACLs

Introduction
Objective

In this lab, you will set up a collaborative directory for users in two groups, combining the set-GID permission and default ACL entries to provide correct access permissions.

Overview

You should be able to:

- Configure set-GID permission on a folder, to inherit group ownership on files and folders inside.
- Configure ACL entries to allow or deny read/write/execute permissions to users and groups on files and directories.
- Configure default ACL to get the right ACL and file permissions automatically, on new files and directories.

Red Hat Solution - Ch 05 - Managing SELinux Security

Introduction
Objective

In this lab, you will solve an SELinux access denial problem. System administrators are having trouble getting a new web server to deliver content to clients when SELinux is in enforcing mode.

Overview

You should be able to:

- Identify issues in system log files.
- Adjust the SELinux configuration.

Red Hat Solution - Ch 06 - Managing Basic Storage

Introduction
Objective

In this lab, you will create several partitions on a new disk, formatting some with file systems and mounting them, and activating others as swap spaces.

Overview

You should be able to:

- Display and create partitions using the parted command.
- Create new file systems on partitions and persistently mount them.
- Create swap spaces and activate them at boot.

Red Hat Solution - Ch 07 - Managing Logical Volumes

Introduction
Objective

In this lab, you will resize an existing logical volume, add LVM resources as necessary, and then add a new logical volume with a persistently mounted XFS file system on it.

Overview

You should be able to:

- Resize the serverb_01_lv logical volume to 768 MiB.
- Create a new 128 MiB logical volume called serverb_02_lv with an XFS file system, persistently mounted at /storage/data2.

Red Hat Solution - Ch 08 - Implementing Advanced Storage Features

Introduction
Objective

In this exercise, you will use the Stratis storage management solution to create file systems that grow to accommodate increased data demands, and Virtual Data Optimizer to create volumes for efficient utilization of storage space.

Overview

You should be able to:

- Create a thinly provisioned file system using Stratis storage management solution.
- Verify that the Stratis volumes grow dynamically to support real-time data growth.
- Access data from the snapshot of a thinly provisioned file system.
- Create a volume using Virtual Data Optimizer and mount it on a file system.
- Investigate the impact of data deduplication and compression on a Virtual Data Optimizer volume.

Red Hat Solution - Ch 09 - Accessing Network-Attached Storage

Introduction
Objective

In this lab, you will set up the automounter with an indirect map, using shares from an NFSv4 server.

Overview

You should be able to:

- Install required packages needed to set up the automounter.
- Configure an automounter indirect map, getting resources from a preconfigured NFSv4 server.

Red Hat Solution - Ch 10 - Controlling the Boot Process

Introduction
Objective

In this lab, you will reset the root password on a system, recover from a misconfiguration, and set the default boot target.

Overview

You should be able to:

- Reset a lost root password.
- Diagnose and fix boot issues.
- Set the default systemd target.

Red Hat Solution - Ch 11 - Managing Network Security

Introduction
Objective

In this lab, you will configure firewall and SELinux settings to allow access to multiple web servers running on serverb.

Overview

You should be able to configure firewall and SELinux settings on a web server host.

Red Hat Solution - Ch 12 - Installing Red Hat Enterprise Linux

Introduction
Objective

In this lab, you will create a kickstart file and perform a kickstart installation on serverb.

Overview

You should be able to:

- Create a kickstart file.
- Make the kickstart file available to the installer.
- Perform a kickstart installation.

Red Hat Solution - Ch 13 - Running Containers

Introduction
Objective

In this lab, you will configure a container on your server that provides a MariaDB database service, stores its database on persistent storage, and starts automatically with the server.

You should be able to:

- Create detached containers.
- Configure port redirection and persistent storage.
- Configure systemd for containers to start when the host machine starts.

Red Hat Solution - Ch 13 - Running Containers – 2

Introduction
Objective

In this review, you will configure a container on your server that provides web content from persistent storage and starts automatically with the server.

You should be able to:

- Create rootless detached containers.
- Configure port redirection and persistent storage.
- Configure systemd for containers to start when the host machine starts.

Red Hat Solution - Fixing Boot Issues and Maintaining Servers

Introduction
Objective

In this review, you will troubleshoot and repair boot problems and update the system default target. You will also schedule tasks to run on a repeating schedule as a normal user.

Overview

You should be able to:

- Diagnose issues and recover the system from emergency mode.
- Change the default target from graphical.target to multi-user.target.
- Schedule recurring jobs to run as a normal user.

Red Hat Solution - Configuring and Managing File Systems and Storage

Introduction
Objective

In this review, you will create an LVM logical volume, mount a network file system, create a swap partition that is automatically activated at boot, configure temporary unused files to be cleaned from the system, and use ACLs to protect a directory.

Overview

You should be able to:

- Create an LVM logical volume.
- Mount a network file system.
- Create a swap partition that is automatically activated at boot.
- Configure temporary unused files to be cleaned from the system.
- Use ACLs to protect a directory.

Red Hat Solution - Configuring and Managing Server Security

Introduction
Objective

In this review, you will configure SSH key-based authentication, change firewall settings, adjust the SELinux mode and an SELinux Boolean, and troubleshoot SELinux issues.

Overview

You should be able to:

- Configure SSH keys for key-based authentication.
- Configure firewall settings.
- Adjust the SELinux mode and SELinux Booleans.
- Troubleshoot SELinux issues.