CSE308:COMPUTING PRACTICUM-IV

L:0 T:0 P:3 Credits:2

Course Outcomes: Through this course students should be able to

CO1 :: understand Bash scripts to schedule types of tasks

CO2 :: apply ACLs on files and enhance system security using SELinux

CO3 :: analyze the process priority and tune system performance

CO4 :: contrast various methods to manage partitions, file systems, swap spaces from the command line

CO5 :: demonstrate compressing and deduplicating the storage and determine network -attached storage using the NFS protocol

CO6 :: analyze the boot process to control services offered and to troubleshoot and repair problems

List of Practicals / Experiments:

Improving Command-line productivity

- Writing Simple Bash Scripts
- Running commands More Efficiently Using Loops
- Matching Text in Command Output with Regular Expressions

Scheduling Future Tasks

- Scheduling a Deferred User Job
- Scheduling Recurring User Jobs
- Scheduling Recurring System Jobs
- Managing Temporary Files

Tuning System Performance

- Adjusting Tuning Profiles
- Influencing Process Scheduling

Controlling Access to Files with ACLs

- Interpreting File ACLs
- Securing Files with ACLs

Managing SELinux Security

- Changing the SELinux Enforcement Mode
- Controlling SELinux File Contexts
- Adjusting SELinux Policy with Booleans
- Investing and Resolving SELinux Issues

Managing Basic Storage and Logical Volumes

- Adding Partitions, File Systems, and Persistent Mounts
- Managing Swap Space
- Creating Logical Volumes
- Extended Logical Volumes

Implementing Advanced Storage Features

- Managing Layered Storage with Stratis

- Compressing and Deduplicating Storage with VDO

Accessing Network-Attached Storage

- Mounting Network-Attached Storage with NFS
- Automounting Network-Attached Storage

Controlling the Boot Process

- Selecting the Boot Target
- Resetting the Root Password
- Repairing File System Issues at Boot

Managing Network Security

- Managing Server Firewalls
- Controlling SeLinux Port Labeling

Installing Red Hat Enterprise Linux

- Installing RedHat EnterpriseLinux
- Automating Installation with Kickstart
- Installing and Configuring Virtual Machines

Manage Containers

- Find and retrieve container images from remote registry.
- Inspect container images.
- Perform container management using commands such as podman and skopeo.
- Perform basic container management such as running, starting, stopping and listing running containers.
- Run a service inside a container.
- Configure a container to start automatically as a systemd service.
- Attach persistent storage to a container.

Text Books:

1. RED HAT RHCSA/RHCE 7 CERT GUIDE: RED HAT ENTERPRISE LINUX 7 (EX200 AND EX300) by SANDER VAN VUGT, PEARSON

References:

1. RHCSA/RHCE RED HAT LINUX CERTIFICATION STUDY GUIDE EXAMS EX200 & EX30 by ORSARIA JANG, Tata McGraw Hill, India