INTERNSHIP-RHCE

Objective:

The primary objective of this internship task is to focus on practical,hands-on system administration tasks related to **RHEL-based** systems,emphasizing automation, security, networking, and service management.

The goal is to equip the intern with practical knowledge in setting up a Linux environment with essential packages,automate daily tasks and perform system health checks and security hardening.

Task 1

Setting up the Linux Environment

- ❖ You are assigned to set up a **virtual machine (VM)**. Your task is to install an **Alma Linux** VM(**server with GUI**) with **2 vCPUs**,**1GB RAM** and a **20GB virtual disk**.

  Requirements:

- The network should be configured to use the **Bridge** network.
- **Packages needed:**

  vim/nano,**wget**,**curl**,**git**,**net-tools**,**bash-completion**,**htop**,**epel-release**

- Enable and Start required services:

  sshd,**firewalld**,**NetworkManager**

Task 2

Configuring a Static IP using nmcli or nmtui

❖ Your network administrator has assigned you a **static IP** for your Red Hat-based VM.You must configure the system's network settings as follows:

- **IP Address: 192.168.18.120/24**
- **Gateway: 192.168.18.1**
- **DNS Server: 8.8.8.8, 8.8.4.4**

❖ Ensure that the given connection is **up**(active) and also list the possible connections using any of the 2 methods.

❖ Set up Time Synchronization using **Chrony/NTP**.

❖ Install **MySQL/MariaDB**.

Task 3

Restricting SSH Access to a Specific Host IP

❖ Set up a firewall rule to allow incoming ssh connections only from the host ip address.

Task 4

Access Control in a Multi-User Environment

You are a system administrator for a company where multiple teams work on a shared **AlmaLinux** machine.The IT department has given you the following tasks to set up user management and access control properly.

❖ **Create the required user accounts:**

- **john_doe** (UID: **2021**, Primary Group: **developers**)
- **alice_smith** (UID: **2022**, Primary Group: **testers**)
- **bob_jones** (UID: **2023**, Primary Group: **developers**)

❖ **Grant sudo Access to john_doe.**

❖ **Set password expiration policies for all users:**

- Passwords should expire every **60 days.**
- Users should receive a **7-day warning** before expiration.

❖ **Create a shared directory /team_projects:**

- owned by the **developers** group.
- Allows only group members to create,modify and delete files.
- Enforces group ownership on newly created files (files belong to **developers** by default).

❖ **Restrict user access:**

- **alice_smith** should be denied SSH access to the system.

Task 5

Hosting Multiple Websites

❖ You have been hired as a **Linux System Administrator** for a startup that wants to host multiple websites on a single **AlmaLinux** server. The company has purchased two domains:

- **site1.example.com** – A corporate website
- **site2.example.com** – A blog platform

You need to configure **Nginx ServerBlock** or **Apache VirtualHosts** to serve both websites separately while ensuring security and performance optimization.

Task 6

Secure File Transfer via SCP and SFTP

❖ You are working as a **Linux System Administrator** for a company that manages multiple servers. Your manager has assigned you a task to securely transfer files from your **local machine** to a **remote server** running AlmaLinux. The files contain sensitive configuration data so security and integrity are a priority.

- Transferring a single file from your local system (**/home/user/config.yaml**) to the remote server (**/etc/app/config.yaml**) using **SCP**.

- Copying an entire directory (**/home/user/backup/**) to the remote server (**/var/backups/**) using **SCP** while preserving file permissions.

- Using **SFTP** to upload multiple files (**log1.txt**, **log2.txt**) to **/var/logs/** on the remote server.