Week 4 Homework Submission File: Linux Systems Administration

Please edit this file by adding the solution commands on the line below the prompt.

Save and submit the completed file for your homework submission.

Step 1: Ensure/Double Check Permissions on Sensitive Files

1. Permissions on `/etc/shadow` should allow only `root` read and write access.

    - Command to inspect permissions:
    ls -l /etc/shadow

    - Command to set permissions (if needed):
    sudo chmod 600 /etc/shadow

2. Permissions on `/etc/gshadow` should allow only `root` read and write access.

    - Command to inspect permissions:
    ls- l /etc/gshadow

    - Command to set permissions (if needed):
    sudo chmod 600 /etc/gshadow

3. Permissions on `/etc/group` should allow `root` read and write access, and allow everyone else read access only.

    - Command to inspect permissions:
    ls -l /etc/group

    - Command to set permissions (if needed):
    sudo chmod 644 /etc/group

4. Permissions on `/etc/passwd` should allow `root` read and write access, and allow everyone else read access only.

- Command to inspect permissions:

```
ls -l /etc/passwd
```

- Command to set permissions (if needed):

```
sudo chmod 644 /etc/passwd
```

Step 2: Create User Accounts

1. Add user accounts for `sam`, `joe`, `amy`, `sara`, and `admin`.

   - Command to add each user account (include all five users):

```
sudo adduser sam
sudo adduser joe
sudo adduser amy
sudo adduser sara
sudo adduser admin
```

2. Ensure that only the `admin` has general sudo access.

   - Command to add `admin` to the `sudo` group:

```
sudo usermod -aG sudo admin
```

Step 3: Create User Group and Collaborative Folder

1. Add an `engineers` group to the system.

   - Command to add group:

```
sudo addgrp engineers
```

2. Add users `sam`, `joe`, `amy`, and `sara` to the managed group.

   - Command to add users to `engineers` group (include all four users):

```
sudo usermod -aG engineers sam
sudo usermod -aG engineers joe
sudo usermod -aG engineers amy
sudo usermod -aG engineers sara
```

3. Create a shared folder for this group at `/home/engineers`.

   - Command to create the shared folder:
   sudo mkdir /home/engineers

4. Change ownership on the new engineers' shared folder to the `engineers` group.

   - Command to change ownership of engineer's shared folder to engineer group:
   sudo chgrp -R engineers /home/engineers

Step 4: Lynis Auditing

1. Command to install Lynis:
   sudo apt install lynis -y

2. Command to see documentation and instructions:
   man lynis

3. Command to run an audit:
   sudo lynis audit system

4. Provide a report from the Lynis output on what can be done to harden the system.

   - Screenshot of report output:
[](https://docs.google.com/document/d/1lPB2Gy2romyivEbrH8WfsnFRewLj3MxNv3joAbx8QGE/edit?usp=sharing)

Bonus
1. Command to install chkrootkit:
   sudo apt install chkrootkit -y
2. Command to see documentation and instructions:
   man chkrootkit
3. Command to run expert mode:
   sudo chkrootkit -x

4. Provide a report from the chrootkit output on what can be done to harden the system.

    - Screenshot of end of sample output:

[](https://docs.google.com/document/d/1Ypu4zE1oEzi8dGfOasTjkcLcU2sfn5HlJQTAlQe8Igs/edit?usp=sharing)