**WEEK 4 HOMEWORK SUBMISSION FILE:**

**Linux Systems Admisistration**

**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*

1. 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*

1. 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*

1. 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*

1. 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 addgroup engineers*

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

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

*sudo addgroup sam engineers or sudo usermod -aG engineers sam*

*sudo addgroup joe engineers sudo usermod -aG engineers joe*

*sudo addgroup amy engineers sudo usermod -aG engineers amy*

*sudo addgroup sara engineers sudo usermod -aG engineers sara*

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

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

1. 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 chown :engineers /home/engineers*

### Step 4: Lynis Auditing

1. Command to install Lynis: *sudo apt-get install lynis*
2. Command to see documentation and instructions: *man lynis or sudo lynis -h*
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:

SEE SEPARATE ATTACHMENTS: PAGE 1, 2, 3 LYNIS REPORT SCRRENSHOTS

### Bonus

1. Command to install chkrootkit: *sudo apt install chkrootkit*
2. Command to see documentation and instructions: *man chkrootkit Or chkrootkit -h*
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:

SEE SEPARATE ATTACHMENT: CHKROOTKIT REPORT SCREENSHOT