## Week 4 Homework Submission File: Linux Systems Administration

**### 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): **chmod [nnn] / not needed**

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): **chmod [nnn] / not needed**

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): **chmod [nnn] / not needed**

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): **chmod [nnn] / not needed**

**### 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 addgroup 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:   
 **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 chown admin /engineers**

**### Step 4: Lynis Auditing**

1. Command to install Lynis:  
 **sudo wget https://downloads.cisofy.com/lynis/lynis-2.7.3.tar.gz**

2. Command to see documentation and instructions:  
 **man [whatever command you want]**

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:  
Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

**### Bonus**

1. Command to install chkrootkit:

**# ./chkrootkit**

2. Command to see documentation and instructions:  
 **man [whatever command you want]**

3. Command to run expert mode:  
 **expert**

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

- Screenshot of end of sample output:

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