## 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 -al shadow

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

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

- Command to inspect permissions:ls -al

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

- Command to set permissions (if needed):sudo chmod 644 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 -la passwd

sudo chmod 644 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 useradd sam; sudo useradd joe; sudo user amy; sudo user sara; sudo user 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. sudo groupadd engineers

- Command to add group:

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

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

- Command to create the shared folder:

- sudo addgroup homeengineers

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4. Change ownership on the new engineers' shared folder to the `engineers` group. sudo chgrp engineers /home/engineers

- Command to change ownership of engineer's shared folder to engineer group:

### Step 4: Lynis Auditing

1. Command to install Lynis: apt-get install lynis

2. Command to see documentation and instructions: cat var/log/lynis.log to get documntation for lynis

3. Command to run an audit: 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/1W\_m9IW8CzJ2a\_qO-\_8arth8YnaYiN6bL1DVKHLa4gWQ/edit?usp=sharing

- Screenshot of report output:

### Bonus

1. Command to install chkrootkit:

apt install chkrootkit -y

2. Command to see documentation and instructions:

3. Command to run expert mode: chrootkit -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/1W\_m9IW8CzJ2a\_qO-\_8arth8YnaYiN6bL1DVKHLa4gWQ/edit?usp=sharing