## **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  
-rw------- 1 root shadow 2888 May 14, 2021, shadow

Command to set permissions (if needed):  
sudo chown root:root /etc/shadow

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

Command to inspect permissions: ls -l /etc/gshadow  
-rw------- 1 root shadow 1099 Apr 2 12:13 gshadow

Command to set permissions (if needed):  
sudo chown root:root /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  
-rw-r--r-- 1 root root 1330 Apr 2 12:13 group

Command to set permissions (if needed):  
sudo chown root:root /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  
-rw-r--r-- 1 root root 3214 May 14 2021 passwd

Command to set permissions (if needed):  
sudo chown root:root /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):

* 1. sudo adduser sam
  2. sudo adduser joe
  3. sudo adduser amy
  4. sudo adduser sara
  5. sudo adduser admin

1. Ensure that only the admin has general sudo access.

Command to add admin to the sudo group:

sudo usermod -a -G 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 usermod -a -G engineers sam

sudo usermod -a -G engineers joe

sudo usermod -a -G engineers amy

sudo usermod -a -G engineers sara

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

Command to create the shared folder:

mkdir /home/engineers

1. Change ownership of the new engineers' shared folder to the engineers group.

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

sudo chown :engineers engineers

**Step 4: Lynis Auditing**

1. Command to install Lynis:  
   apt install lynis
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.

### **Bonus**

1. Command to install chkrootkit:  
   apt-get install chkrootkit -y
2. Command to see documentation and instructions:  
   chkrootkit
3. Command to run expert mode:  
   Chkrootkit - x
4. Provide a report from the chkrootkit output on what can be done to harden the system.  
   * Screenshot of end of sample output: [chkrootkit.png](https://drive.google.com/file/d/1EIDmwEnNNOmCmY07KQjK-HrZgPnSBI0W/view?usp=sharing)