## **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 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 -l gshadow
   * 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 -l group
   * 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 -l passwd
   * Command to set permissions (if needed): sudo chmod 644 group

### **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 groupadd 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 adduser sam engineers or sudo usermod -G engineers sam
   * Sudo adduser joe engineers or sudo usermod -G engineers joe
   * Sudo adduser amy engineers or sudo usermod -G engineers amy
   * Sudo adduser sara engineers or sudo usermod -G engineers sara
3. Create a shared folder for this group at /home/engineers.cd
   * 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 chown :engineers engineers

### **Step 4: Lynis Auditincdg**

1. Command to install Lynis: sudo 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.  
   * Screenshot of report output:

Text

Description automatically generated with medium confidence

### **Bonus**

1. Command to install chkrootkit:
2. Command to see documentation and instructions:
3. Command to run expert mode:
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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