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

2. Permissions on /etc/gshadow 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/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 /etc/group

    - Command to set permissions (if needed):

      sudo chmod 604 /etc/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 /etc/passwd

    - Command to set permissions (if needed):

      sudo chmod 604 /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 useradd sam
      sudo useradd joe
      sudo useradd amy
      sudo useradd sara
      sudo useradd admin

      **** OR***

      sudo adduser --system sam
      sudo adduser --system joe
      sudo adduser --system amy
      sudo adduser --system sara
      sudo adduser --system 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:

      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 /home/engineers

Step 4: Lynis Auditing

1. Command to install Lynis:

   Sudo apt install Lynis

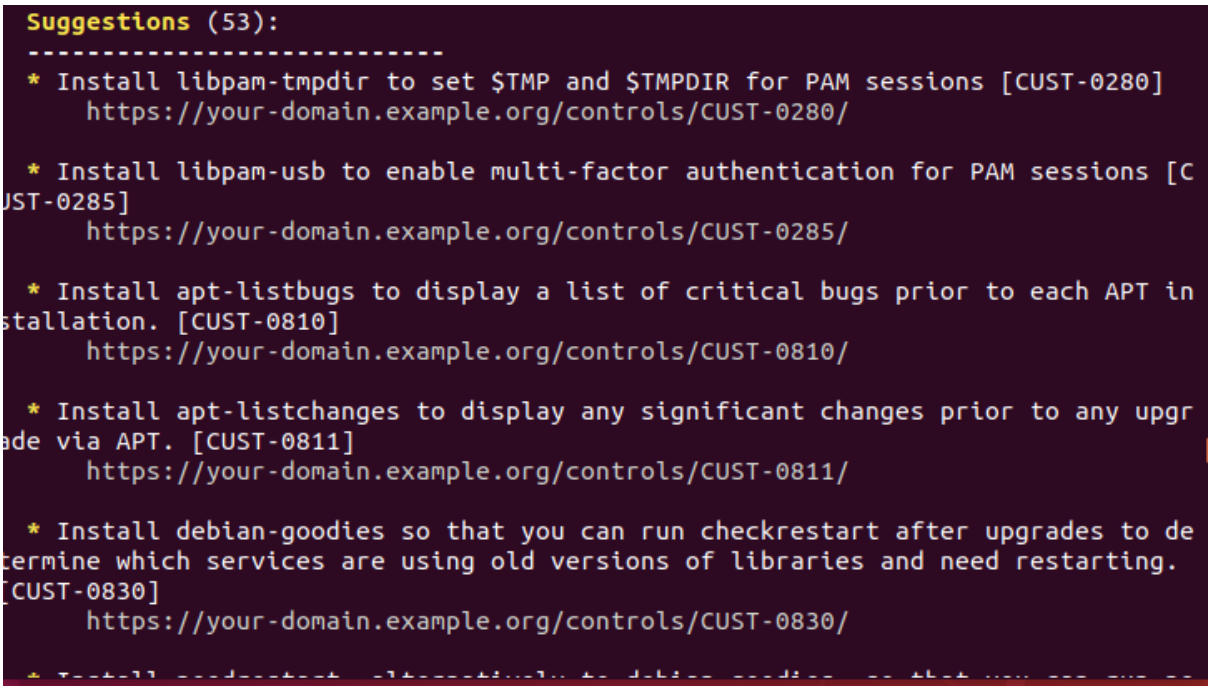
2. Command to see documentation and instructions:

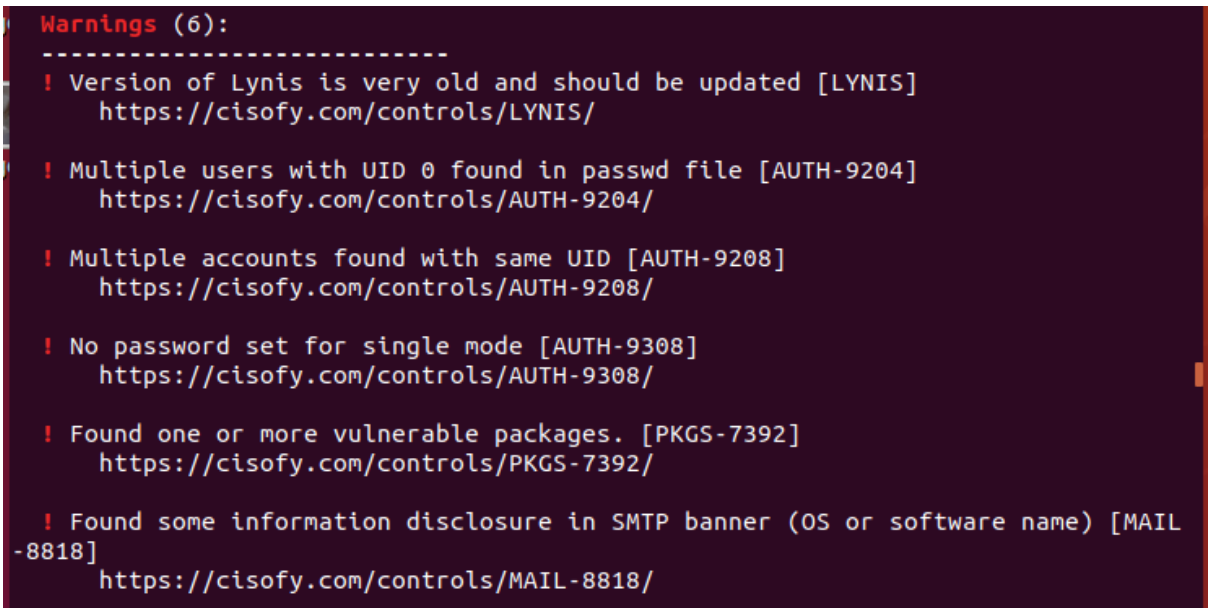
   man lynis

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. There are 6 warnings and 53 suggestions given to help ameliorate hardening the system. Please find below screenshots of (some) of these findings (report output)





Bonus

1. Command to install chkrootkit:

   sudo apt install chkrootkit

2. Command to see documentation and instructions:

   man chkrootkit

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.

   sudo chkroot

   - Screenshot of end of sample output: