**Week 4 Homework Submission File: Linux Systems Administration**

**By Steven Pigatto**

**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*
  + Command to set permissions (if needed):

1. Permissions on /etc/gshadow should allow only root read and write access.
   * Command to inspect permissions:

* *ls -l*
  + Command to set permissions (if needed):

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*
  + Command to set permissions (if needed):

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*
  + Command to set permissions (if 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

1. 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

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 -aG engineers sam
* sudo usermod -aG engineers joe
* sudo usermod -aG engineers amy
* sudo usermod -aG engineers sara

1. Create a shared folder for this group at /home/engineers.
   * Command to create the shared folder:

* mkdir engineers

1. 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 sysadmin:engineers engineers

**Step 4: Lynis Auditing**

1. Command to install Lynis:

* sudo apt install lynis

1. Command to see documentation and instructions:

* man lynis

1. Command to run an audit:

* sudo lynis audit system

1. Provide a report from the Lynis output on what can be done to harden the system.
   * Screenshot of report output:

Text

Description automatically generated

**Bonus**

1. Command to install chkrootkit:

* sudo apt install chkrootkit

1. Command to see documentation and instructions:

* man chkrootkit

1. Command to run expert mode:

* chkrootkit -x

1. 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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