### 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 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): (from the history log)

183 sudo adduser sam

184 cd /home

185 l

186 ls

187 sudo adduser joe

188 sudo adduser amy

189 sudo adduser sara

190 sudo adduser admin

191 history

2. Ensure that only the `admin` has general sudo access.

sysadmin@UbuntuDesktop:/home$ sudo -lU sam

User sam is not allowed to run sudo on UbuntuDesktop.

sysadmin@UbuntuDesktop:/home$ sudo -lU joe

User joe is not allowed to run sudo on UbuntuDesktop.

sysadmin@UbuntuDesktop:/home$ sudo -lU amy

User amy is not allowed to run sudo on UbuntuDesktop.

sysadmin@UbuntuDesktop:/home$ sudo -lU sara

User sara is not allowed to run sudo on UbuntuDesktop.

- Command to add `admin` to the `sudo` group:

sysadmin@UbuntuDesktop:/home$ sudo usermod -aG sudo admin

sysadmin@UbuntuDesktop:/home$ sudo -lU admin

Matching Defaults entries for admin on UbuntuDesktop:

env\_reset, mail\_badpass,

secure\_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin

User admin may run the following commands on UbuntuDesktop:

(ALL) ALL

(ALL : ALL) ALL

### 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):

sysadmin@UbuntuDesktop:/home$ sudo usermod -aG engineers sam

sysadmin@UbuntuDesktop:/home$ sudo usermod -aG engineers joe

sysadmin@UbuntuDesktop:/home$ sudo usermod -aG engineers amy

sysadmin@UbuntuDesktop:/home$ sudo usermod -aG engineers sara

sysadmin@UbuntuDesktop:/home$ groups joe

joe : joe engineers

sysadmin@UbuntuDesktop:/home$ groups amy

amy : amy engineers

sysadmin@UbuntuDesktop:/home$ groups sara

sara : sara engineers

sysadmin@UbuntuDesktop:/home$ groups sam

sam : sam engineers

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

- Command to create the shared folder:

sysadmin@UbuntuDesktop:/home$ sudo mkdir engineers

sysadmin@UbuntuDesktop:/home$ ls

adam amy engineers instructor jane john sally sara sysadmin vagrant

admin billy http jack joe max sam student user.hashes

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

ls -l

(excerpt)

drwxr-xr-x 2 root engineers 4096 Jul 22 11:08 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