Cybersecurity

Module 4 Challenge Submission File

Linux Systems Administration

Make a copy of this document to work in, and then for each step, add the solution commands below the prompt. Save and submit this completed file as your Challenge deliverable.

Step 1: Ensure/Double Check Permissions on Sensitive Files

1. Permissions on `/etc/shadow` should allow only `root` read and write access.
    a. Command to inspect permissions:

```
ls -l /etc/shadow
```

    b. Command to set permissions (if needed):

```
sudo chown root:root /etc/gshadow
```

2. Permissions on `/etc/gshadow` should allow only `root` read and write access.
    a. Command to inspect permissions:

```
ls -l /etc/gshadow
```

    b. Command to set permissions (if needed):

```
sudo chown root:root /etc/gshadow
```

3. Permissions on `/etc/group` should allow `root` read and write access, and allow everyone else read access only.

    a. Command to inspect permissions:

```
ls -l /etc/group
```

    b. Command to set permissions (if needed):

```
sudo chown root:root /etc/group
```

4. Permissions on `/etc/passwd` should allow `root` read and write access, and allow everyone else read access only.

    a. Command to inspect permissions:

```
ls -l /etc/passwd
```

    b. 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` with the `useradd` command.

    a. 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
```

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

    a. Command to add `admin` to the sudo group:

```
sudo adduser admin sudo
```

Step 3: Create User Group and Collaborative Folder

1. Add an `engineers` group to the system.
    a. Command to add group:

```
sudo addgroup engineers
```

2. Add users `sam`, `joe`, `amy`, and `sara` to the managed group.
    a. 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
```

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

```
sudo mkdir /home/engineers
```

4. Change ownership on the new engineers' shared folder to the `engineers` group.
    a. Command to change ownership of engineers' shared folder to `engineers` group:

```
sudo chown engineers /home/engineers
```

Step 4: Lynis Auditing

1. Command to install Lynis:

```
apt install Lynis
```

2. Command to view documentation and instructions:

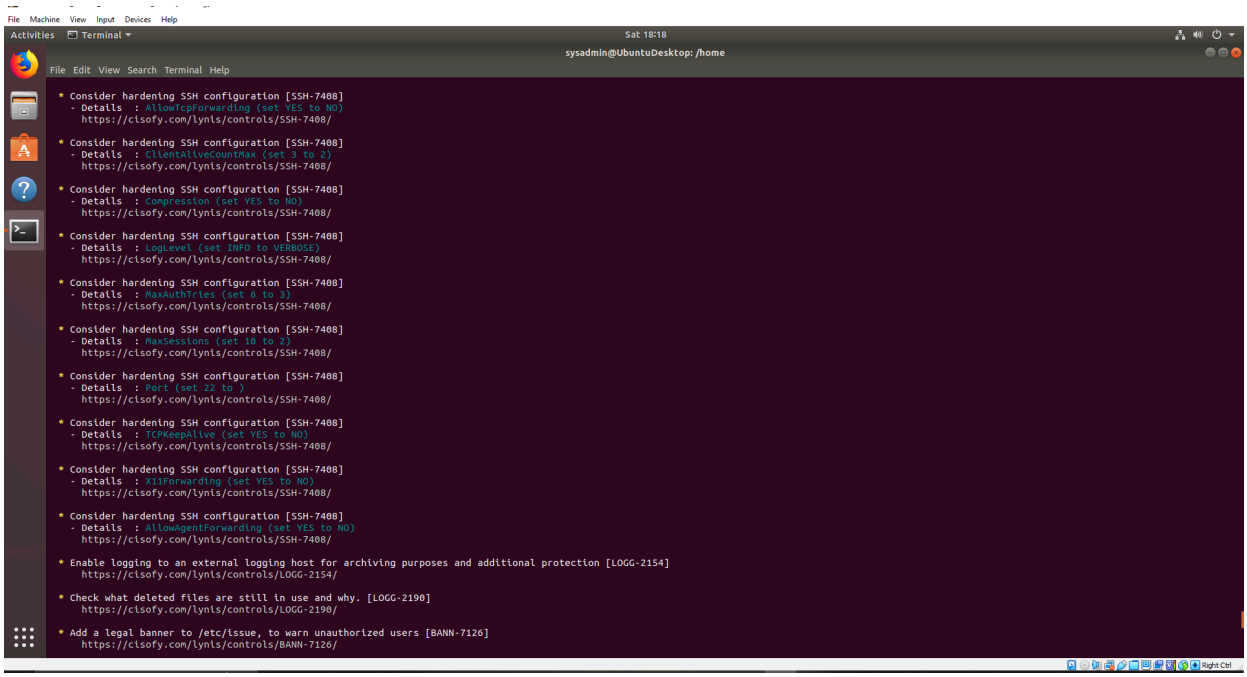
```
Man lynis
```

3. Command to run an audit:

```
sudo lynis system audit
```

4. Provide a report from the Lynis output with recommendations for hardening the system.

    a. Screenshot of report output:



Bonus

1. Command to install chkrootkit:

```
sudo apt install chkrootkit
```

2. Command to view documentation and instructions:

```
sudo chkrootkit
```

3. Command to run expert mode:

```
sudo chkrootkit -x
```

4. Provide a report from the chrootkit output with recommendations for hardening the system.

    a. Screenshot of end of sample output: