**## Week 5 Homework Submission File: Archiving and Logging Data**

Please edit this file by adding the solution commands on the line below the prompt.

Save and submit the completed file for your homework submission.

**---**

**### Step 1: Create, Extract, Compress, and Manage tar Backup Archives**

**1.** Command to \*\*extract\*\* the `TarDocs.tar` archive to the current directory: tar -xvf TarDocs.tar

**2.** Command to \*\*create\*\* the `Javaless\_Doc.tar` archive from the `TarDocs/` directory, while excluding the `TarDocs/Documents/Java` directory: tar -cvf Javaless\_Doc.tar --exclude "TarDocs/Documents/Java" TarDocs

**3.** Command to ensure `Java/` is not in the new `Javaless\_Docs.tar` archive: tar -tvf Javaless\_Doc.tar

\*\*Bonus\*\*

**-** Command to create an incremental archive called `logs\_backup\_tar.gz` with only changed files to `snapshot.file` for the `/var/log` directory:

**#### Critical Analysis Question**

**-** Why wouldn't you use the options `-x` and `-c` at the same time with `tar`?

--- "-x" is used to really extract or untar the tarfile and "-c" is used to create a new tar file. If you take those two and combine them and try to execute it you will confuse the computer because it will be unsure whether you want to create a file or extract it.

**### Step 2: Create, Manage, and Automate Cron Jobs**

**1.** Cron job for backing up the `/var/log/auth.log` file:

--- 0 6 \* \* 3 gzip -c /var/log/auth.log > /auth\_backup.tgz

**### Step 3: Write Basic Bash Scripts**

**1.** Brace expansion command to create the four subdirectories: mkdir ~/backups/{freemem,diskuse,openlist,freedisk}

**2.** Paste your `system.sh` script edits below:

```bash

#!/bin/bash

[free -h > ~/backups/freemem/free\_mem.txt

df -h --output=used > ~/backups/diskuse/disk\_usage.txt

lsof > ~/backups/openlist/open\_list.txt

df -h --output=avail > ~/backups/freedisk/free\_disk.txt

]

```

**3.** Command to make the `system.sh` script executable: chmod +x system.sh

\*\*Optional\*\*

**-** Commands to test the script and confirm its execution: sudo ./system.sh

\*\*Bonus\*\*

**-** Command to copy `system` to system-wide cron directory: sudo cp system.sh /var/spool/cron

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**### Step 4. Manage Log File Sizes**

**1.** Run `sudo nano /etc/logrotate.conf` to edit the `logrotate` configuration file.

Configure a log rotation scheme that backs up authentication messages to the `/var/log/auth.log`.

**-** Add your config file edits below:

```bash

[/var/log/auth.log {

weekly

rotate 7

notifempty

compress

delaycompress

missingok

}

]

```

**---**

**### Bonus: Check for Policy and File Violations**

**1.** Command to verify `auditd` is active:systemctl status auditd

That’s as far as I got on the bonus sorry about that.