



## Module 5 Challenge Submission File

### Archiving and Logging Data

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

#### 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_Docs.tar | grep Java
```

#### Critical Analysis Question

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

-x is extract and -c is create. There would be nothing to extract if you were creating a new file.

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

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

```
0 6 * * */4 tar -zcf /auth_backup.tgz /var/log/auth.log
```

## 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:

```
#!/bin/bash
free -h > ~/backups/freemem/free_mem.txt
du -h > ~/backups/diskuse/disk_usage.txt
lsof > ~/backups/openlist/open_list.txt
df -h > ~/backups/freedisk/free_disk.txt
```

3. Command to make the `system.sh` script executable:

```
chmod +x system.sh
```

## Optional

4. Commands to test the script and confirm its execution:

```
cat ~/backups/freemem/free_mem.txt
cat ~/backups/diskuse/disk_usage.txt
cat ~/backups/openlist/open_list.txt
cat ~/backups/freedisk/free_disk.txt
```

## 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`.

- a. Add your config file edits:

```
/var/log/auth.log {  
    weekly  
    rotate 7  
    notifempty  
    delaycompress  
    missingok  
}
```