Cybersecurity

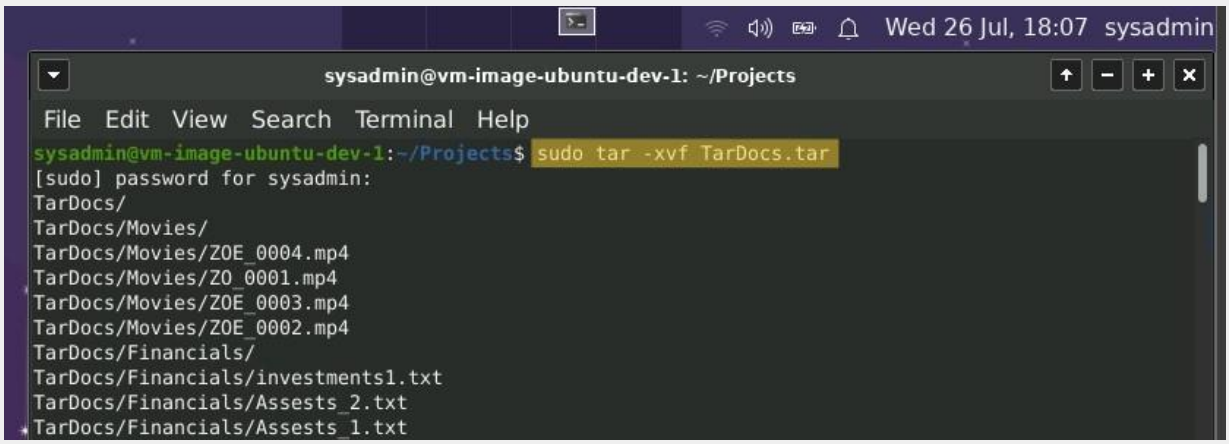
Module 5 Challenge Submission File

Archiving and Logging Data

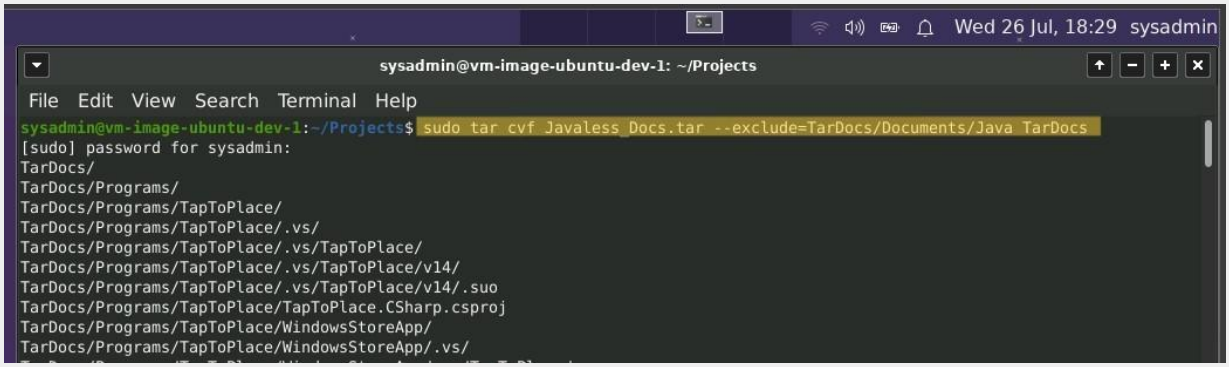
Make a copy of this document to work in, and then for each step, add the solution command below the prompt. Save and submit this completed file as your Challenge deliverable.

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

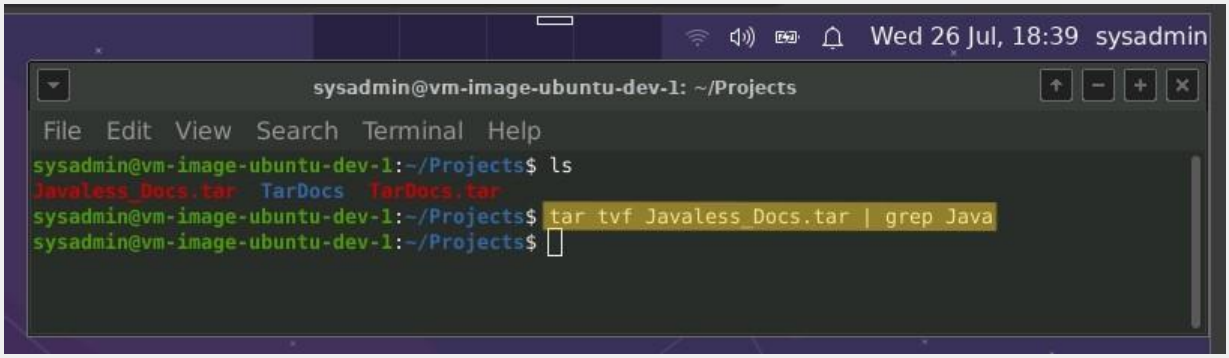
1. Command to **extract** the `TarDocs.tar` archive to the current directory:



2. Command to **create** the `Javaless_Doc.tar` archive from the `TarDocs/` directory, while excluding the `TarDocs/Documents/Java` directory:

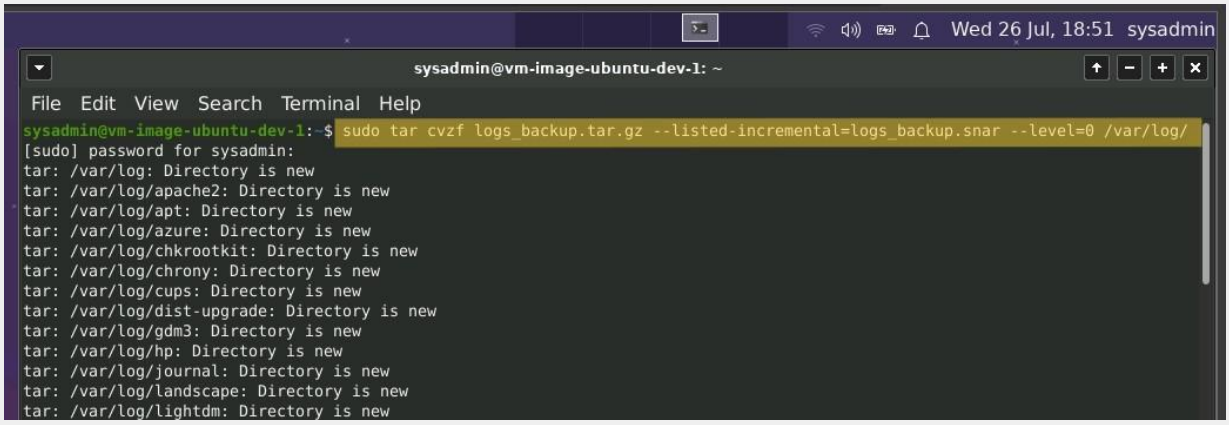


3. Command to ensure `Java/` is not in the new `Javaless_Docs.tar` archive:



Optional

4. Command to create an incremental archive called `logs_backup.tar.gz` with only changed files to `snapshot.file` for the `/var/log` directory:



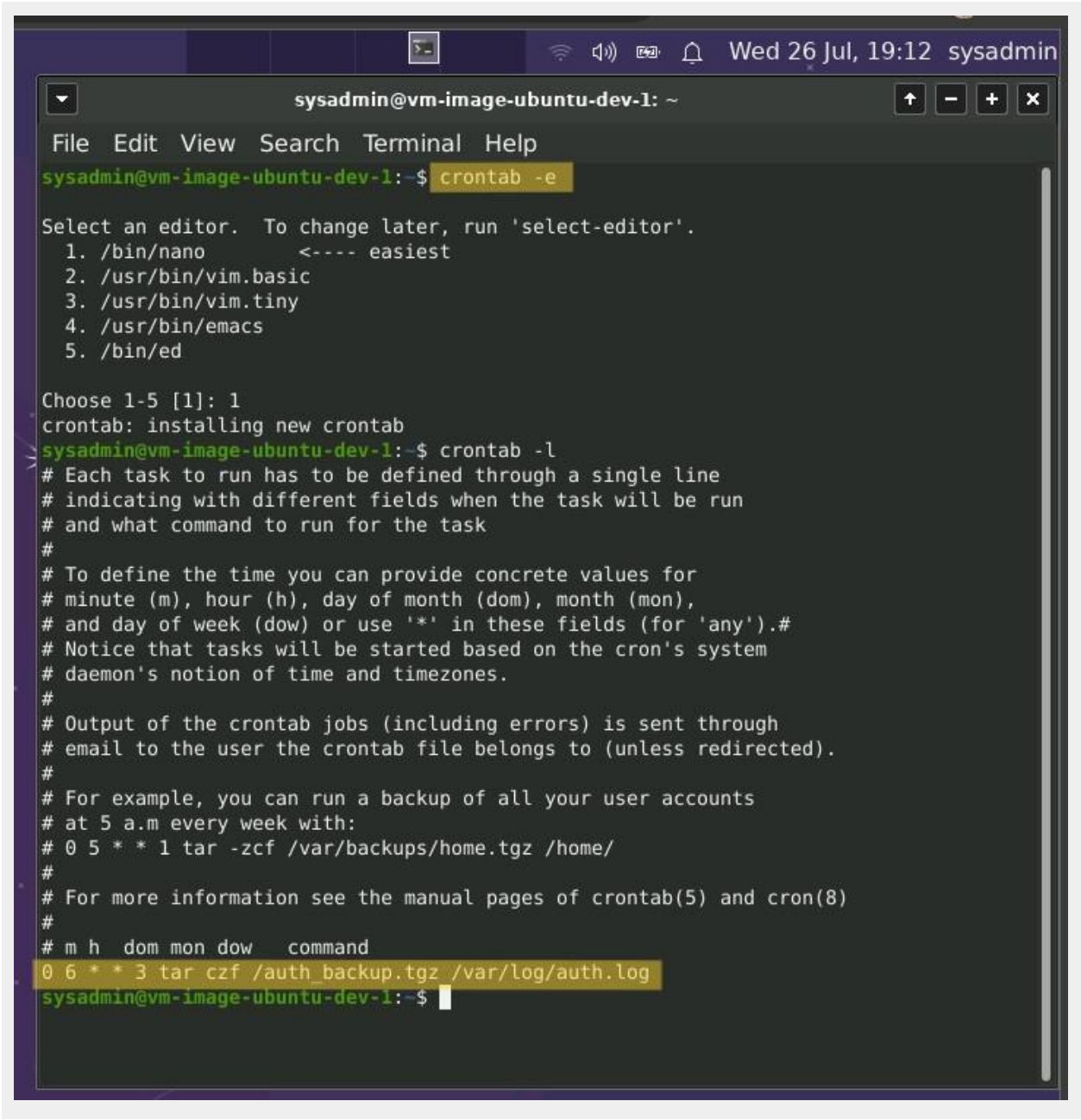
Critical Analysis Question

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

`I would not use -x and -c at the same time with tar because you cannot create and extract an archive in one command line.`

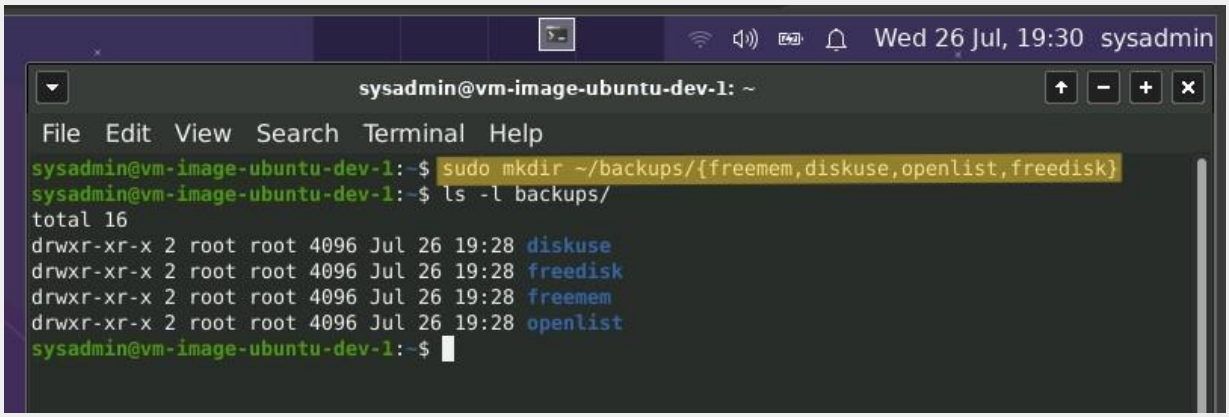
Step 2: Create, Manage, and Automate Cron Jobs

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

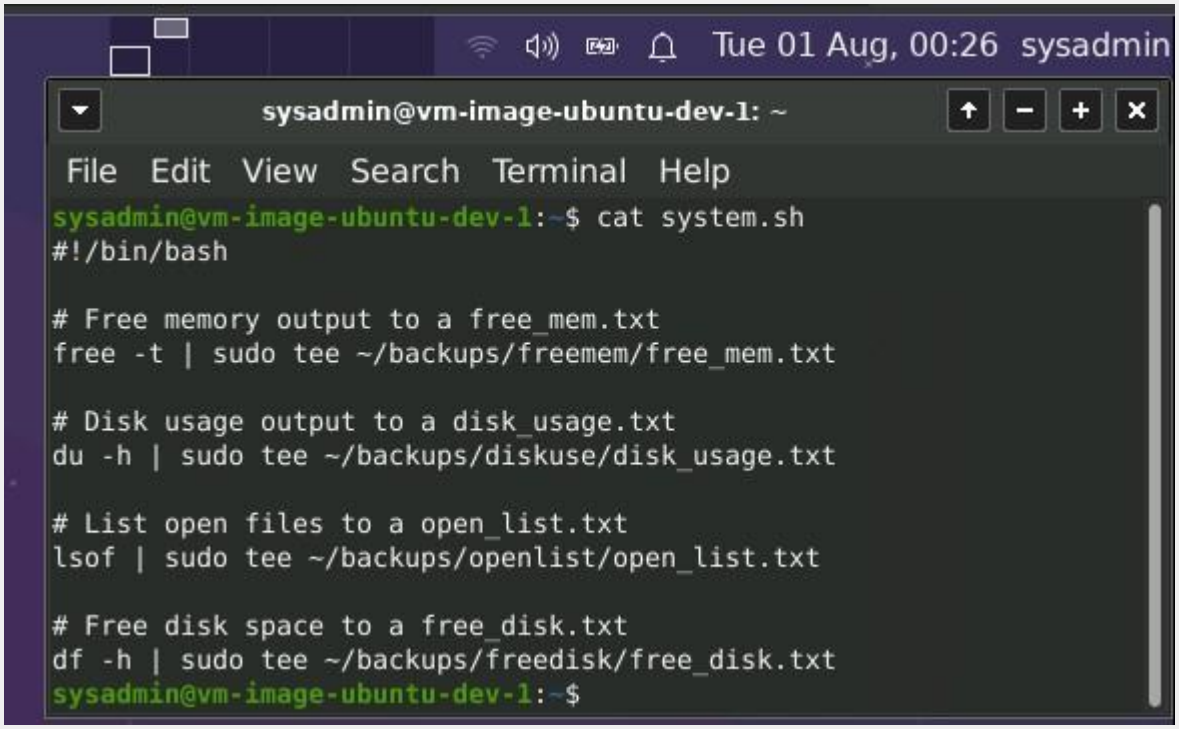


Step 3: Write Basic Bash Scripts

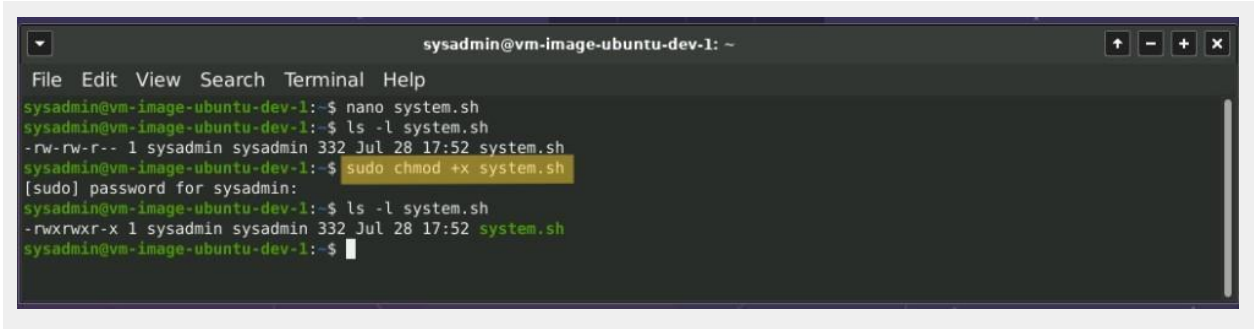
1. Brace expansion command to create the four subdirectories:



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

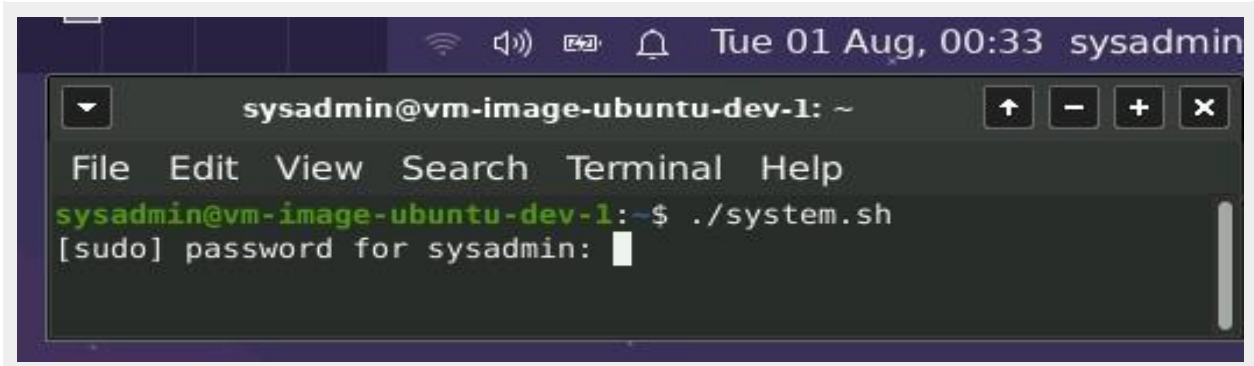


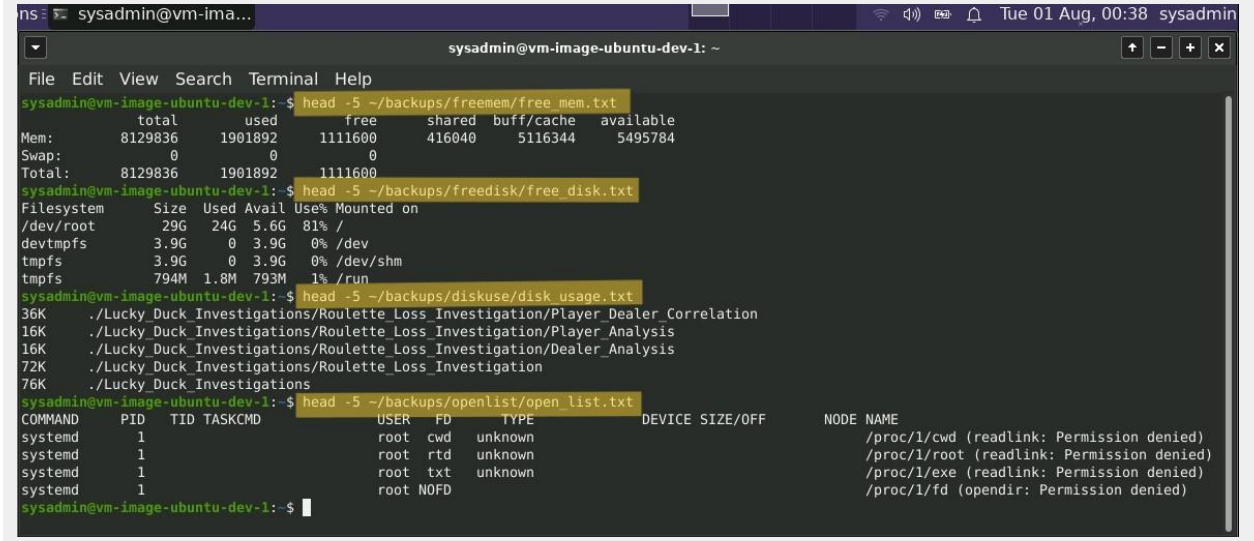
3. Command to make the `system.sh` script executable:



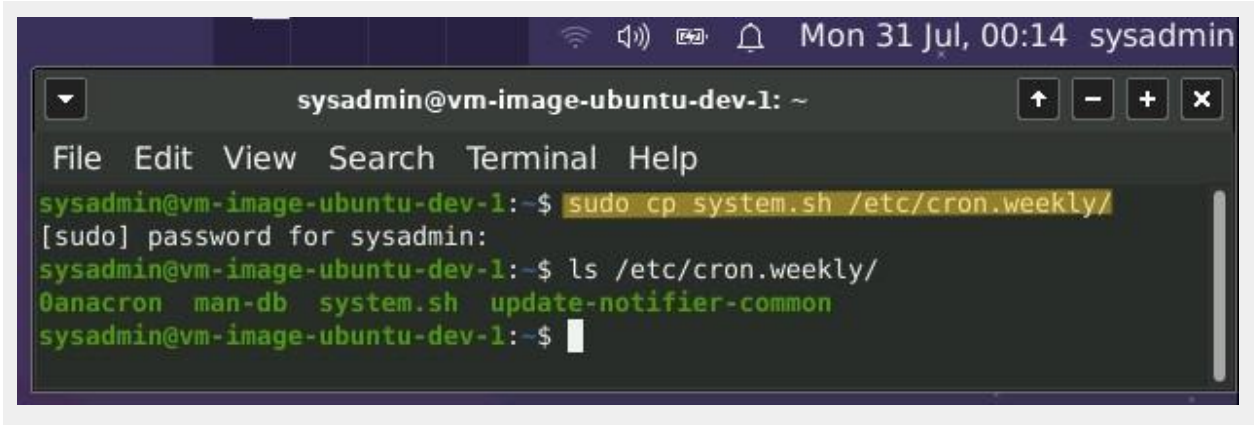
Optional

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





5. Command to copy `system` to system-wide cron directory:

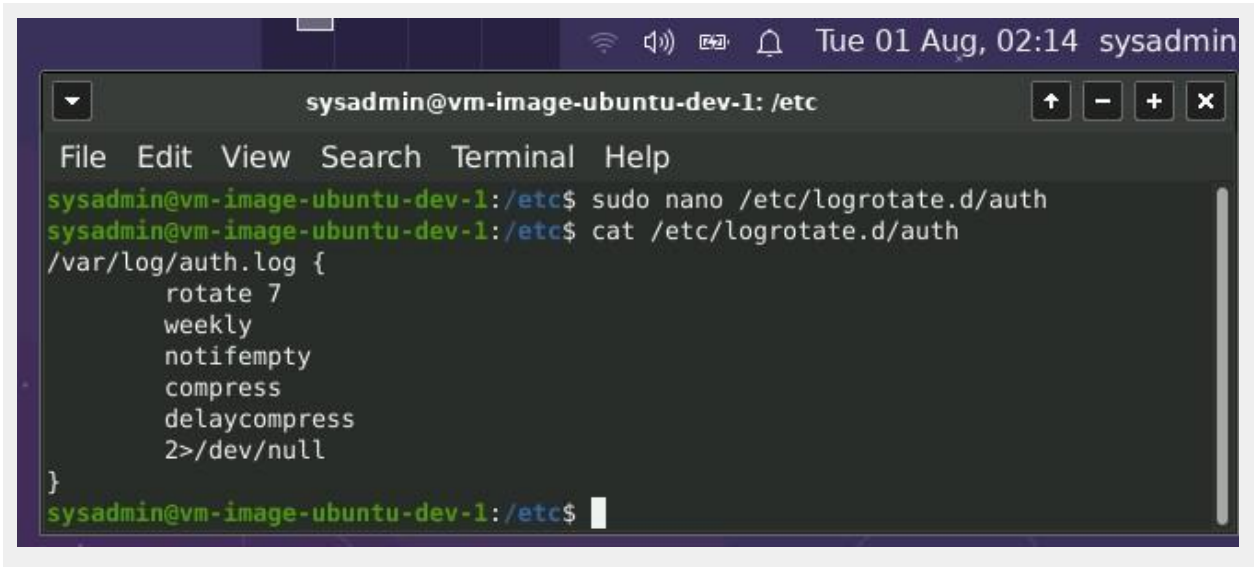


Step 4. Manage Log File Sizes

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

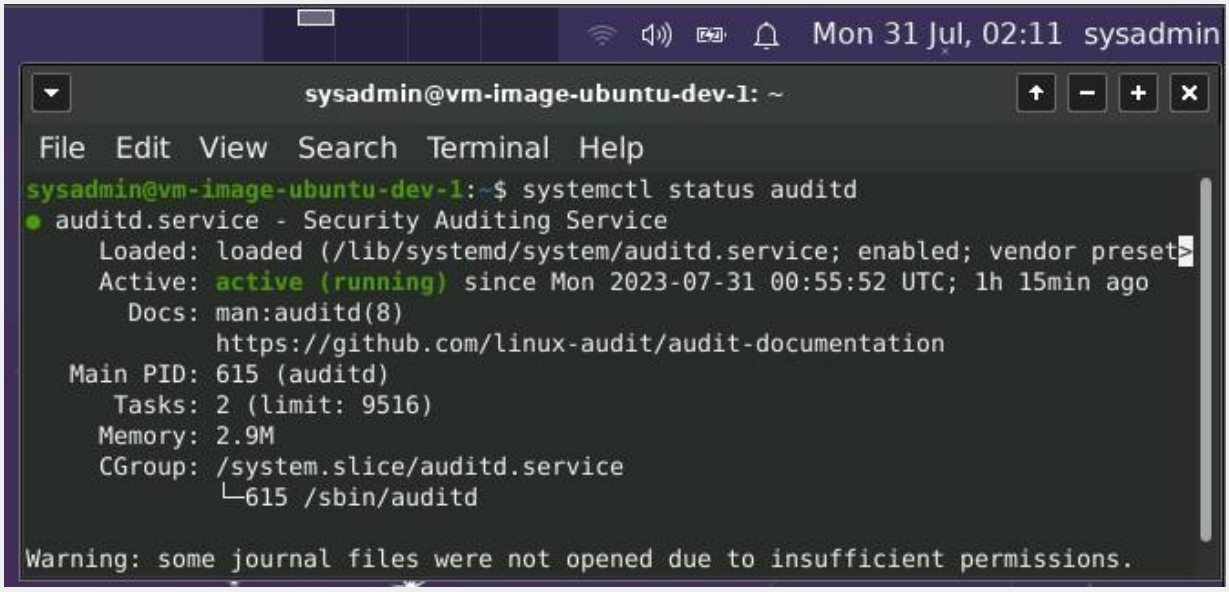
   Configure a log rotation scheme that backs up authentication messages to the `/var/log/auth.log`.

   a. Add your config file edits:



Optional Additional Challenge: Check for Policy and File Violations

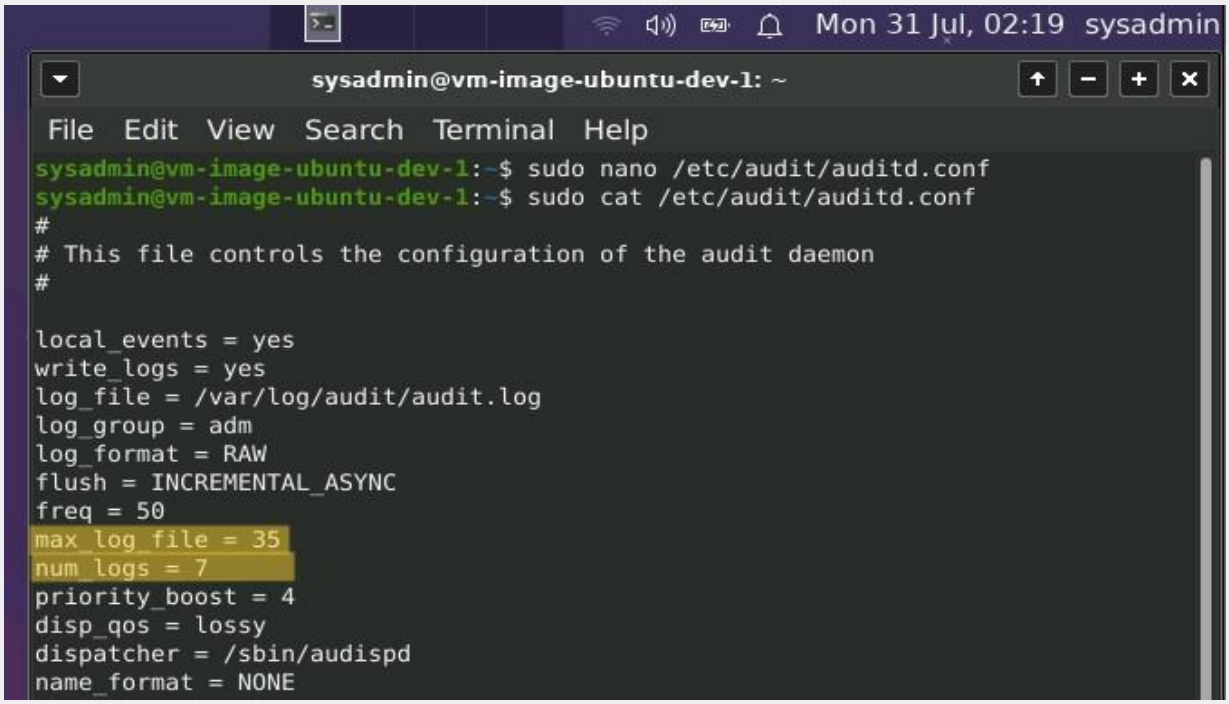
1. Command to verify `auditd` is active:



2. Command to set number of retained logs and maximum log file size:

```
sudo nano /etc/audit/auditd.conf
```

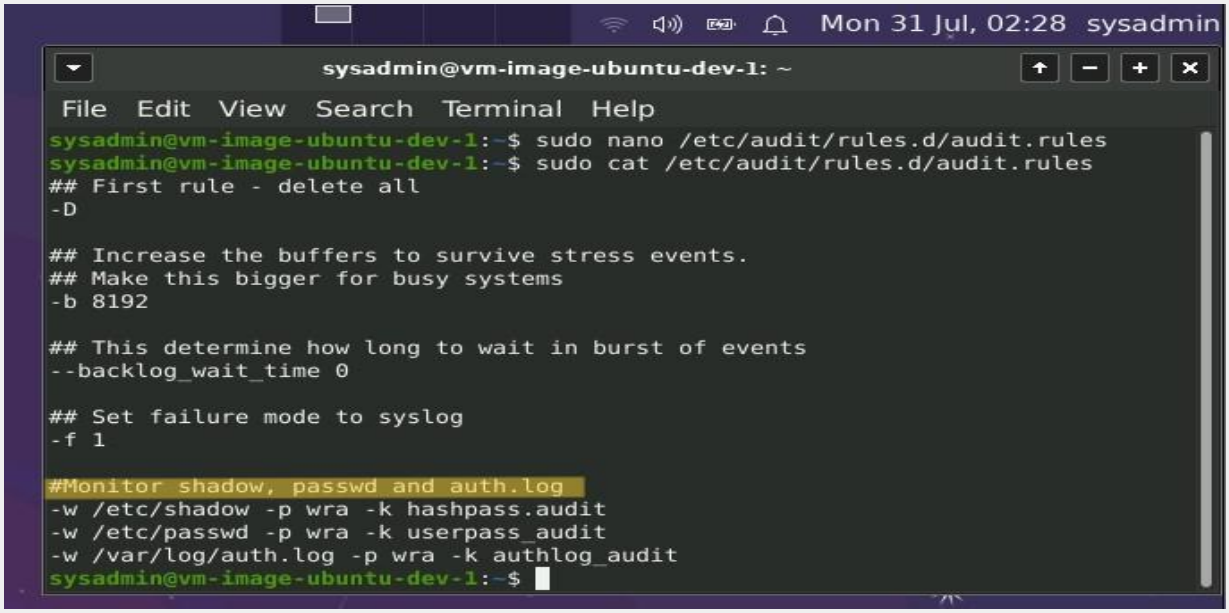
Add the edits made to the configuration file:



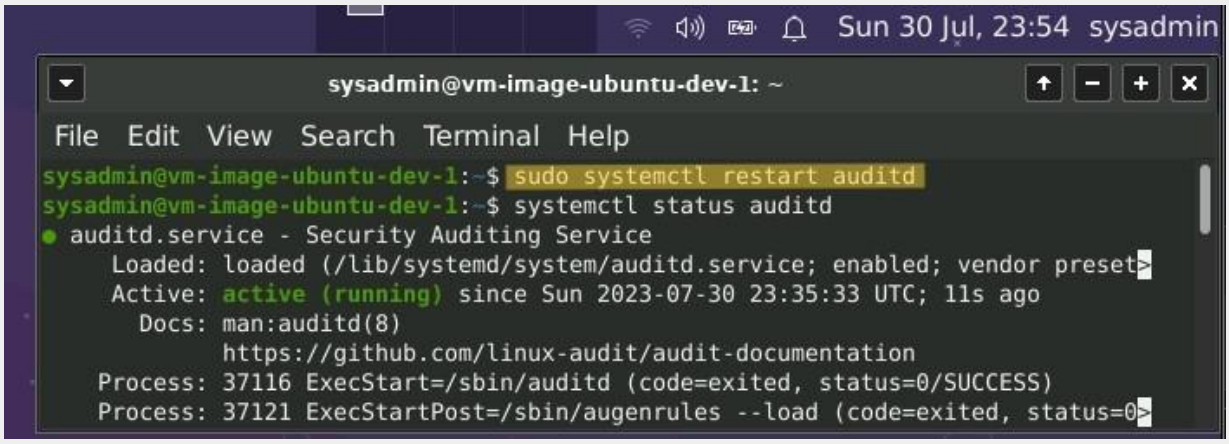
3. Command using `auditd` to set rules for `/etc/shadow`, `/etc/passwd`, and `/var/log/auth.log`:

```
sudo nano /etc/audit/rules.d/audit.rules
```

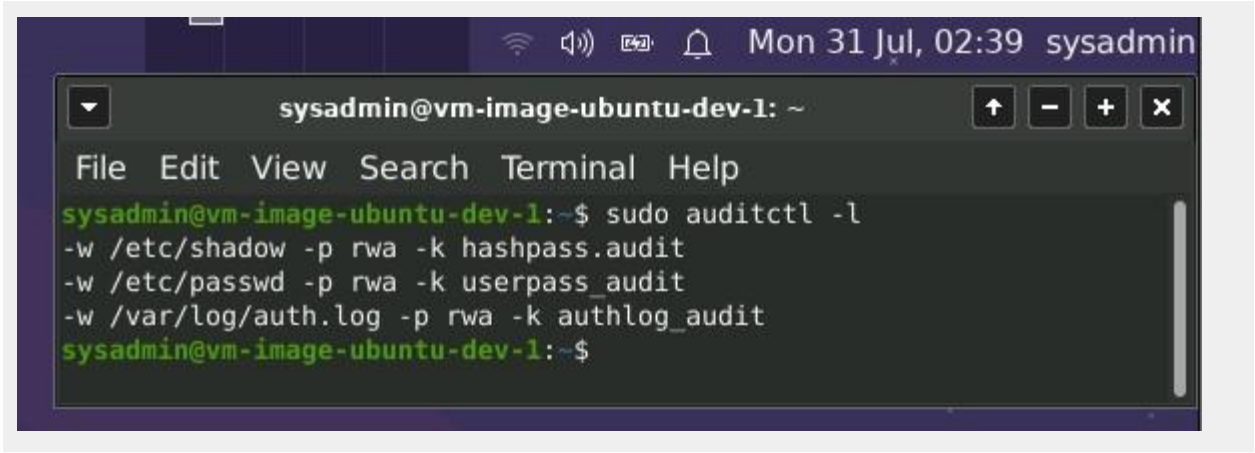
Add the edits made to the `rules` file below:



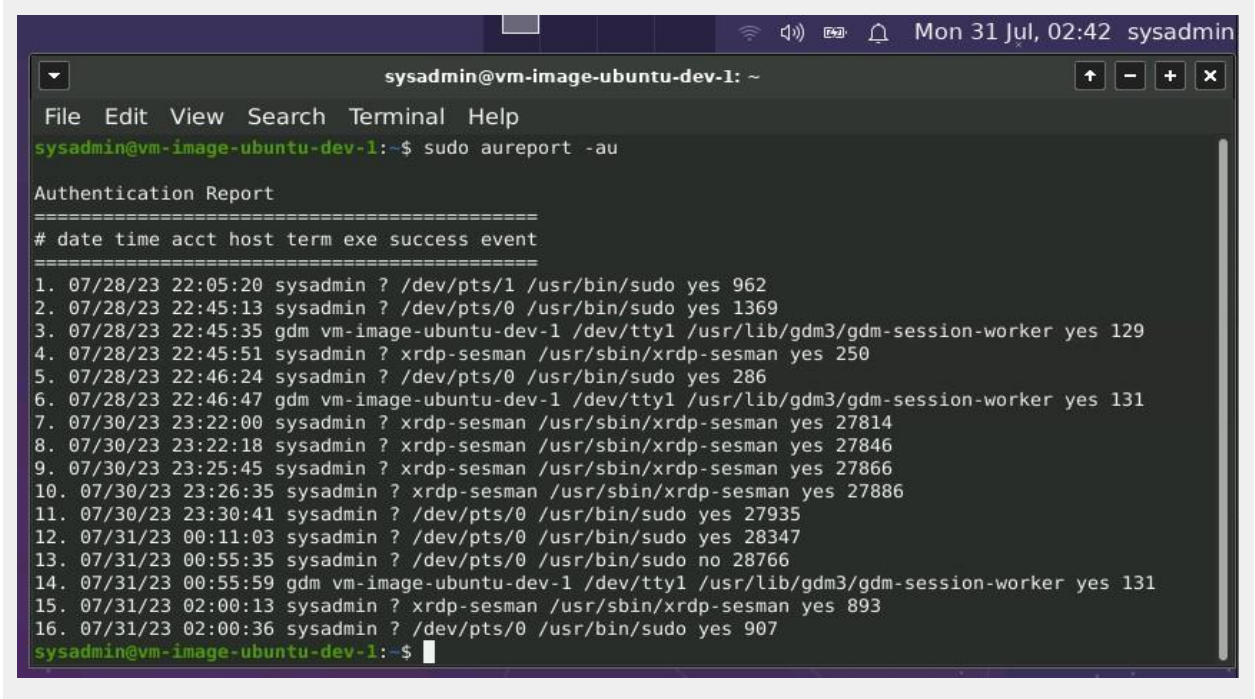
4. Command to restart `auditd`:



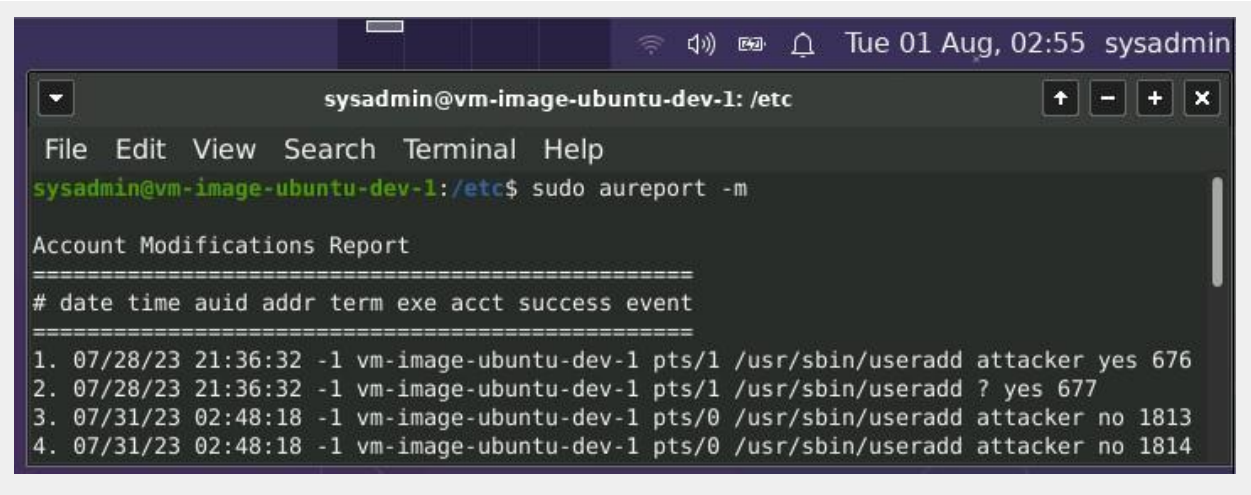
5. Command to list all `auditd` rules:



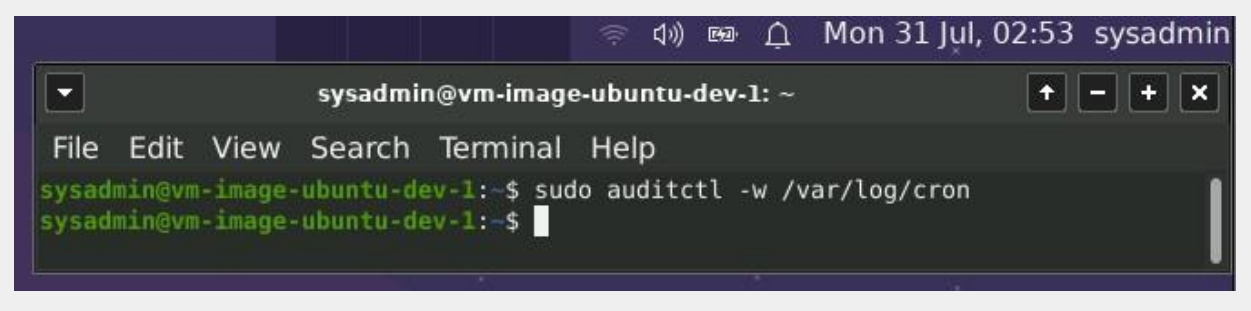
6. Command to produce an audit report:



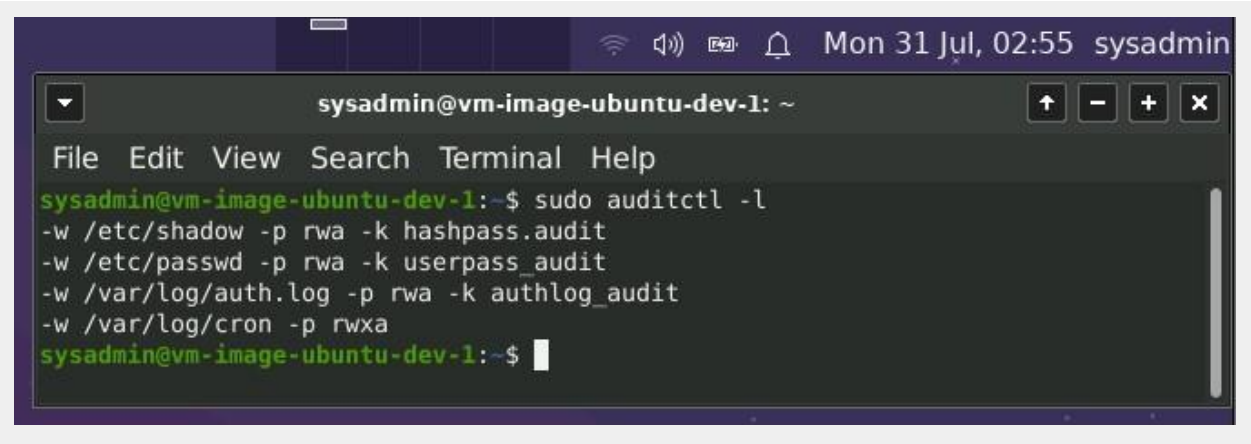
7. Create a user with `sudo useradd attacker` and produce an audit report that lists account modifications:



8. Command to use auditd to watch `/var/log/cron`:

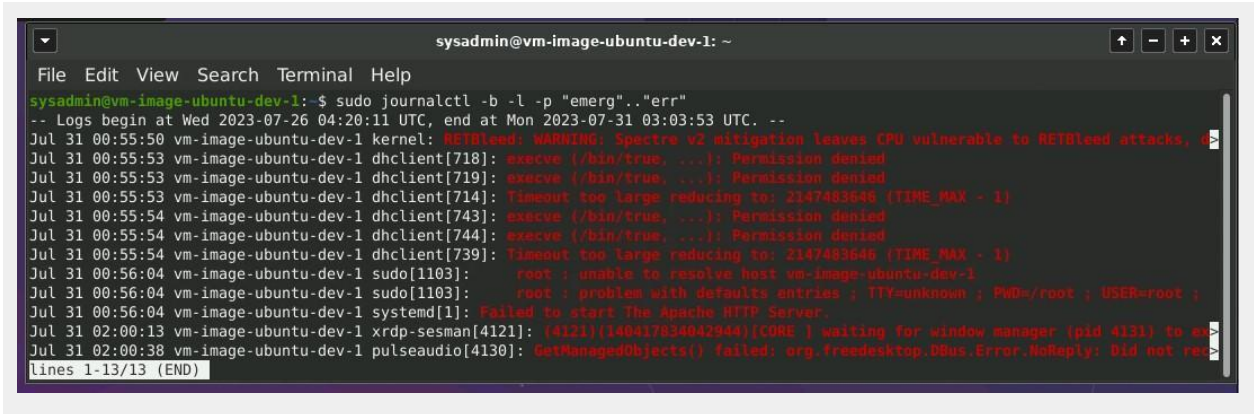


9. Command to verify `auditd` rules:

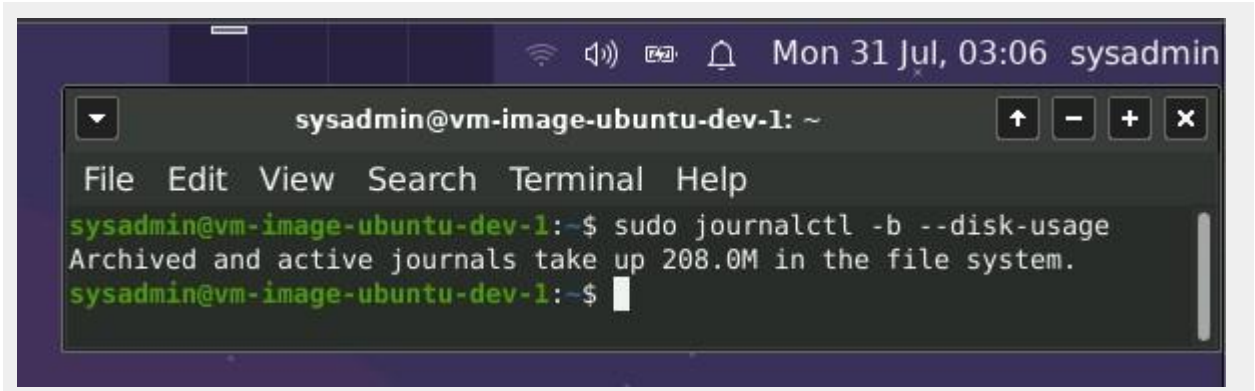


Optional (Research Activity): Perform Various Log Filtering Techniques

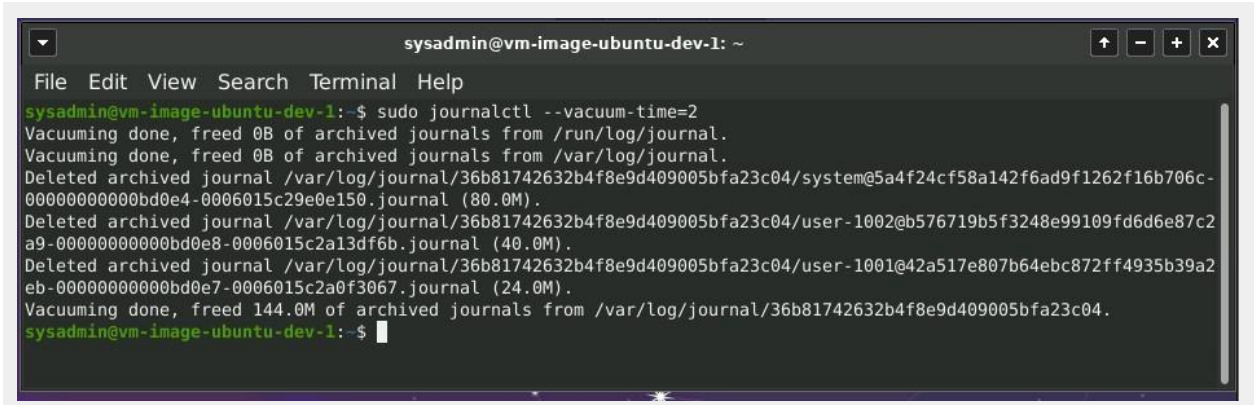
1. Command to return `journalctl` messages with priorities from emergency to error:



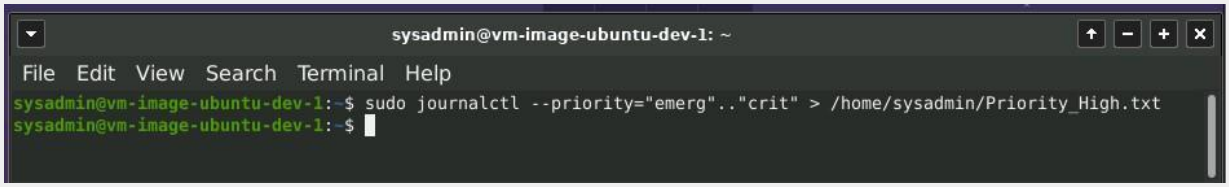
2. Command to check the disk usage of the system journal unit since the most recent boot:



3. Command to remove all archived journal files except the most recent two:



4. Command to filter all log messages with priority levels between zero and two, and save output to `/home/sysadmin/Priority_High.txt`:



5. Command to automate the last command in a daily cron job. Add the edits made to the crontab file below: