Assignment 5:

1.Write a script that does the following:

2.Creates a directory named backup_logs in /var/log.

Create a Directory Named backup_logs in /var/log

The script will ensure that a directory named backup_logs exists. This is where we will temporarily store log files that are older than 7 days.

mkdir -p /var/log/backup_logs

Find Log Files Older Than 7 Days and Move Them

Using the find command, the script will search for files in /var/log that are older than 7 days (-mtime +7). Once found, it will move these files to the backup_logs directory.

find /var/log -type f -mtime +7 -exec mv {} /var/log/backup_logs/ \;

- **/var/log**: Directory to search for files.
- **-type f**: Only finds regular files (not directories).
- **-mtime +7**: Finds files modified more than 7 days ago.
- **-exec mv {} /var/log/backup_logs/ \;**: Moves each file ({}) to the backup_logs directory.

Compress the backup_logs Directory

DATE=$(date +%Y%m%d) # Get the current date in YYYYMMDD format tar -czf /var/log/backup_${DATE}.tar.gz -C /var/log backup_logs

- **$(date +%Y%m%d)**: Dynamically fetches the current date.
- **tar -czf**: Compresses files into a .tar.gz archive.
- **-C /var/log**: Specifies the directory to compress (relative paths will be resolved from /var/log).
- **backup_${DATE}.tar.gz**: Names the archive using the date.

Test the Script

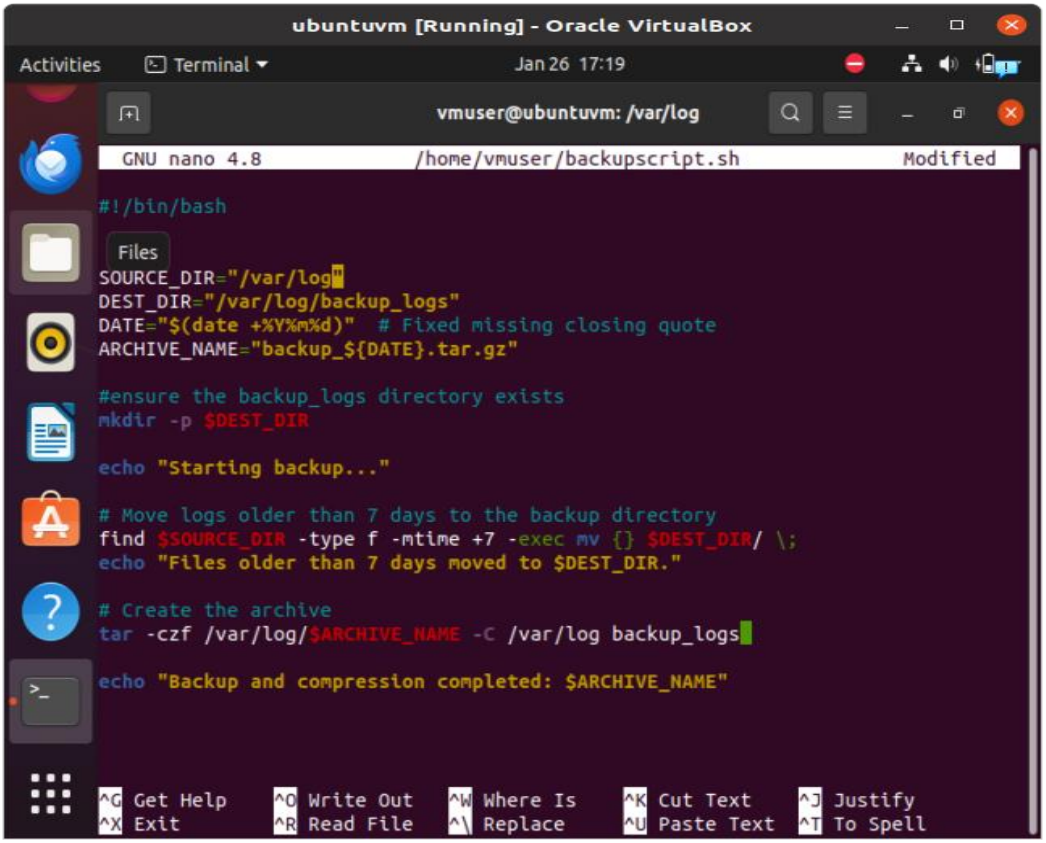
To test the script:

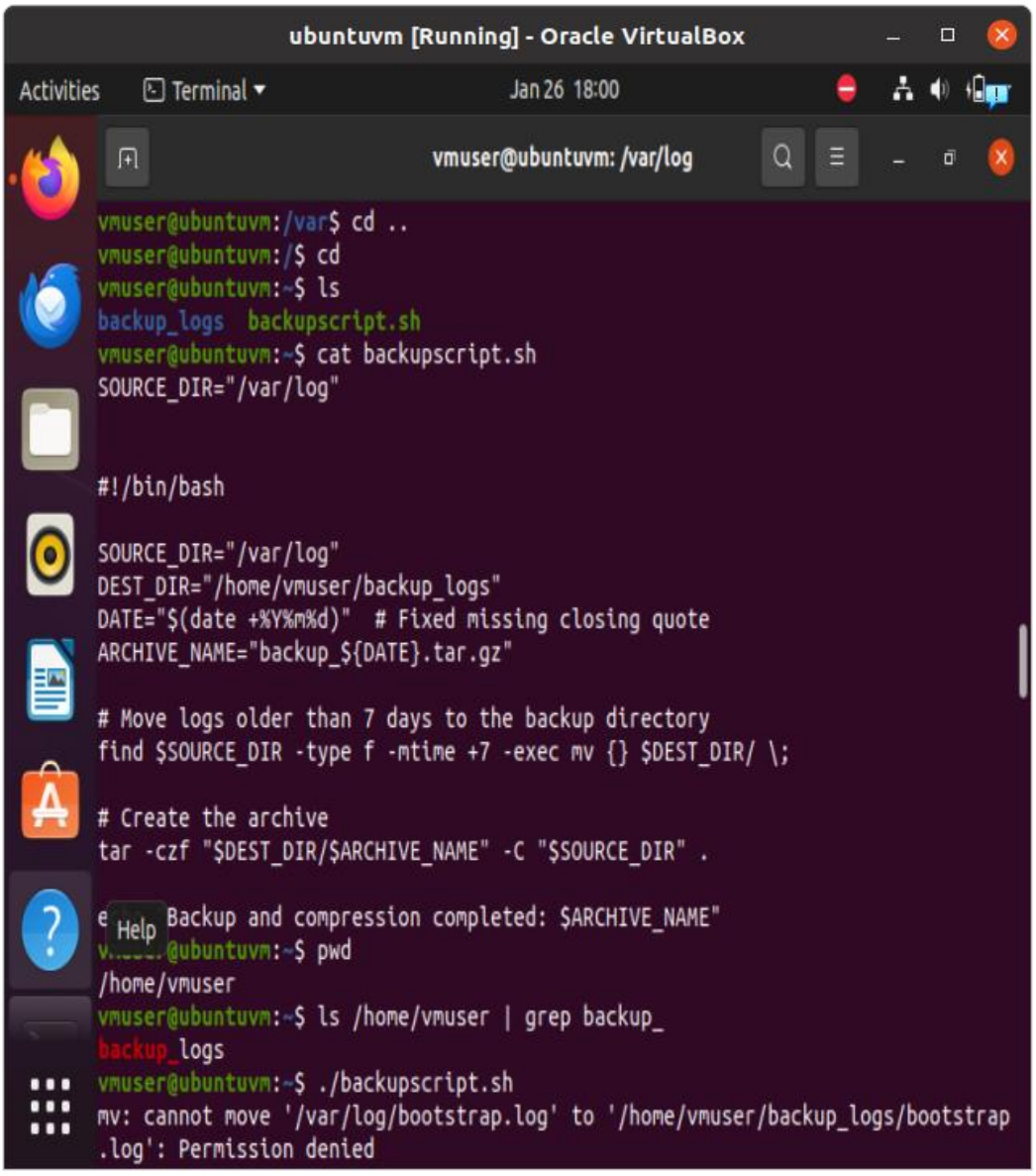
1. Create dummy log files with modification dates to simulate real logs.
2. Run the script to verify its behavior.

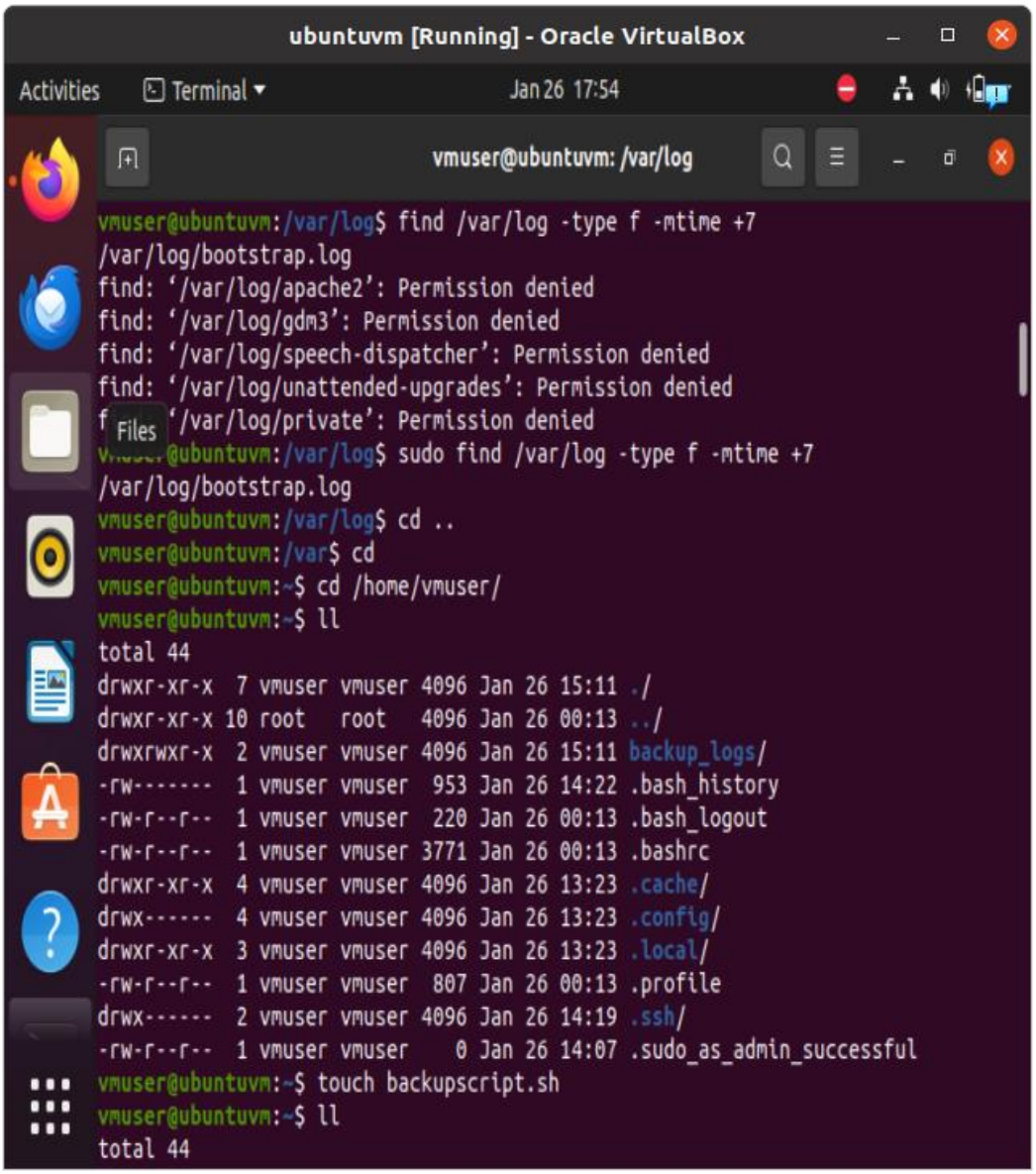
mkdir -p /var/log/test_logs touch -d "8 days ago" /var/log/test_logs/dummy_8_days.log touch -d "3 days ago" /var/log/test_logs/dummy_3_days.log

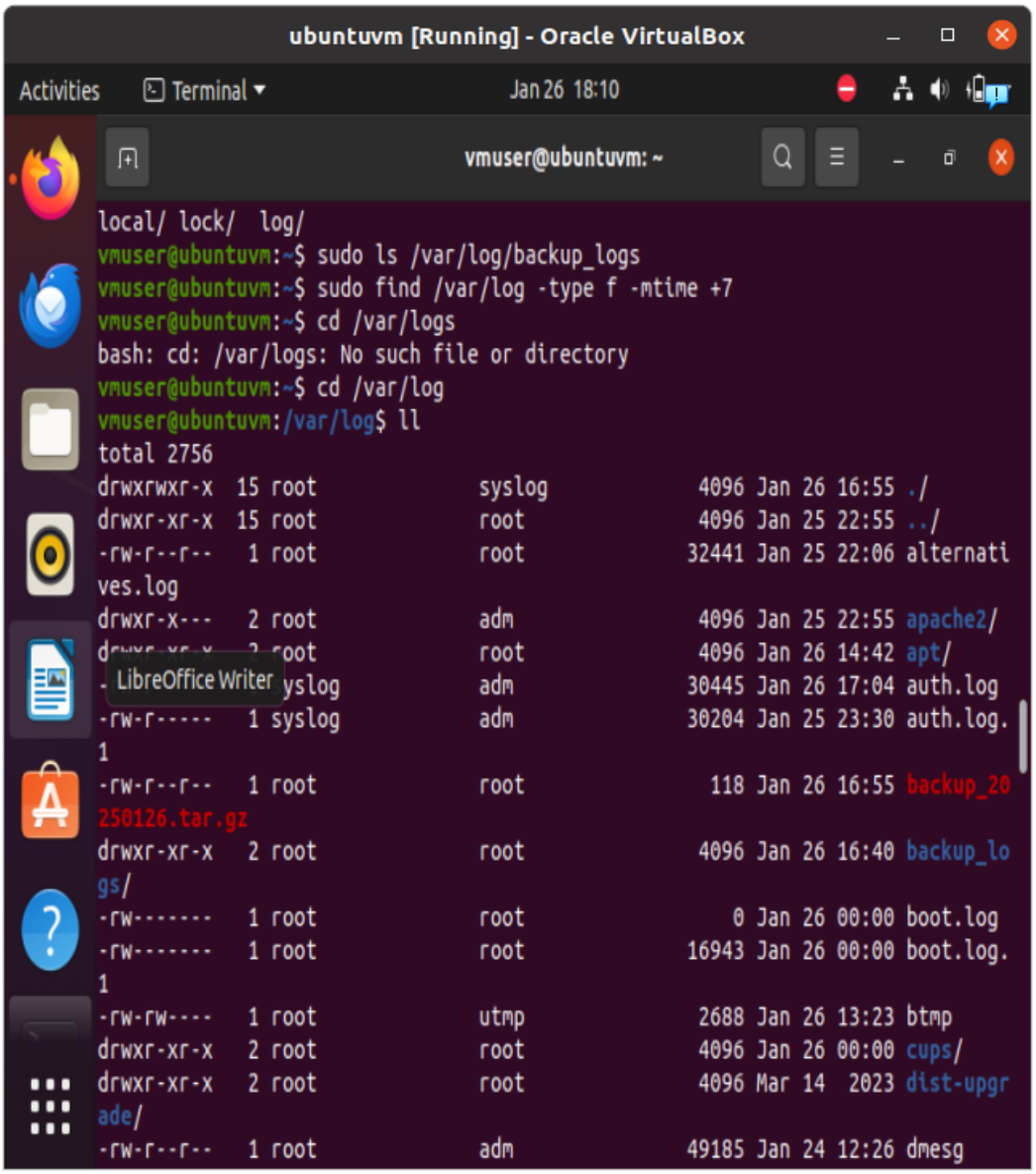
These is the script

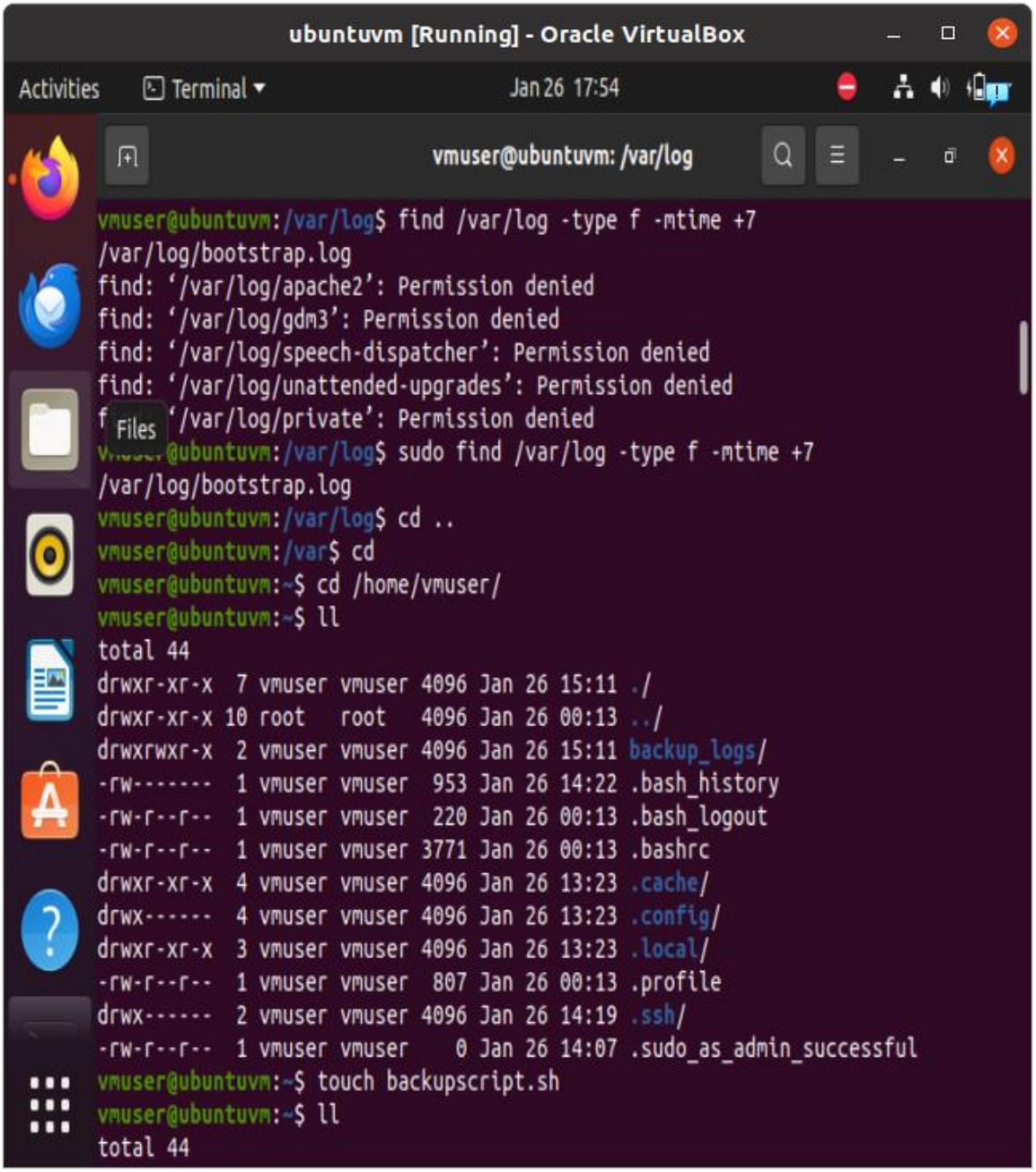
```
#!/bin/bash

Define source and destination directories

SOURCE_DIR="/var/log" DEST_DIR="/var/log/backup_logs" DATE=$(date +%Y%m%d)
ARCHIVE_NAME="backup_${DATE}.tar.gz"

Step 1: Create the backup_logs directory if it doesn't exist

mkdir -p $DEST_DIR

Step 2: Find and move files older than 7 days

find $SOURCE_DIR -type f -mtime +7 -exec mv {} $DEST_DIR/ ;

Step 3: Compress the backup_logs directory

tar -czf $SOURCE_DIR/$ARCHIVE_NAME -C $SOURCE_DIR backup_logs

echo "Backup completed: $ARCHIVE_NAME"
```

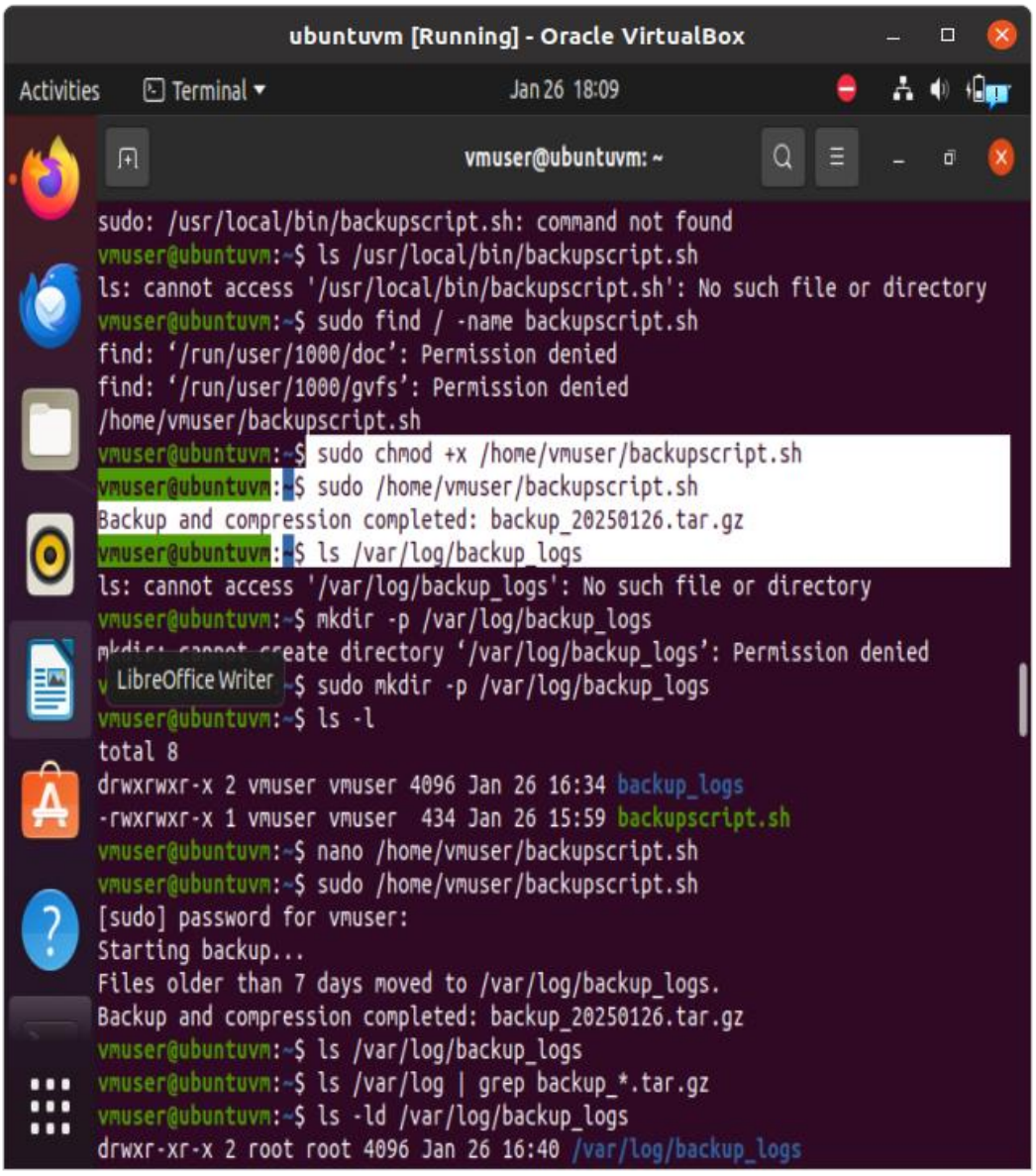

ubuntuvm [Running] - Oracle VirtualBox
Activities
Terminal
Jan 26 17:19
vmuser@ubuntuvm: /var/log
GNU nano 4.8 /home/vmuser/backupscript.sh Modified
#!/bin/bash
Files
SOURCE_DIR="/var/log"
DEST_DIR="/var/log/backup_logs"
DATE="$(date +%Y%m%d)" # Fixed missing closing quote
ARCHIVE_NAME="backup_${DATE}.tar.gz"
#ensure the backup_logs directory exists
mkdir -p $DEST_DIR
echo "Starting backup..."
Move logs older than 7 days to the backup directory
find $SOURCE_DIR -type f -mtime +7 -exec mv {} $DEST_DIR/ \;
echo "Files older than 7 days moved to $DEST_DIR."
Create the archive
tar -czf /var/log/$ARCHIVE_NAME -C /var/log backup_logs
echo "Backup and compression completed: $ARCHIVE_NAME"
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell


ubuntuvm [Running] - Oracle VirtualBox
Activities
Terminal
Jan 26 18:00
vmuser@ubuntuvm: /var/log
vmuser@ubuntuvm:/var$ cd ..
vmuser@ubuntuvm:/$ cd
vmuser@ubuntuvm:~$ ls
backup_logs backupscript.sh
vmuser@ubuntuvm:~$ cat backupscript.sh
SOURCE_DIR="/var/log"
#!/bin/bash
SOURCE_DIR="/var/log"
DEST_DIR="/home/vmuser/backup_logs"
DATE="$(date +%Y%m%d)" # Fixed missing closing quote
ARCHIVE_NAME="backup_${DATE}.tar.gz"
# Move logs older than 7 days to the backup directory
find $SOURCE_DIR -type f -mtime +7 -exec mv {} $DEST_DIR/ \;
Create the archive
tar -czf "$DEST_DIR/$ARCHIVE_NAME" -C "$SOURCE_DIR" .
Backup and compression completed: $ARCHIVE_NAME"
Help
@ubuntuvm:~$ pwd
/home/vmuser
vmuser@ubuntuvm:~$ ls /home/vmuser | grep backup_
backup_logs
vmuser@ubuntuvm:~$ ./backupscript.sh
mv: cannot move '/var/log/bootstrap.log' to '/home/vmuser/backup_logs/bootstrap
.log': Permission denied


ubuntuvm [Running] - Oracle VirtualBox
Activities
Terminal
Jan 26 17:54
vmuser@ubuntuvm: /var/log
Files
vmuser@ubuntuvm:/var/log$ find /var/log -type f -mtime +7
/var/log/bootstrap.log
find: '/var/log/apache2': Permission denied
find: '/var/log/gdm3': Permission denied
find: '/var/log/speech-dispatcher': Permission denied
find: '/var/log/unattended-upgrades': Permission denied
'/var/log/private': Permission denied
@ubuntuvm:/var/log$ sudo find /var/log -type f -mtime +7
/var/log/bootstrap.log
vmuser@ubuntuvm:/var/log$ cd ..
vmuser@ubuntuvm:/var$ cd
vmuser@ubuntuvm:~$ cd /home/vmuser/
vmuser@ubuntuvm:~$ ll
total 44
drwxr-xr-x 7 vmuser vmuser 4096 Jan 26 15:11 ./
drwxr-xr-x 10 root root 4096 Jan 26 00:13 ../
drwxrwxr-x 2 vmuser vmuser 4096 Jan 26 15:11 backup_logs/
-rw------- 1 vmuser vmuser 953 Jan 26 14:22 .bash_history
-rw-r--r-- 1 vmuser vmuser 220 Jan 26 00:13 .bash_logout
-rw-r--r-- 1 vmuser vmuser 3771 Jan 26 00:13 .bashrc
drwxr-xr-x 4 vmuser vmuser 4096 Jan 26 13:23 .cache/
drwx------ 4 vmuser vmuser 4096 Jan 26 13:23 .config/
drwxr-xr-x 3 vmuser vmuser 4096 Jan 26 13:23 .local/
-rw-r--r-- 1 vmuser vmuser 807 Jan 26 00:13 .profile
drwx------ 2 vmuser vmuser 4096 Jan 26 14:19 .ssh/
-rw-r--r-- 1 vmuser vmuser 0 Jan 26 14:07 .sudo_as_admin_successful
vmuser@ubuntuvm:~$ touch backupscript.sh
vmuser@ubuntuvm:~$ ll
total 44


ubuntuvm [Running] - Oracle VirtualBox
Activities
Terminal
Jan 26 18:10
vmuser@ubuntuvm: ~
LibreOffice Writer
local/ lock/ log/
vmuser@ubuntuvm:~$ sudo ls /var/log/backup_logs
vmuser@ubuntuvm:~$ sudo find /var/log -type f -mtime +7
vmuser@ubuntuvm:~$ cd /var/logs
bash: cd: /var/logs: No such file or directory
vmuser@ubuntuvm:~$ cd /var/log
vmuser@ubuntuvm:/var/log$ ll
total 2756
drwxrwxr-x 15 root syslog 4096 Jan 26 16:55 ./
drwxr-xr-x 15 root root 4096 Jan 25 22:55 ../
-rw-r--r-- 1 root root 32441 Jan 25 22:06 alternatives.log
drwxr-x--- 2 root adm 4096 Jan 25 22:55 apache2/
drwxr-xr-x 2 root root 4096 Jan 26 14:42 apt/
-rw-r----- 1 syslog adm 30445 Jan 26 17:04 auth.log
-rw-r----- 1 syslog adm 30204 Jan 25 23:30 auth.log.1
-rw-r--r-- 1 root root 118 Jan 26 16:55 backup_20250126.tar.gz
drwxr-xr-x 2 root root 4096 Jan 26 16:40 backup_logs/
-rw------- 1 root root 0 Jan 26 00:00 boot.log
-rw------- 1 root root 16943 Jan 26 00:00 boot.log.1
-rw-rw---- 1 root utmp 2688 Jan 26 13:23 btmp
drwxr-xr-x 2 root root 4096 Jan 26 00:00 cups/
drwxr-xr-x 2 root root 4096 Mar 14 2023 dist-upgrade/
-rw-r--r-- 1 root adm 49185 Jan 24 12:26 dmesg


ubuntuvm [Running] - Oracle VirtualBox
Activities
Terminal
Jan 26 17:54
vmuser@ubuntuvm: /var/log
Files
vmuser@ubuntuvm:/var/log$ find /var/log -type f -mtime +7
/var/log/bootstrap.log
find: '/var/log/apache2': Permission denied
find: '/var/log/gdm3': Permission denied
find: '/var/log/speech-dispatcher': Permission denied
find: '/var/log/unattended-upgrades': Permission denied
f '/var/log/private': Permission denied
@ubuntuvm:/var/log$ sudo find /var/log -type f -mtime +7
/var/log/bootstrap.log
vmuser@ubuntuvm:/var/log$ cd ..
vmuser@ubuntuvm:/var$ cd
vmuser@ubuntuvm:~$ cd /home/vmuser/
vmuser@ubuntuvm:~$ ll
total 44
drwxr-xr-x 7 vmuser vmuser 4096 Jan 26 15:11 ./
drwxr-xr-x 10 root   root   4096 Jan 26 00:13 ../
drwxrwxr-x 2 vmuser vmuser 4096 Jan 26 15:11 backup_logs/
-rw------- 1 vmuser vmuser 953 Jan 26 14:22 .bash_history
-rw-r--r-- 1 vmuser vmuser 220 Jan 26 00:13 .bash_logout
-rw-r--r-- 1 vmuser vmuser 3771 Jan 26 00:13 .bashrc
drwxr-xr-x 4 vmuser vmuser 4096 Jan 26 13:23 .cache/
drwx------ 4 vmuser vmuser 4096 Jan 26 13:23 .config/
drwxr-xr-x 3 vmuser vmuser 4096 Jan 26 13:23 .local/
-rw-r--r-- 1 vmuser vmuser 807 Jan 26 00:13 .profile
drwx------ 2 vmuser vmuser 4096 Jan 26 14:19 .ssh/
-rw-r--r-- 1 vmuser vmuser   0 Jan 26 14:07 .sudo_as_admin_successful
vmuser@ubuntuvm:~$ touch backupscript.sh
vmuser@ubuntuvm:~$ ll
total 44



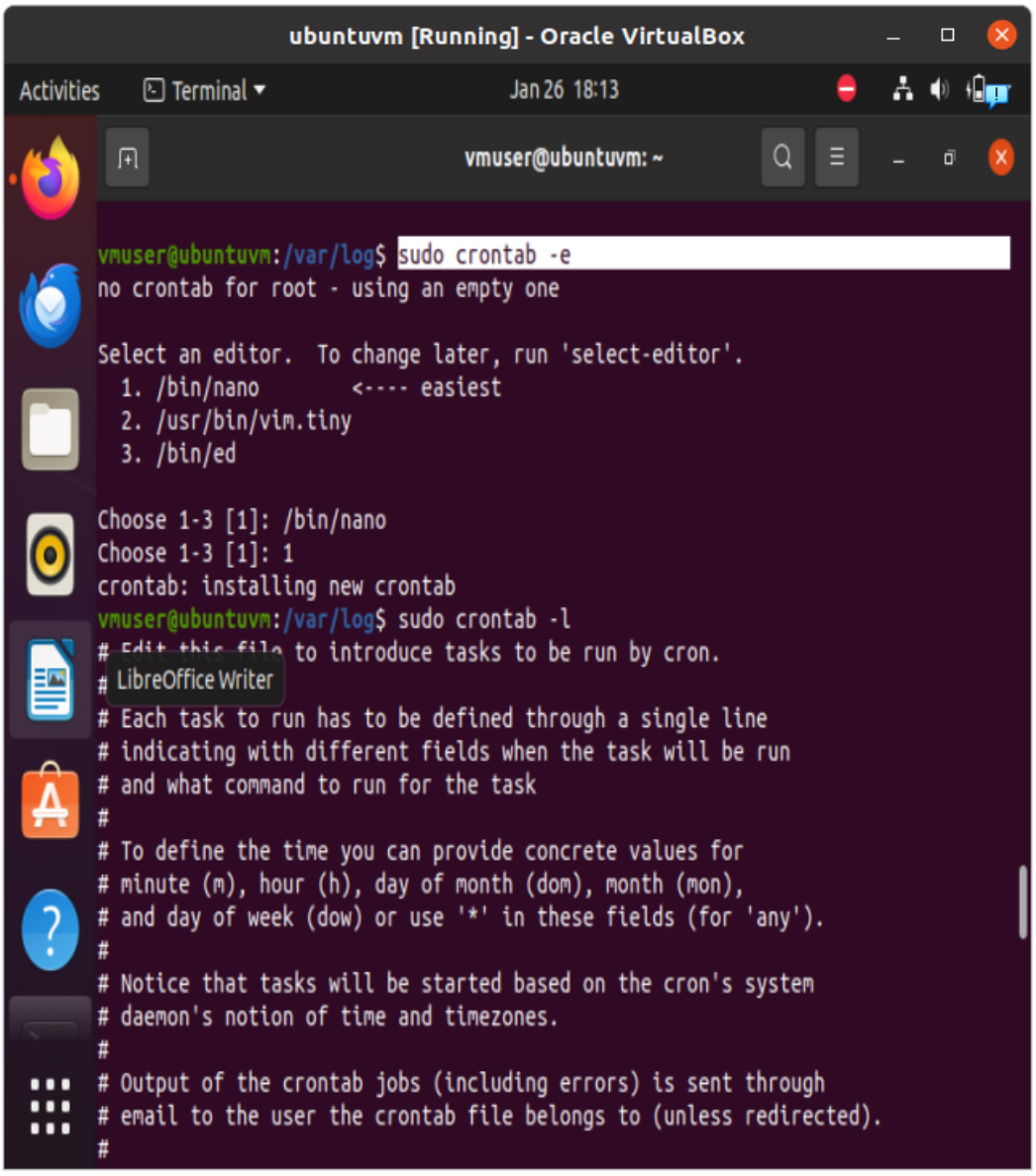
Set Up a Cron Job

A cron job will schedule the script to run automatically every day at midnight. This ensures the logs are backed up regularly.

sudo crontab –e

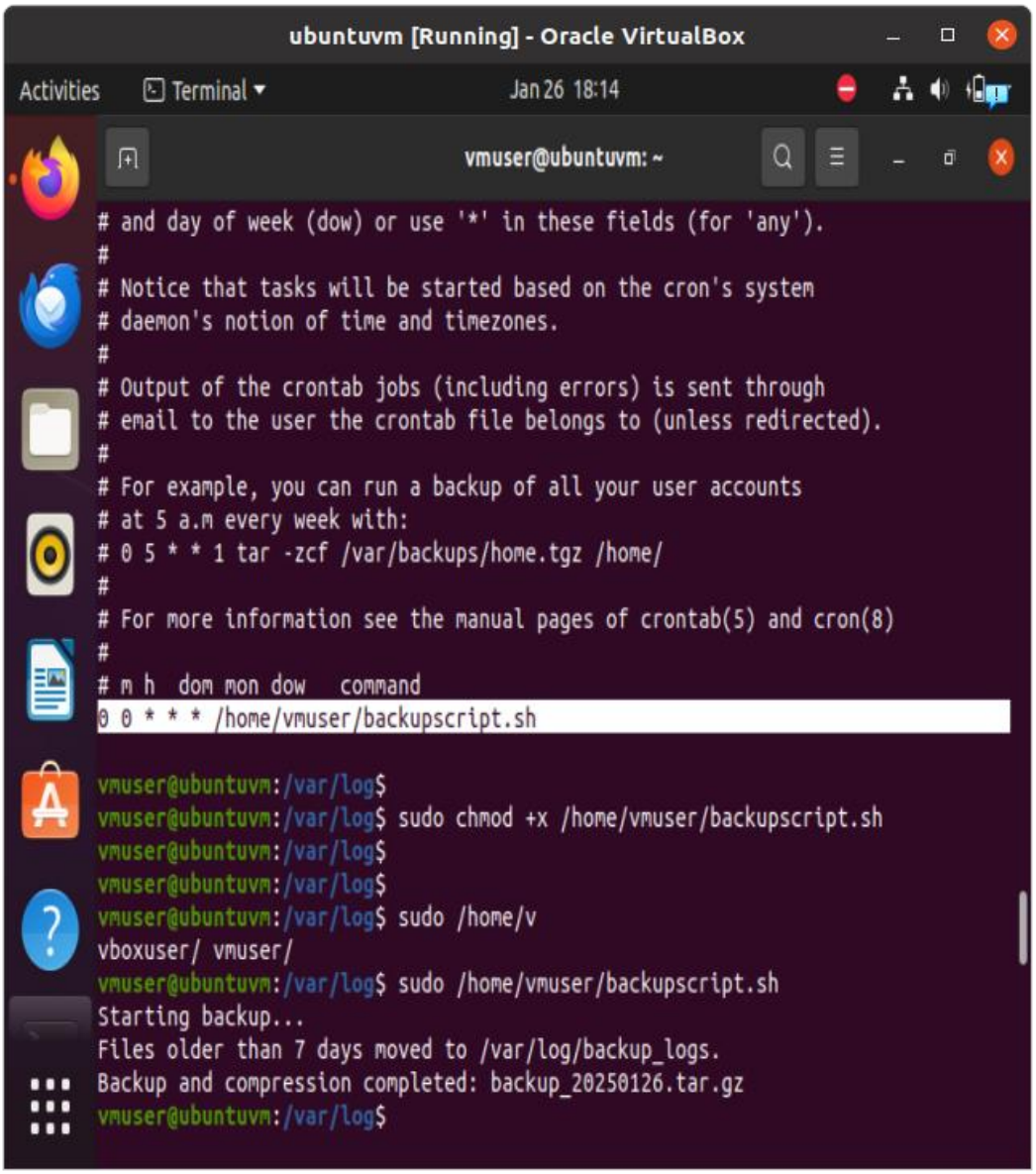
o/p

0 0 * * * /path/to/backup_logs.sh



- **0 0 * * ***: Specifies midnight as the execution time.
- **/path/to/backup_logs.sh**: Replace with the full path to your script.

sudo crontab -l


ubuntuvm [Running] - Oracle VirtualBox
Activities
Terminal
Jan 26 18:14
vmuser@ubuntuvm: ~
and day of week (dow) or use '*' in these fields (for 'any').
#
Notice that tasks will be started based on the cron's system
daemon's notion of time and timezones.
#
Output of the crontab jobs (including errors) is sent through
email to the user the crontab file belongs to (unless redirected).
#
For example, you can run a backup of all your user accounts
at 5 a.m every week with:
0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
For more information see the manual pages of crontab(5) and cron(8)
#
m h dom mon dow command
0 0 * * * /home/vmuser/backupscript.sh
vmuser@ubuntuvm:/var/log$
vmuser@ubuntuvm:/var/log$ sudo chmod +x /home/vmuser/backupscript.sh
vmuser@ubuntuvm:/var/log$
vmuser@ubuntuvm:/var/log$
vmuser@ubuntuvm:/var/log$ sudo /home/v
vboxuser/ vmuser/
vmuser@ubuntuvm:/var/log$ sudo /home/vmuser/backupscript.sh
Starting backup...
Files older than 7 days moved to /var/log/backup_logs.
Backup and compression completed: backup_20250126.tar.gz
vmuser@ubuntuvm:/var/log$