



Name :Muhammad Shaheer
Roll no:20p-0480
Subject :Operating Systems Lab
Lab TASK 5

Task-1:

Your initial objective is to utilize rsync for both pushing and pulling data between your "Documents" and "Desktop" folders. This data synchronization process should be automated through a CRON job, scheduled to run every 5 minutes. Audit logs of these synchronization activities will be maintained in the /var/log/sync.log file. You are required to perform this data synchronization at least three times, with each synchronization separated by 5-minute intervals. During each sync operation, log entries will be recorded in the sync.log file. Mention the screenshots of the logs and crontab -l command in the PDF.

Solution:

```
ubuntu@ubuntu-Latitude-E5470:~$ pwd
/home/ubuntu
ubuntu@ubuntu-Latitude-E5470:~$ crontab -e
crontab: installing new crontab
ubuntu@ubuntu-Latitude-E5470:~$ crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task.
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
*/5 * * * * /bin/bash /home/ubuntu/sync_script.sh >> /var/log/sync.log 2>&1

ubuntu@ubuntu-Latitude-E5470:~$ crontab -e
crontab: installing new crontab
ubuntu@ubuntu-Latitude-E5470:~$ crontab -e
crontab: installing new crontab
ubuntu@ubuntu-Latitude-E5470:~$ crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task.
#
```

```
GNU nano 6.2 /tmp/crontab.HKx6gb/crontab *
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task.
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
*/5 * * * * rsync -av /home/ubuntu/Desktop/cron/original/ /home/ubuntu/Documents/ >> /var/log/sync.log 2>&1 && echo "sync completed at $(date)"
```

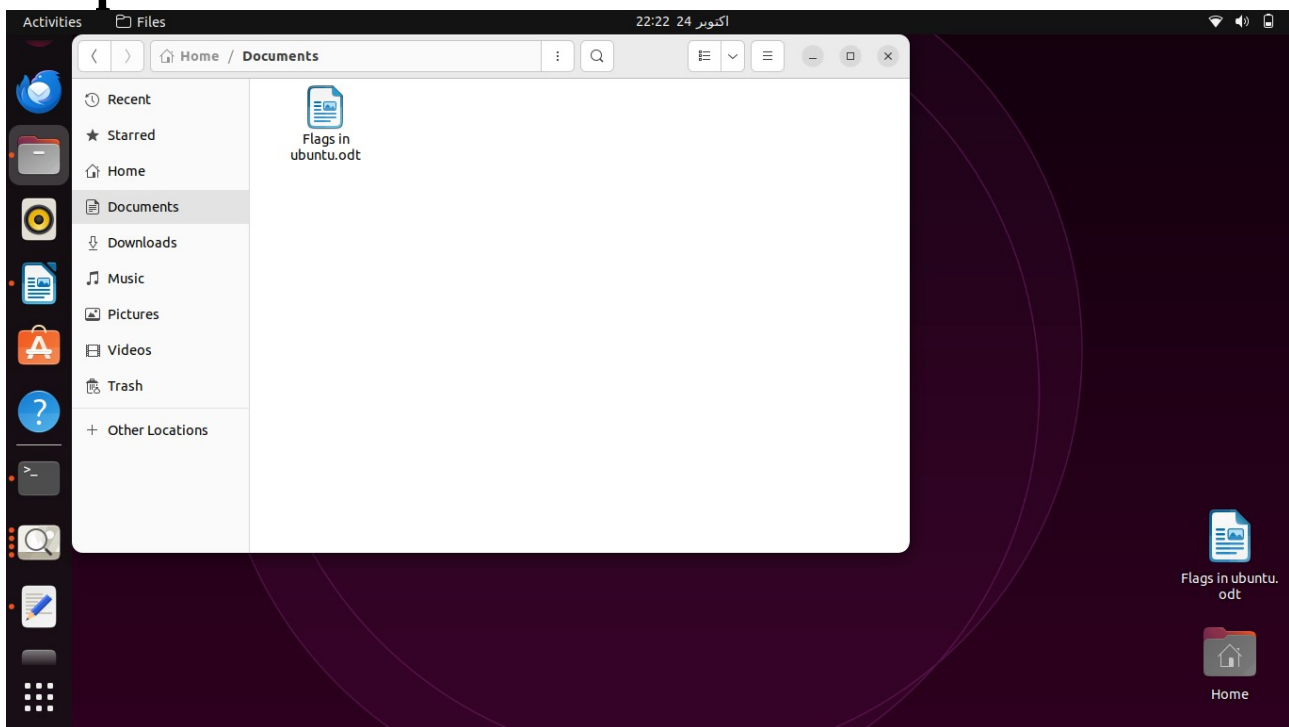
S

```
GNU nano 6.2 /tmp/crontab.HKx6gb/crontab *
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task.
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
$(date)" >> /var/log/sync.log && echo " " >> /var/log/sync.log
```

S

```
# 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
*/5 * * * * /bin/bash /home/ubuntu/sync_script.sh >> /var/log/sync.log 2>&1
ubuntu@ubuntu-Latitude-E5470:~$ crontab -e
crontab: installing new crontab
ubuntu@ubuntu-Latitude-E5470:~$ crontab -e
crontab: installing new crontab
ubuntu@ubuntu-Latitude-E5470:~$ crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task.
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
*/5 * * * * rsync -av /home/ubuntu/Desktop/cron/original/ /home/ubuntu/Documents/ >> /var/log/sync.log 2>&1 && echo "sync completed at $(date)"
" >> /var/log/sync.log && echo " " >> /var/log/sync.log
ubuntu@ubuntu-Latitude-E5470:~$
```

S Output:



Transfer from documents to desktop Task2

Text Editor 22:33 24 اکتوبر

num.sh ~/oslabtask5

Open Save

*sync.sh num.sh

```
1 #!/bin/bash
2
3 LOG_FILE="/var/log/num.log"
4 echo "printed at $(date)" >> "/var/log/num.log"
5
6 for ((i=2; i<=20; i+=2));
7 do
8     echo $i >> "/var/log/num.log"
9 done
10 echo "_____ " >> "/var/log/num.log"
11 echo "even numbers from 1 to 20 have been written to $LOG_FILE."
12
13
```

S

ments

loads

es

s

Locations

ubuntu@ubuntu-Latitude-E5470: ~

GNU nano 6.2 /tmp/crontab.wpGyeZ/crontab *

```
# and what command to run for the task.
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
*/1 * * * * rsync -av /home/ubuntu/Desktop/num.sh
```

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^_ Go To Line

S

```
ubuntu@ubuntu-Latitude-E5470:~$ crontab -e
crontab: installing new crontab
ubuntu@ubuntu-Latitude-E5470:~$ crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task.
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
*/1 * * * * rsync -av /home/ubuntu/Desktop/num.sh
```

```

# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# 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.
#
# 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
*/1 * * * * rsync -av /home/ubuntu/Desktop/num.sh

ubuntu@ubuntu-Latitude-E5470:~$ cd /var/log
ubuntu@ubuntu-Latitude-E5470:/var/log$ touch num.log
touch: cannot touch 'num.log': Permission denied
ubuntu@ubuntu-Latitude-E5470:/var/log$ sudo touch num.log
[sudo] password for ubuntu:
ubuntu@ubuntu-Latitude-E5470:/var/log$ cat /var/log/num.log
ubuntu@ubuntu-Latitude-E5470:/var/log$

```