

Unit 1.1 Graded Assignment: RSync

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Question:

On a linux server setup a cron job for copying example data with *rsync* periodically. Ensure the copying is handled in the background and independently of the user session.

Explanation of the question:

According to the above we have to setup a cron job which can copy a file from one location to other using *rsync* (*rsync* is a linux command-line tool that lets you transfer files and directories to local and remote destinations) and the copying should be done automatically according to the given timestamp.

Syntax:

```
rsync -options SOURCE_PATH DESTINATION_PATH
```

Solution:

Step #01:

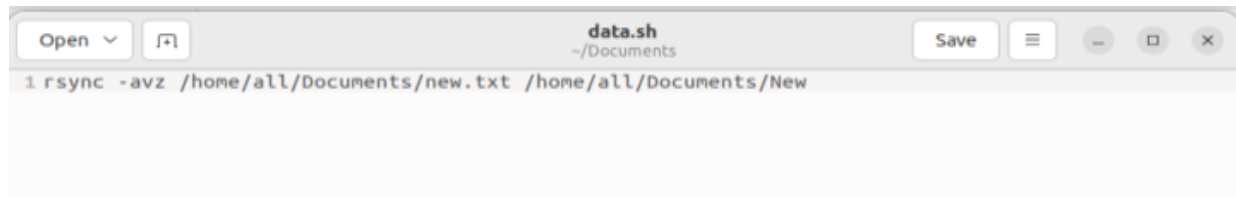
First of all, I created a bash script file (sh file is a shell script which can be executed in a terminal). In this data.sh file I write a script which is using *rsync* to copy a new.txt file from one location to other.

Command:

```
rsync -avz /home/all/Documents/new.txt /home/all/Documents/New
```

- *rsync* command is used to synchronize the files or directories between two locations, locally or remotely.
- *-a* is for archive files and it used to preserve everything like file permission, ownership, timestamps etc.
- *-v* is for verbose output and it contains information about the file being transferred.
- *-z* is used to compress the files or folders being transferred, reducing the file size and the time required for the file transfer.

- After `rsync -avz` we have the source path (the path of the file which we want to copy) and then we have the destination path (the path where we want to copy that file).



A screenshot of a nano editor window. The title bar shows "data.sh" and the file path "~/Documents". The editor contains the command: `1 rsync -avz /home/all/Documents/new.txt /home/all/Documents/New`. The window has standard window controls (Open, Save, etc.) and a menu icon.

Step #02:

After creating the `data.sh` file I have to run a command in the terminal to make the file executable.

Command:

`chmod +x /home/all/Documents/data.sh`

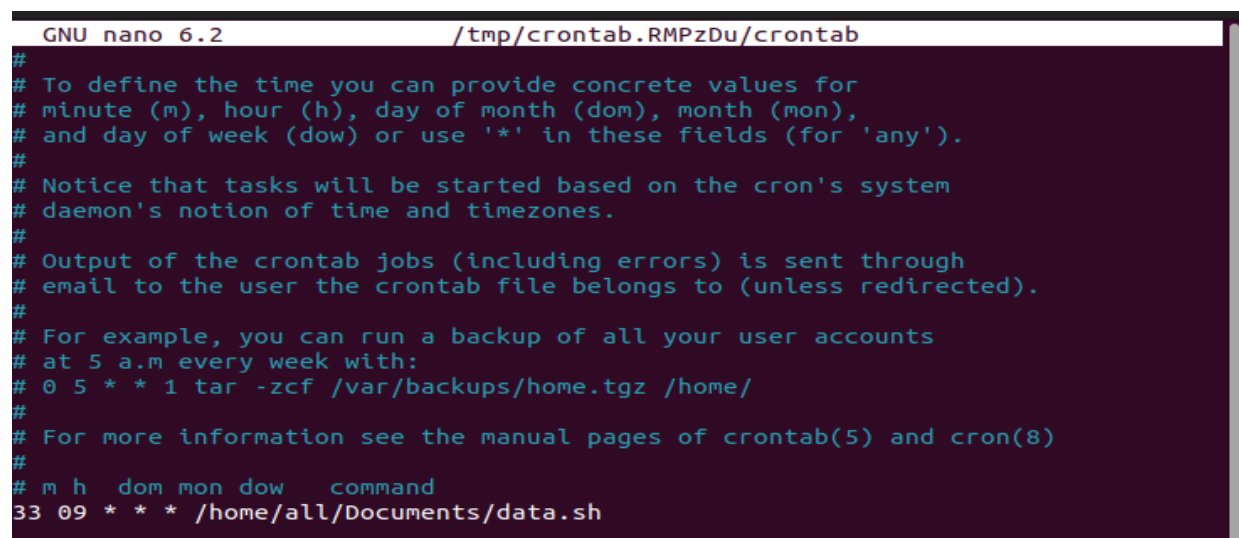
- `chmod` is used to modify the permission for the file.
- `+x` adds the execute permission to the file so that it can run the script.
- And then I mention the path of the `data.sh` file.

Step #03:

After making the `data.sh` file executable I open the crontab configuration file by using the following command:

- **`crontab -e`**

`Cron` is a system daemon used to execute tasks at designated times.



A screenshot of a terminal window showing the `crontab` configuration file. The title bar indicates "GNU nano 6.2" and the file path "/tmp/crontab.RMPzDu/crontab". The content of the file is as follows:

```
#
# 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.
#
# 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
33 09 * * * /home/all/Documents/data.sh
```

In the crontab configuration file I mentioned the time of the rsync command by using the following command: The time could be given using the following syntax:

- **minute hour day_of_month month day_of_week command_to_run**

Command:

```
33 09 * * * /home/all/Documents/data.sh
```

- 33 09 * * * is the time at which we want the crontab to perform the task mentioned in the data.sh file. I only mentioned minute and hour (33-minute, 09 hour). It means that it will copy the file at 09:33.
- Then there is a path of the data.sh file.
- Save the command and exit the crontab.

Final Result:

