

Set home space quota for users

Set the quota (sudo apt install quota)

<https://www.digitalocean.com/community/tutorials/how-to-set-filesystem-quotas-on-ubuntu-18-04>

- a. cat /proc/mounts | grep "/home" (check the partition name of the /home)
NOTE: Your mountpoint could be different from /home (e.g. "/") – Change the following commands accordingly.
- b. sudo vi /etc/fstab (Change the defaults to usrquota,grpquota (without spaces))
- c. sudo mount -o remount /home
- d. sudo quotacheck -ugm /home
- e. sudo quotaon -v /home
- f. sudo setquota -t 604800 604800 /home
- g. sudo repquota -s /home (check status)

bash add_user.sh <USERNAME>

Before running the add_user script for the first time. Not required next time onwards.

[sudo groupadd devel](#)

[sudo mkdir /DATA/scratch](#)

[sudo setfacl -Rm g:devel:x /DATA/scratch](#)

Create users and set scratch space for them: Set quota before doing this.

```
#!/bin/bash
```

```
USERNAME=$1
```

```
GROUPNAME=devel
```

```
SCRATCH=/DATA/scratch
```

```
sudo adduser $USERNAME
```

```
sudo groupadd "$USERNAME"_home
```

```
sudo usermod -aG $GROUPNAME $USERNAME
```

```
sudo usermod -aG "$USERNAME"_home $USERNAME
```

```
#sudo groupadd \$GROUPNAME
```

```
#sudo setfacl -Rm g:$GROUPNAME:x $SCRATCH
sudo mkdir $SCRATCH/$USERNAME
sudo setfacl -m $USERNAME:rwX $SCRATCH/$USERNAME/
sudo chown -R $USERNAME:$USERNAME $SCRATCH/$USERNAME/
```

```
cd /home/$USERNAME
sudo ln -s $SCRATCH/$USERNAME scratch
sudo chown -R $USERNAME:$USERNAME scratch
```

```
cd /home
sudo chgrp "$USERNAME"_home /home/$USERNAME
sudo chmod g+s /home/$USERNAME
sudo setquota -g "$USERNAME"_home 35G 50G 0 0 /
sudo setquota -u $USERNAME 0 0 0 0 /
sudo setquota -g $USERNAME 0 0 0 0 /
```

```
sudo setfacl -Rm g:$USERNAME:r /home/$USERNAME/
```

Description

- Put users to devel group (secondary)
- Put users to <username>_home group (secondary)
- Assign execute permission of /home/scratch to devel group
- Create user's scratch folder in the /home/scratch
- Set permission, ownership to user:user (primary group)
- Create a soft link to scratch in the user's home
- Change permission and ownership to user and primary group
- Change the user's home folder to group <username>_home
- Assign permissions g+s to the user's home
- Set group quota on <username>_home to restrict the home size
- Remove user quota on username (so that user can keep adding in scratch)
- Finally, use the cron job periodically to reset group ownership of all home folder content to <username>_home (this is required as no quota is placed on the primary group)

Create a scratch folder and give permission

1. Create a user group (only for the first time)

sudo groupadd GROUPNAME

2. sudo adduser USERNAME

3. Add user to the group

sudo usermod -aG GROUPNAME USERNAME

4. Set execute permission for users in scratch

sudo setfacl -Rm g:GROUPNAME:x /home/scratch/

5. Create the user's directory in scratch

sudo mkdir /home/scratch/USERNAME

6. Give user the permission to access designated directory

sudo setfacl -Rm USERNAME:rwX /home/scratch/USERNAME/

7. Change ownership of the user's directory?

sudo chown -R USERNAME:USERNAME /home/scratch/USERNAME/

8. Set a softlink in user's home folder

a. cd /home/USERNAME

b. sudo ln -s /home/scratch/USERNAME scratch

9. Change ownership of the user's directory?

sudo chown -R USERNAME:USERNAME scratch/

Note: See the scripts in the 2nd page

IN CASE some user bypasses the user_home quota by setting group to user in /home directory:

Cron job (Once every month?) - To set all home folder contents to group "\$user"_home

```
#!/bin/bash
```

```
list=`members devel`
for user in $list
do
    cd /home/$user
    sudo chown -R $user:"$user"_home $(ls | awk '{if($1 != "scratch"){ print $1 }}')
done
```

ADD NEW DISKS

1. Do lsblk to verify the partition name for the 3.7T disk - sdXY
2. sudo mkfs.ext4 /dev/sdXY (e.g. /dev/sda1 or /dev/sdb)
3. sudo mkdir /DATA (DATA is the mountpoint name)
4. sudo vi /etc/fstab
 - a. Add the following line:

```
/dev/sdXY    /DATA ext4    defaults    0    0
```
5. sudo mount /DATA

ADD a new Disk with Another scratch volume

1. NEWSRATCH=/DATA2/scratch
2. sudo mkdir \$NEWSRATCH
3. sudo setfacl -Rm g:devel:x \$NEWSRATCH
4. list=`members devel`
for user in \$list
do
 cd /home/\$user
 sudo ln -s \$SCRATCH/\$user scratch2
 sudo chown -R \$user:\$user scratch2

done

CUDA

1. `sudo apt-get remove --purge '^nvidia-.*'` (delete completely for package)

USEFUL COMMANDS

1. `id <USERNAME>` to get the userid
2. `sudo pkill -9 -u <USERID>` to remove all running processes of an USER
3. `cmake` and `ccmake` → `sudo apt-get install cmake-curses-gui`
4. `ffmpeg` → `sudo apt install ffmpeg`
5. Change date time → `sudo date new_date_time_string`

where `new_date_time_string` has to follow the format `MMDDhhmmYYYY.ss` which is described below:

MM is a two digit month, between 01 to 12

DD is a two digit day, between 01 and 31, with the regular rules for days according to month and year applying

hh is two digit hour, using the 24-hour period so it is between 00 and 23

mm is two digit minute, between 00 and 59

YYYY is the year; it can be two digit or four digit

ss is two digit seconds. Notice the period . before the ss.

`sudo date 121115432021.45`

6. Add user with existing home directory

`# sudo adduser --home /home/bob bob`

`# sudo chown -R bob:bob /home/bob`

7. List sizes of all sub-directory:

`# sudo du -d 1 -h`

8. Clean up /tmp directory `sudo find /tmp -type f -atime +10 -delete`

9. Check resources:

a. `lshw -c cpu`

b. `lshw -c power`

c. `lshw -c memory`

Set up Demo Server

- <https://faun.pub/how-to-set-up-conda-virtual-environments-with-apache-mod-wsgi-flask-c2043711223e>
- <https://roytuts.com/upload-and-display-image-using-python-flask/>
- <https://www.educba.com/flask-get-post-data/>
- *Install everything including torch, torchvision, flask using pip wheel
- Use Get/Post in the same url resource
- <https://www.ionos.com/digitalguide/server/configuration/password-protect-a-directory-with-apache/>
- <https://www.digitalocean.com/community/tutorials/how-to-add-authentication-to-your-app-with-flask-login>
- <https://www.freecodecamp.org/news/how-to-authenticate-users-in-flask/>
- <https://medium.com/analytics-vidhya/part-1-deploy-flask-app-anaconda-gunicorn-nginx-on-ubuntu-4524014451b>
- <https://medium.com/analytics-vidhya/part-2-deploy-flask-app-anaconda-gunicorn-nginx-on-ubuntu-b12fc4199c59>
- <https://medium.com/swlh/mini-project-deploying-python-application-with-nginx-30f9b25b195>
- <https://aienthusiasts.com/deploy-multiple-flask-applications/>
- <https://stackoverflow.com/questions/39769963/nginx-reverse-proxy-multiple-api-on-different-ports>
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Compile bibtex and pdflatex

pdflatex myfile

bibtex myfile

pdflatex myfile

pdflatex myfile

/home (2TB ~1.8T)

- **User 1 (35G)**
- **User 2**
-

/DATA (mounted on a different disk 8TB ~7T)

Scratch

- **User 1**
- **User 2**
- **User 3**

/DATA/scratch/username → /home/username/scratch