
Contents

QUOTA

Idea (Quota)

Creating a user (joan)

Creating a group (students)

Activate the quota system

Kernel Configuration

File `/etc/rc.d/rc.sysinit`

Enabling user or group quota support - file `/etc/fstab`

soft and hard limits; grace period

Assigning quota for user joan

Assigning quota for user arqu

Assigning quota for group students

quotacheck and quota

repquota

CROND

Idea (Quota)

- Quota allows you to specify limits on two aspects of disk storage:
 - The number of disk blocks that may be allocated to a user or a group of users.
 - The number of inodes a user or a group of users may possess.
- Debian: s'ha d'instal·lar el paquet `quota`

```
# apt-get install quota
```

Creating a user (joan)

1. `# useradd joan`
2. `# chown -R joan:joan /home/joan`
`// set the /home/joan owner and group to joan`
3. `# passwd joan` `// set the passwd`
4. Edit `/etc/passwd` and `/etc/shadow` to see if all is correct.
5. `# userdel joan` to erase user joan

Creating a group (students)

1. `# groupadd students`

2. Edit `/etc/group` and modify the line:

```
students:x:504:joan,arqui
```

3. Edit `/etc/gshadow` and modify the line:

```
students:::joan,arqui
```

4. `# groupdel students` to erase group students

Activate the quota system

- Compile the kernel with Quota support.
- Activate the quota software. You have to reboot the system.
- The new kernel with quota support will be loaded and the startup script Red Hat (`/etc/rc.d/rc.sysinit`) or Debian (`/etc/init.d/quota`) will execute:
 - `quotacheck`: updates quota databases.
 - `quotaon`: turns on quota accounting. `quotaoff`: turns it off.
- The filesystems with quota support are specified in `/etc/fstab`.

Kernel Configuration

File systems

File systems

<input checked="" type="checkbox"/> y	<input type="checkbox"/> -	<input type="checkbox"/> n	Quota support	Help
<input type="checkbox"/> y	<input type="checkbox"/> m	<input checked="" type="checkbox"/> n	Old quota format support	Help
<input checked="" type="checkbox"/> y	<input type="checkbox"/> m	<input type="checkbox"/> n	VFS v0 quota format support	Help
<input type="checkbox"/> y	<input type="checkbox"/> -	<input checked="" type="checkbox"/> n	Compatible quota interfaces	Help
Original			Compatible quota interfaces	Help
<input type="checkbox"/> y	<input type="checkbox"/> m	<input checked="" type="checkbox"/> n	Kernel automounter support	Help
<input type="checkbox"/> y	<input checked="" type="checkbox"/> m	<input type="checkbox"/> n	Kernel automounter version 4 support (also supports v3)	Help

Main Menu Next Prev

File `/etc/init.d/quota`

Aquest fitxer conté algo paregut a:

```
if [ -x /usr/sbin/quotacheck ] # true (0) if file exists and is executable
```

```
then
```

```
    echo "Checking quotas. This may take some time. "
```

```
    /usr/sbin/quotacheck
```

```
    echo " Done."
```

```
fi
```

```
if [ -x /usr/sbin/quotaon ]
```

```
then
```

```
    echo "Turning on quota."
```

```
    /usr/sbin/quotaon -a
```

```
fi
```

Enabling user or group quota support

- file /etc/fstab -

- To enable user quota support on a file system, add "usrquota":

```
/dev/hda2      /          ext2  defaults              0  1
/dev/hdb1      /home/arqui ext2  defaults,usrquota    0  1
/dev/hdb2      /home/joan  ext2  defaults,usrquota    0  1
```

- If you need group quota support on a file system, add "grpquota":

```
/dev/hda2      /          ext2  defaults              0  1
/dev/hdb       /home      ext2  defaults,grpquota    0  1
```

soft and hard limits; grace period

- **"soft limit"** indicates the maximum amount of disk usage a quota user has on a partition. Combined with ***grace period***, when passed (the soft limit), the user is informed with a quota violation warning.
- **"hard limit"** It specifies the absolute limit on the disk usage.
- **"grace period"** if the soft limit is passed, the grace period will be the elapsed time before deny to write. **Viewing/modifying** grace periods:

```
# edquota -t
```

```
Grace period before enforcing soft limits for users:
```

```
Time units may be:  days, hours, minutes, or seconds
```

Filesystem	Block grace period	Inode grace period
/dev/hdb1	7days	7days
/dev/hdb2	7days	7days

Assigning quota for user joan

- `cd /home; touch aquota.user`

Creates the file `/home/aquota.user`

- `# quotacheck -u`

- **Edit** quotas for joan [in a particular filesystem]

`# edquota -u joan [-f /home/joan]`

Disk quotas for user joan (uid 502):

Filesystem	blocks	soft	hard	inodes	soft	hard
/dev/hdb1	0	0	0	0	0	0
/dev/hdb2	76	8000	96000	15	0	0

Note: "`# edquota`" takes me into the `vi` editor (change editor with the `$EDITOR` environment variable). "**blocks**" are in KB. There are 76 blocks and 15 inodes assigned to user joan in hdb2.

Assigning quota for user arquí

- One of both:

1. `# edquota -u arquí`

Disk quotas for user arquí (uid 503):

Filesystem	blocks	soft	hard	inodes	soft	hard
/dev/hdb1	72	7000	8000	14	0	0
/dev/hdb2	0	0	0	0	0	0

2. Assigning joan's quota to the remaining users:

```
# edquota -p joan arquí [francesc ....]
```

Assigning quota for group students

- `cd /home`
- `touch aquota.group`
- `# quotacheck -g`
- **Edit** quotas for `students` [in a particular filesystem]
- `# edquota -g students`

Disk quotas for group students (gid 504):

Filesystem	blocks	soft	hard	inodes	soft	hard
/dev/hdb1	72	9500	10000	14	0	0
/dev/hdb2	76	9500	10000	15	0	0

Note: takes me again into the vi editor

quotacheck **and** quota

- quotacheck **updates the quota accounting (updates files aquota.user and aquota.group in each filesystem with quota activated).**

```
# quotaoff    // turn quota accounting off
# quotacheck -u  // for users only in all filesystems
# quotacheck -g  // for users and groups in all filesystems
# quotaon -a    // turn quota accounting on
```

- **See** joan's quota information

```
# quota -u joan
```

Disk quotas for user joan (uid 502):

Filesystem	blocks	quota	limit	grace	files	quota	limit	grace
/dev/hdb2	76	8000	9600		15	0	0	

Note: inodes **and** files are equivalent terms

repquota 1/2

- repquota producing a summarized **user** quota information.

```
# repquota -u
```

```
*** Report for user quotas on device /dev/hdb1
```

```
Block grace time: 7days; Inode grace time: 7days
```

			Block limits					File limits		
User		used	soft	hard	grace	used	soft	hard	grace	
root	- -	16	0	0		2	0	0		
arqui	- -	72	7000	8000		14	0	0		

```
*** Report for user quotas on device /dev/hdb2
```

```
Block grace time: 7days; Inode grace time: 7days
```

			Block limits					File limits		
User		used	soft	hard	grace	used	soft	hard	grace	
root	- -	16	0	0		2	0	0		
joan	- -	76	8000	9600		15	0	0		

repquota 2/2

- repquota producing a summarized **group** quota information.

```
# repquota -g
```

```
*** Report for group quotas on device /dev/hdb1
```

```
Block grace time: 7days; Inode grace time: 7days
```

		Block limits			File limits			
Group	used	soft	hard	grace	used	soft	hard	grace
root - -	16	0	0		2	0	0	
students - -	72	9500	10000		14	0	0	

```
*** Report for group quotas on device /dev/hdb2
```

```
Block grace time: 7days; Inode grace time: 7days
```

		Block limits			File limits			
User	used	soft	hard	grace	used	soft	hard	grace
root - -	16	0	0		2	0	0	
students - -	76	9500	10000		15	0	0	

- **Idea:** daemon which executes commands periodically. P.e.: quotacheck

- **File** /etc/crontab:

```
# setting environment variables

SHELL=/bin/bash

PATH=/sbin:/bin:/usr/sbin:/usr/bin

MAILTO=root HOME=/

# run-parts

0 * * * * root run-parts /etc/cron.hourly
0 1 * * * root run-parts /etc/cron.daily
0 1 * * 0 root run-parts /etc/cron.weekly
0 2 1 * * root run-parts /etc/cron.monthly
```

cron.* are directories containing scripts to be executed hourly, daily, weekly or monthly

Note: run-parts execute all the scripts in a directory

crond 2/3

/etc/crontab contains 8 fields:

#	description	range
1	minute	0-59
2	hour	0-23
3	day of month	1-31
4	month	1-12
5	day of week 0-6	0 or 6 (Sun)
6	user	
7	reserved word run-parts or command	
8	scripting directory or empty	

- Matching:
 - A field may be an asterisk (*), which always stands for “first-last”.

crond 3/3

- Example (running `quotacheck` weekly). One of both:
 1. add the following script in the directory `/etc/cron.weekly`:

```
/sbin/quotacheck -g && exit 0
```
 2. add the following line in `/etc/crontab`:

```
0 1 * * 0 root /sbin/quotacheck -g
```