

# – LPI 102 –

## Setup User Level Security [2]

(Linux Professional Institute Certification)

a

```
.~.      Slides for a talk by Pia Smith
/V\
//  \\  
@._.@   geoffrey robertson
         geoffrey@zip.com.au
```

```
$Id: gl2.114.3.slides.tex,v 1.4 2003/08/29 14:36:14 waratah Exp $
```

---

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## Setup User Level Security [2]

### Objective

Candidate should be able to configure user level security. Tasks include limits on user logins, processes, and memory usage.

# Setup User Level Security [2]

## Key files, terms, and utilities

quota

usermod

# Setup User Level Security [2]

Resources of interest

TBA

# Set and View Disk Quotas

## Enabling Quotas

- Add the `userquota` and `grpquota` options in `/etc/fstab`:

```
/dev/hda2 /home ext3 defaults,usrquota,grpquota 1 2
```

# Set and View Disk Quotas

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- Create the `quota.user` and `quota.group` files:

```
fehung:~# touch /home/quota.user /home/quota.group
```

```
fehung:~# chmod 600 /home/quota.user /home/quota.group
```

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```
fehung:~# chmod 600 /home/quota.user /home/quota.group
```

- Initialise the `quota.*` files as databases by running `quotacheck`:

```
fehung:/home# quotacheck -augv
```

```
Cannot get exact used space... Results might be inaccurate
```

```
quotacheck: Scanning /dev/hda2 [/home] done
```

```
quotacheck: Checked 143 directories and 689 files
```

# Set and View Disk Quotas

## Enabling Quotas *ctd...*

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fehung:/home# quotaon -a
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  2. Check the data base regularly. (details next slide)

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fehung:/home# quotaon -a
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- There are two further things to deal with:
  1. Turn on quota is turned at boot time. (details next slide)
  2. Check the data base regularly. (details next slide)
- The filesystem (in this case `/home`) is now ready to accept quotas on a per user or group basis.

# Set and View Disk Quotas

## Initialising Quotas when booting

To ensure quota is turned on upon system boot, add the following to the system's initialisation script (`/etc/rc.d/rc.sysinit` or similar):

```
if [ -x /sbin/quotacheck ]; then
    echo "Checking quotas."
    /sbin/quotacheck -auvg
    echo "Done."
fi
```

```
if [ -x /sbin/quotaon ]; then
    echo "Enabling quotas."
    /sbin/quotaon -avug
fi
```

## Set and View Disk Quotas

### Check the Quota database Regularly with cron

To ensure that the databases are checked regularly, add a script to one of the crontab system directories, (such as `/etc/cron.weekly/`) to run `quotacheck`:

```
#!/bin/bash  
/sbin/quotacheck -auvg
```

or a job in crontab to achieve the same thing.

# Set and View Disk Quotas

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- Per-user hard limit
- Per-group hard limit
- Per-user soft limit
- Per-group soft limit
- Grace Period

# Set and View Disk Quotas

## Quota Limits—Per-user hard limit

This is the absolute maximum of a users allocated space, once reached the user cannot write anything else to the filesystem, and the currently worked upon file if saved is truncated and useless. The user doesn't lose what is in the current shell, so they can free up some space and then save the file.

# Set and View Disk Quotas

## Quota Limits—Per-group hard limit

This is the absolute maximum of a groups allocated space, once reached the group cannot write anything else to the filesystem, and the currently worked upon file if saved is truncated and useless. Users in the group don't lose what is in the current shell, so they can free up some space and then save the file.

# Set and View Disk Quotas

## Quota Limits—Per-user soft limit

An abstract limit enforced on users that is less than the hard limit, and once reached, the user enters the grace period. After the soft limit has been reached the user starts getting warnings printed on the terminal that the quota has been exceeded.

# Set and View Disk Quotas

## Quota Limits—Per-group soft limit

An abstract limit enforced on groups that is less than the hard limit, and once reached, the group enters the grace period. After the soft limit has been reached the group starts getting warnings printed on the terminal that the quota has been exceeded.



# Set and View Disk Quotas

## Quota Limits—Grace Period

Once a soft limit has been reached the user/group enters the grace period which is an abstract time before the hard limit is enforced, regardless of whether the hard limit is reached (assuming the user doesn't get their quota down below the soft limit in that time).

# Set and View Disk Quotas

## Setting up and configuring quotas

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- We can actually edit the quota of a typical user on our system and then copy the attributes of that users quota to other users, as follows:

```
fehung:/home/greebo# edquota greebo
```

# Set and View Disk Quotas

## Setting up and configuring quotas

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- We can actually edit the quota of a typical user on our system and then copy the attributes of that users quota to other users, as follows:

```
fehung:/home/greebo# edquota greebo
```

- This edits the quota for user greebo, in this file we change the soft and hard limits to whatever we choose, example:

```
Disk quotas for user greebo (uid 1000):
```

Filesystem	blocks	soft	hard	inodes	soft	hard
/dev/hda2	538	29000	30000	689	0	0

# Set and View Disk Quotas

## Configuring Quotas

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- We can then attribute these settings to the rest of the users thus:

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fehung:/home/greebo# edquota -p greebo $(awk -F: '$3 > \
999 { print $1 }' /etc/passwd)
```

and can confirm this worked by running

```
# edquota <randomuser> ←
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to see whether the new settings copied across.

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- We can only modify the grace limit system wide. We do this by running # **edquota -tu** ↵ , and changing the value.

# Set and View Disk Quotas

## Quota commands: `quota(1)`

`quota` is used to display quotas on users and groups, using the `-u` switch for users and `-g` switch for groups:

```
fehung:/home# quota -uv greebo ↵
```

```
Disk quotas for user greebo (uid 1000):
```

Filesystem	blocks	quota	limit	grace	files	quota	limit
/dev/hda2	538	29000	30000		689	0	0



# Set and View Disk Quotas

**Quota commands: `quotaon(1)`**

`quotaon` turns on the quota system, `quotaoff` turns it off. Easy!

# Set and View Disk Quotas

## Quota commands: `repquota(1)`

`repquota` reports on the status on quotas. Common options are as follows:

- `-a` reports on all quotas
- `-g` reports on group quotas
- `-u` reports on user quotas
- `-v` verbose mode

Examples:

```
# repquota -v /home ↵
```

or

```
# repquota -a ↵
```