1.114.3 Setup user level security Weight 1

Linux Professional Institute Certification — 102

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Configuring Quotas

Viewing quotas with quota

Turning quotas on and off

repquota

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Topic 114 Security [8] Where we are up to

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1.114.1 Perform security administration tasks [4]

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Description of Objective

1.114.3 Setup user level security [1]

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

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Key files, terms, and utilities include: 1.114.3 Setup user level security [1]

quota — display disk usage and limits usermod — can modify expiry date of an account, and can disable an account

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► Add the userquota and grpquota options in

Create the quota.user and quota.group files:

► Initialise the quota. * files as databases by running

Enabling Quotas

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Enabling Quotas

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/etc/fstab:

Enabling Quotas

/dev/hda2 /home ext3 defaults, usrquota, grpquota Create the quota.user and quota.group files:

Add the userquota and grpquota options in

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

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

► Initialise the quota. * files as databases by running

fehung:/home# quotacheck -augv

Cannot get exact used space... Results might be inaccomposed acheck: Scanning /dev/hda2 [/home] done

/etc/fstab:

quotacheck:

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Enabling Quotas

/dev/hda2 /home ext3 defaults, usrquota, grpquota

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

Initialise the quota.* files as databases by running

fehung:/home# quotacheck -augv

Add the userquota and grpguota options in

Cannot get exact used space ... Results might be inaccur

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

quotacheck: Checked 143 directories and 689 files

Enabling Quotas ctd...

► Confirm that the databases have actually been initialised by making sure that the quota.* files are larger than 0.

▶ Run quotaon to enable the quota system:

fehung:/home# quotaon -a

- ▶ 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.

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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
```

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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 -auvq

or a job in crontab to achieve the same thing.

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Quota Limits

There are five types of quota limits that can be enforced:

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

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Quota Limits—Per-user hard limit

- absolute maximum of a user's allocated space
- user cannot write anything else to the filesystem when reached
- write to current file is truncated
- user can free space and save file if program has a copy of the file in memory

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Quota Limits—Per-group hard limit

- absolute maximum of a group's allocated space
- members of the group cannot write anything else to the filesystem when reached
- write to current file is truncated
- user in the group can free space and save file if program has a copy of the file in memory

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Quota Limits—Per-user soft limit

- Less than hard limit
- When reached, user enters grace period
- User gets warnings on terminal that guota has been exceeded

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Quota Limits—Per-group soft limit

- Less than hard limit
- ▶ When reached, group enters grace period
- Members of the group get warnings on terminal that quota has been exceeded

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Quota Limits—Grace Period

- Grace period is a time before the hard limit is enforced
- regardless of whether the hard limit is reached
- ... unless the user gets their quota down bleow the soft limit in that time

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The next move is to edit the quota reference for each user. We can get around this with scripts, but essentially this is not nice:)

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
```

Configuring Quotas

with edguota

-F: '\$3 >

The first soft and hard values are relevant to blocks and the second to inodes, here the user has a block soft and hard limit but no inode limit.

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

```
fehung:/home/greebo# edquota -p greebo $(awk
999 { print $1 }' /etc/passwd)
and can confirm this worked by running
$ sudo edquota ⟨randomuser⟩ ←
to see whether the new settings copied across.
```

▶ We can only modify the grace limit system wide. We do

hard limit but no inode limit.

users thus:

quota

-F: '\$3 >

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999 { print \$1 }' /etc/passwd)
and can confirm this worked by running

\$ sudo edquota ⟨randomuser⟩ ←
to see whether the new settings copied across.

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

The first soft and hard values are relevant to blocks and the second to inodes, here the user has a block soft and

We can then attribute these settings to the rest of the

Quota commands: quota (1)

 \mathtt{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
/dev/hda2 538 29000 30000 689 0
```

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Quota commands: quotaon (1)

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

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repquota

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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
- -y verbose mode

Examples: \$ sudo repquota -v /home \hookleftarrow or

\$ sudo repquota -a ←

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