Lab 2, 3 Linux Study Guide 2 Supplement

1 Exercise (1)

1. What command will determine the version number of your kernel?

    Look at the list of commands on the last slide labelled "Basic commands (27)";
    it's one of those:

    - `which`
    - `uname -a`
    - `hostname`
    - `date`
    - `date +%Y%m%d%H%M%S`
    - `df -k`
    - `du -sk dir_pathname`
    - `who`
    - `whoami`
    - `su`

2. How could you find the percentage of your root partition that is used?

    It is also one of the commands listed above.

3. Use `sudo` to `find` files under the `/etc` directory that match the following criteria:

    - Filename starting with `ta`
    - Filename starting with `ta` and filesize smaller than 100 bytes
    - Filename starting with `a` and file type is link
    - Filename starting with `a` and file owner is "`news`"

    Use the `find` command. Add the `-ls` option to print details of files found so
    that you can check whether your search worked properly or not.

    Read the manual page for `find`; discuss with your neighbour how to tackle
    each part of this.

2 Exercise (2) — 1

1. Find out the detailed file type (more than the 4 types) of following files:

    `/bin/vi`, `/bin/view`, `/etc/passwd`, `/dev/fd0`, `/dev/hda`, `/dev/isdn1`,
    `/bin/`, `/etc/rc.d/init.d/crond`, `/boot/vmlinuz-2.4.18-14`,
    `/boot/initrd-2.4.18-14.img`?

    Hint: read about the `file` command: `man file`.

2. Create a subdirectory, named `lab2_3`, under your home directory. Copy the scripts `student_cp` and `at_cron` from the network directory at /home/nfs/ossi-part-time/scripts to $HOME/lab2_3/:

```
$ cd
$ mkdir lab2_3
$ cp -a /home/nfs/ossi-part-time/scripts/student_cp lab2_3
# Now press the up-arrow key and edit the above command line so it
# looks like this:
$ cp -a /home/nfs/ossi-part-time/scripts/at_cron lab2_3
```

Run the script `student_cp`. This script will copy all files (except /bin/, /dev/fd0, /dev/hda, /dev/isdn1) in part a to directory $HOME/lab2_3.

3. after copying, how could you use one command to know the sum of filesizes of all files in $HOME/lab2_3/?

Hint: See section 1 on the preceding page; it's one of the commands listed there.

3 Exercise (2) — 2

1. $HOME/lab2_3/passwd is a file containing information of each user account with the following format:

`Username:password:uid:gid:comment:home-dir:shell-type`

2. How can you check for the existence of the usernames of the users "root", "bin", "daemon," and find out what their their uid and home directory are?

Hint: you might consider using the commands `grep` and `cut`.

3. What command can easily find the total number of accounts in file $HOME/lab2_3/passwd?

Hint: what command can count lines?

4. Copy $HOME/lab2_3/passwd to $HOME/lab2_3/passwd.new and compare these 2 files

5. modify the first and second lines of file $HOME/lab2_3/passwd.new with any editor and compare these 2 files again.

6. How could you generate a new file $HOME/lab2_3/passwd_2 which contains only username, uid, home-dir fields, separated by a vertical bar "|", for each account?

7. How could you generate another file $HOME/lab2_3/passwd_3 which is sorted by value of uid of file in part 5?

4 Exercise (3)

1. Archive all files in directory `$HOME/lab2_3/` into a single file, named "`tarfile.tar`", without compression.

2. How would you list what files are archived in "`tarfile.tar`"?

3. Create a directory `$HOME/lab2_3/extract/` and extract all files in "`tarfile.tar`" into this new directory.

4. Compress all files in `$HOME/lab2_3/extract/`

5 Exercise (4)

1. What is done by the script `at_cron`?

   (a) create a new file `$HOME/lab2_3/filesize` if this file does not exist.

   (b) Then append "`Hello...\n`" to this file.

2. Schedule script `$HOME/lab2_3/at_cron.ksh` to run at one minute later once. What is the result?

3. Redo part 2, but schedule to run at 9:10 p.m. What is the value of the job id?

4. Schedule script `$HOME/lab2_3/at_cron.ksh` to run every one minute and observe the result 2 minutes later.

5. Un-schedule what you did in part 4.