

Defensie Exercises preparing for the exam.

1. Stuur de inhoud van het bestand `/etc/passwd` naar het bestand `/tmp/gebruikers` en zorg dat het bestand `/tmp/gebruikers` gesorteerd is in omgekeerde volgorde
2. Wat is de inhoud van de variabele `TERM` en van `HISTSIZE`

3. What is the file that stores all your commands and how can you look them up.
4. List all your variables and then list all your exported variables.
5. Add the date command to the `~/.bash_profile`

Log off and log in. Does the script display the date? (Yes)

Now start a bash shell.

Is the date printed again? (No)

How can you have the date printed with each shell that you start?

6. Make sure that get a welcome message when you login?
7. View the manual pages of the `cp` command.
Is there another way to get help for the `ps` command?
8. View the filesystem type of `/dev/sda1` with 4 different commands.
9. Get a list of all loaded kernel modules.

How can you list all loadable kernel modules?

Load a kernel audio module and unload it again.

10. What is the result of the following command?

```
# find / -name "*.ko"|grep audio
```

11. Load the `snd-mia` audio module.
Check whether the module is loaded.
Unload the module again.
Check that it is unloaded.

12. List your process id in two ways.

13. List your parent process id.

14. Create a user called `tempuser`.

Switch to that user as if you login again.

Create a file called tempuser_file

Leave the shell you are in.

Remove the user but do not remove his files.

Find all file in /home that have no owner.

What is the userid of the file /home/tempuser?

What does this tell you?

(The tempuser userid was the UID was the UID that is in the files and the tempuser GID was the GID that is in the file)

15. What information is stored in the directory /etc/yum.repos.d ?

16. List the first two lines of the file /etc/passwd and only the first two lines.

17. Wat is het verschil?

```
# mkfs -t ext4 /dev/sda1  
# mkfs -t xfs /dev/sda1
```

18. Wat is het resultaat van het volgende commando?

```
# who
```

19. Wat is het resultaat van het volgende commando?

20. You are going to test the sticky bit.
Create two users: usera and userb

Switch user to usera and create a file in /tmp

Exit the shell and switch to userb

As userb, try to remove /tmp/usera_file

Exit the shell and remove the sticy bit from /tmp

Switch to userb again and try to remove the file /tmp/usera_file once more.

Exit the shell and reestablish the sticky bit on /tmp

21. Create a directory called '/tardir'

In the directory /tardir create 100 empty files with your name and a suffix of 1 to 100.

Create a tarfile of all the files in /tardir. The tarfile should have your name with the suffix .tar

Copy the file to the machine of a colleage, or to 192.168.4.229:/tmp

22. Remove your tarfile.

Create a new tarfile that is zipped as well. It should be called your name with the suffix .tar.gz

what type of information is in the file? (Use the 'file' instruction)

23. You are going to create a startup script.

If you are not root, switch user to root.

Create a script called 'bootscript' in /etc/init.d that creates an empty file called 'booted' in /tmp. And make the script executable.

Create a symbolic link to the script in /etc/rc3.d. The symbolic link is called: S99bootscript

Reboot your machine and login again

Is your file 'booted' in /tmp?
(it should be...)

24. Make sure you are root.

Create a file of 10MB called 10MB_file.

Create a file of 20MB called 20MB_file.

Use the find command to list all files in your current directory that are larger than 5MB.
You should see both files.

Use the find command to list all file in your current directory that are larger than 10MB
You should only see the 20MB file.

25. Elinks is a character based webbrowser.

Install elinks.

Install httpd

Put some text in /var/www/html/index.html

Start httpd.

Start elinks and see your welcome messages

Exit elinks.

End of exercises.

1. Stuur de inhoud van het bestand `/etc/passwd` naar het bestand `/tmp/gebruikers` en zorg dat het bestand `/tmp/gebruikers` gesorteerd is in omgekeerde volgorde

```
# cat /etc/passwd | sort -r > /tmp/gebruikers
```

2. Wat is de inhoud van de variabele `TERM` en van `HISTSIZE`

```
# echo $TERM $HISTSIZE
```

3. What is the file that stores all your commands and how can you look them up.

```
~/.bash_history      (filename for history)
history              (command to list history)
```

4. List all your variables and then list all your exported variables.

```
# set
# env
```

5. Add the `date` command to the `~/.bash_profile`

```
# echo "date" >> ~/.bash_profile
```

Log off and log in. Does the script display the date? (Yes)

Now start a bash shell.

```
# bash
Is the date printed again? (No)
```

How can you have the date printed with each shell that you start?

```
# echo "date" >> ~/.bashrc
```

6. Make sure that get a welcome message when you login?

```
# echo "welcome $LOGNAME" >> /etc/motd
```

7. View the manual pages of the `cp` command. Is there another way to get help for the `ps` command?

```
# man cp
```

```
# cp --help
```

8. View the filesystem type of `/dev/sda1` with 4 different commands.

```
# fsck -N /dev/sda1
# lsblk -f /dev/sda1
# mount | grep sda1
# blkid /dev/sda1
```

9. Get a list of all loaded kernel modules.

```
# lsmod
```

How can you list all loadable kernel modules?

```
# find /lib/modules/$(uname -r) |grep ".ko$"
```

Load a kernel audio module and unload it again.

10. What is the result of the following command?

```
# find / -name "*.xz"|grep audio  
(It list loadable audio kernel modules)
```

11. Load the snd-mia audio module.

```
# modprobe snd-mia
```

Check whether the module is loaded.

```
# lsmod |grep mia
```

Unload the module again.

```
# modprobe -r snd_mia
```

Check that it is unloaded.

```
# lsmod | grep mia
```

12. List your process id in two ways.

```
# echo $$  
# ps | grep bash
```

13. List your parent process id.

```
# echo $PPID
```

14. Create a user called tempuser.

```
# useradd -m tempuser
```

Switch to that user as if you login again.

```
# su - tempuser
```

Create a file called tempuser_file

```
$ touch tempuser_file
```

Leave the shell you are in.

```
$ exit
```

Remove the user but do not remove his files.

```
# userdel tempuser
```

Find all file in /home that have no owner.

```
# find /home -nouser
```

What is the userid of the file /home/tempuser?

```
# ls -l /home/tempuser
```

What does this tell you?

(The tempuser userid was the UID was the UID that is in the files and the tempuser GID was the GID that is in the file)

15. What information is stored in the directory /etc/yum.repos.d ?

Answer: it contains the repository config files that YUM uses to find RPMs.

16. List the first two lines of the file /etc/passwd and only the first two lines.

```
# head -2 /etc/passwd
```

17. Wat is het verschil?

```
# mkfs -t ext4 /dev/sda1  
# mkfs -t xfs /dev/sda1
```

Antwoord: je maakt een file systeem aan op sda1 het verschil is dat het ene type ext4 is en het andere type xfs.

18. Wat is het resultaat van het volgende commando?

```
# who
```

Antwoord: wie zijn er ingelogd.

19. Wat is het resultaat van het volgende commando?

```
# who | wc -l
```

Antwoord: hoeveel mensen zijn er ingelogd. Belangrijk: Je krijgt dan dus niet te zien wie dat zijn, want daar vraag je niet om.

20. You are going to test the sticky bit.
Create two users: usera and userb

```
# useradd -m usera  
# useradd -m userb
```

Switch user to usera and create a file in /tmp

```
# su usera  
$ touch /tmp/usera_file
```

Exit the shell and switch to userb

```
$ exit  
# su userb
```

As userb, try to remove /tmp/usera_file

```
$ rm /tmp/usera_file  
rm: remove write-protected regular empty file '/tmp/usera_file'? y  
rm: cannot remove '/tmp/usera_file': Operation not permitted
```

Exit the shell and remove the sticky bit from /tmp

```
$ exit
# chmod o-t /tmp
```

Switch to userb again and try to remove the file /tmp/usera_file once more.

```
# su userb
$ rm /tmp/usera_file
rm: remove write-protected regular empty file '/tmp/usera_file'? y
```

Exit the shell and reestablish the sticky bit on /tmp

```
$ exit
# chmod o+t /tmp
# ls -ld /tmp
```

(see that there is a 't' in the permissions again)

21. Create a directory called '/tardir'

```
# mkdir tardir
```

In the directory /tardir create 100 empty files with your name and a suffix of 1 to 100.

```
# cd tardir
# for i in `seq 1 100`
> do
> touch alwin_${i}
> done
```

Create a tarfile of all the files in /tardir. The tarfile should have your name with the suffix .tar

```
# tar cvf alwin.tar .
```

Copy the file to the machine of a colleague, or to 192.168.4.229:/tmp

```
# scp alwin.tar root@192.168.4.237:/tmp
```

22. Remove your tarfile.

```
# rm /tardir/alwin.tar
```

Create a new tarfile that is zipped as well. It should be called your name with the suffix .tar.gz

```
# cd /tardir
# tar zcvf alwin.tar.gz .
```

what type of information is in the file? (Use the 'file' instruction)

```
# file alwin.tar.gz
alwin.tar: gzip compressed data, from Unix
```

23. You are going to create a startup script.

If you are not root, switch user to root.

Create a script called 'bootscript' in /etc/init.d that creates an empty file called 'booted' in /tmp. And make the script executable.

```
# echo echo '#!/usr/bin/bash' > /etc/init.d/bootscript
# echo 'touch /tmp/booted' >> /etc/init.d/bootscript
# chmod a+x /etc/init.d/bootscript
```

Create a symbolic link to the script in /etc/rc3.d. The symbolic link is called: S99bootscript

```
# ln -s /etc/init.d/bootscript /etc/rc3.d/S99bootscript
```

Reboot your machine and login again

```
# shutdown -r now
```

Is your file 'booted' in /tmp?
(it should be...)

24. Make sure you are root.

Create a file of 10MB called 10MB_file.

Create a file of 20MB called 20MB_file.

```
# dd if=/dev/zero of=10MB_file bs=1024 count=10000
# dd if=/dev/zero of=20MB_file bs=1024 count=20000
```

Use the find command to list all files in your current directory that are larger than 5MB.
You should see both files.

```
# find . -size +5M
```

Use the find command to list all file in your current directory that are larger that 10MB
You should only see the 20MB file.

```
# find . -size +10M
```

25. Elinks is a character based webbrowser.

Install elinks.

```
# yum install -y elinks
```

Install httpd

```
# yum install -y httpd
```

Put some text in /var/www/html/index.html

```
# echo "Hello Welcome" > /var/www/html/index.html
```

Start httpd.

```
# systemctl start httpd
```

Start elinks and see your welcome messages

```
# elinks http://localhost
```

Exit elinks.