Lesson 4

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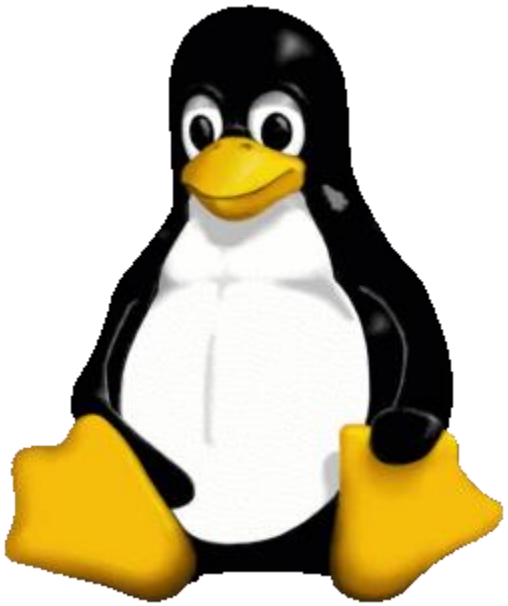
GNU/Linux

Working with file contents



head

You can use head to display the first ten lines of a file.

```
am@am-UBOX  ~ $ head /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/bin/sh
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/bin/sh
man:x:6:12:man:/var/cache/man:/bin/sh
lp:x:7:7:lp:/var/spool/lpd:/bin/sh
mail:x:8:8:mail:/var/mail:/bin/sh
news:x:9:9:news:/var/spool/news:/bin/sh
```

head -*cn*

And head can also display the first n Characters.

```
am@am-UBOX  ~ $ head -c14 /etc/passwd
root:x:0:0:roo am@am-UBOX  ~ $
```

head -*n*

The head command can also display the first n lines of a file.

```
am@am-UBOX  ~ $ head -4 /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/bin/sh
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
```

tail (-n)

Similar to head, the tail command will display the last ten lines of a file.

```
am@am-UBOX  ~ $ head -4 /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/bin/sh
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
```

echo

Input a line of text and display it

```
$ echo Hello

Hello
```

echo

Declare a variable and display its value

```
$ x=10
$ echo The value of variable x = $x
The value of variable x = 10
```

echo

Can be used with redirect operator ‘>’ to output to a file

```
 $ echo "Test Page" > testpage
## Check Content
avi@tecmint:~$ cat testpage
Test Page
```

cat

To display a file on screen

The name is derived from its function to concatenate files

The cat command is one of the most universal tools, yet all it does is copy standard input to standard output. First, you can use cat to display a file on the screen.

```
am@am-UBOX  ~ $ cat /etc/resolv.conf
domain linux-training.be
search linux-training.be
nameserver 192.168.1.42
```

cat

cat is short for concatenate. One of the basic uses of cat is to concatenate files into a bigger (or complete) file.

```
am@am-UBOX ~ $ cat /etc/resolv.conf
am@am-UBOX ~ $ echo one >part1
am@am-UBOX ~ $ echo two >part2
am@am-UBOX ~ $ echo three >part3
am@am-UBOX ~ $ cat part1
one
am@am-UBOX ~ $ cat part2
two
am@am-UBOX ~ $ cat part3
three
am@am-UBOX ~ $ cat part1 part2 part3
one
two
three
am@am-UBOX ~ $ cat part1 part2 part3 >all
am@am-UBOX ~ $  cat all
one
two
three
```

cat >

You can use cat to create flat text files.

The ‘Ctrl d’ key combination will send an EOF (End of File) to the running process ending the cat command.

```
am@am-UBOX ~ $ cat > winter.txt
It is very cold today!
am@am-UBOX ~ $ cat winter.txt
It is very cold today!
am@am-UBOX ~ $
```

cat > …<< …

You can choose an end marker for cat with << as is shown in this screenshot. This construction is called directive and will end the cat command.

```
am@am-UBOX  ~ $ cat > hot.txt <<stop
> It is hot today!
> Yes it is summer.
> stop
am@am-UBOX  ~ $ cat hot.txt
It is hot today!
Yes it is summer.
```

cat

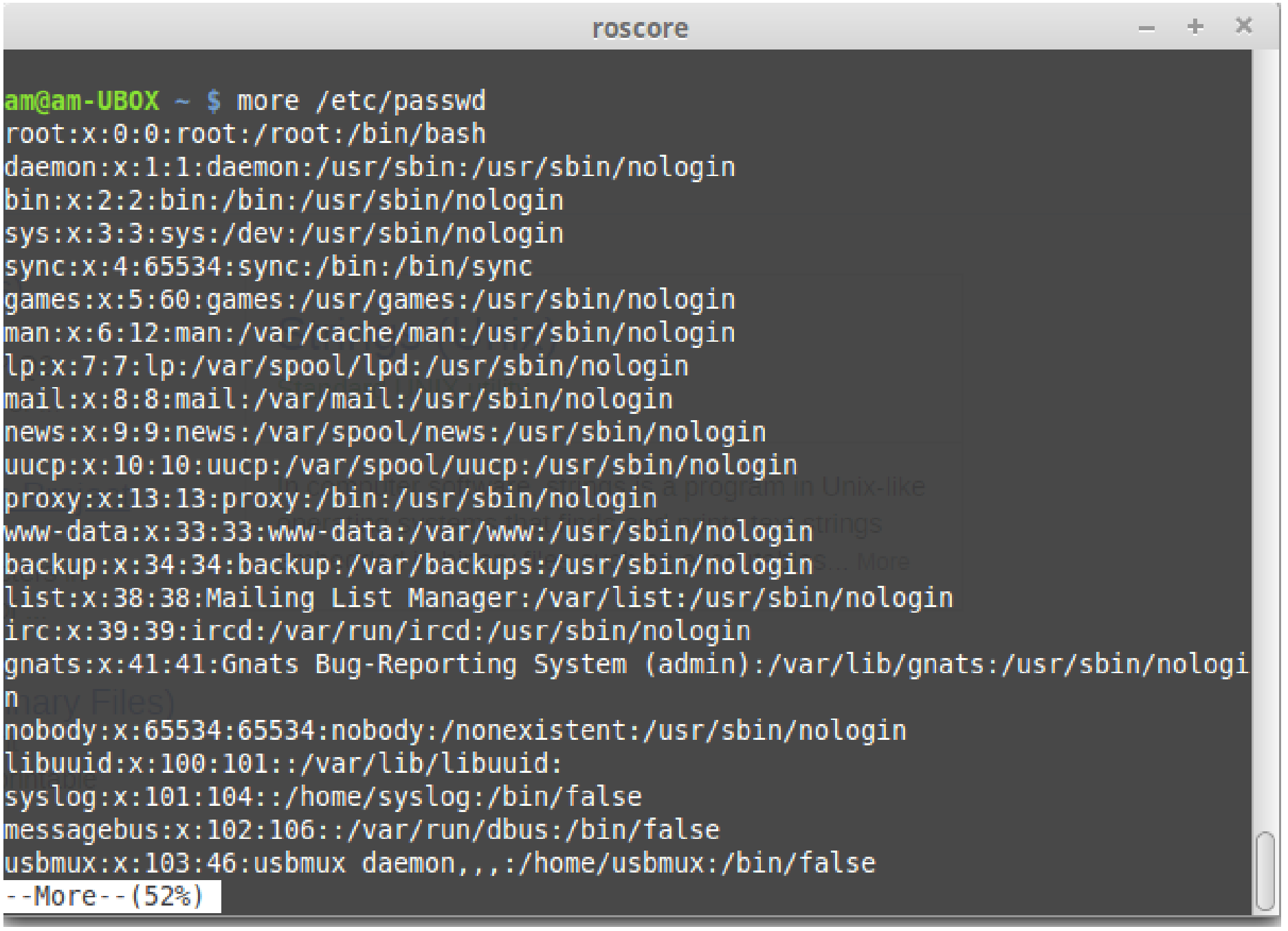
In the third example you will see that cat can be used to copy files.

```
am@am-UBOX  ~ $  cat winter.txt
It is very cold today!
am@am-UBOX  ~ $ cat winter.txt > cold.txt
am@am-UBOX  ~ $ cat cold.txt
It is very cold today!
```

more, less

The more command is useful for displaying files that take up more than one screen.

more will allow you to see the contents of the file page by page. Use the space bar to see the next page, or q to quit. Some people prefer the less command to more.


roscore
am@am-UBOX ~ $ more /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologi
n
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
libuuid:x:100:101::/var/lib/libuuid:
syslog:x:101:104::/home/syslog:/bin/false
messagebus:x:102:106::/var/run/dbus:/bin/false
usbmux:x:103:46:usbmux daemon,,,:/home/usbmux:/bin/false
--More--(52%)

String

With the strings command you can display readable ascii strings found in (binary) files.

For example, the following would display all strings in the files named *file1* and *file2* that consist of at least two characters:

strings -n 2 file1 file2

Practice – working with files

1. Display the first 12 lines of /etc/services.

```
head -12 /etc/services
```

Practice

2- Display the last line of /etc/passwd.

```
tail -1 /etc/passwd
```

Practice

3- Use cat to create a file named count.txt that looks like this:

One
Two
Three
Four
Five

```
cat > count.txt
One
Two
Three
Four
Five (followed by Ctrl-d)
```

Practice

4. Use cp to make a backup of this file to cnt.txt.

```
cp count.txt cnt.txt
```

Practice

5. Use cat to make a backup of this file to catcnt.txt.

```
cat count.txt > catcnt.txt
```

Practice

6. Display catcnt.txt, but with all lines in reverse order (the last line first).

```
tac catcnt.txt
```

Practice

7. Use more to display /etc/services.

```
more /etc/services
```

Practice

8. Display the readable character strings from the /usr/bin/passwd command.

```
strings /usr/bin/passwd
```

Practice

9. Use ls to find the biggest file in /etc.

```
ls -lrS /etc
```

```
du -Sh | sort -rh | head -n 15
```

Practice

10. Use cat to create a file named tailing.txt that contains the contents of tailing.txt followed
by the contents of /etc/passwd.

```
cat /etc/passwd >> tailing.txt
```

Practice

11. Use cat to create a file named tailing.txt that contains the contents of tailing.txt preceded
by the contents of /etc/passwd.

```
mv tailing.txt tmp.txt ; cat /etc/passwd tmp.txt > tailing.txt
```