

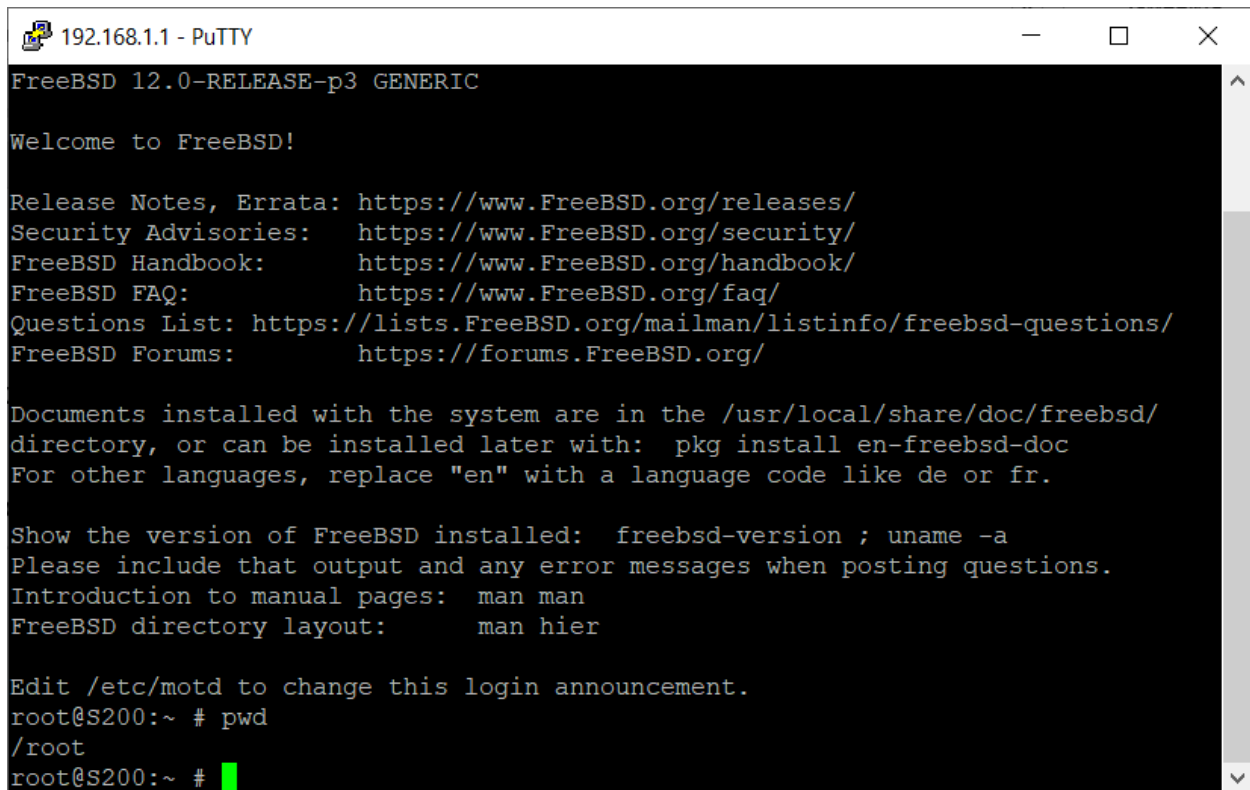
Module 4 Linux Essentials

TASK 4.3

After you have logged into the system, do the following.

1. Invoke **pwd** to see your current working directory (there should be your home directory).

I use Your (and my also – it is my Home router from old Laptop) favorite FreeBSD WS to see difference with Linux))



```
192.168.1.1 - PuTTY
FreeBSD 12.0-RELEASE-p3 GENERIC

Welcome to FreeBSD!

Release Notes, Errata: https://www.FreeBSD.org/releases/
Security Advisories:  https://www.FreeBSD.org/security/
FreeBSD Handbook:     https://www.FreeBSD.org/handbook/
FreeBSD FAQ:          https://www.FreeBSD.org/faq/
Questions List: https://lists.FreeBSD.org/mailman/listinfo/freebsd-questions/
FreeBSD Forums:       https://forums.FreeBSD.org/

Documents installed with the system are in the /usr/local/share/doc/freebsd/
directory, or can be installed later with:  pkg install en-freebsd-doc
For other languages, replace "en" with a language code like de or fr.

Show the version of FreeBSD installed:  freebsd-version ; uname -a
Please include that output and any error messages when posting questions.
Introduction to manual pages:  man man
FreeBSD directory layout:      man hier

Edit /etc/motd to change this login announcement.
root@S200:~ # pwd
/root
root@S200:~ #
```

2. Collect output of these commands

ls -l / - extended list of root (/) directory

ls - basic list of current dir

ls ~ basic list of home User dir

ls -l - extended list of current dir

```
192.168.1.1 - PuTTY
drwxr-xr-x  3 root  wheel      512 Apr 17  2019 libexec
drwxr-xr-x  2 root  wheel      512 Dec  7  2018 media
drwxr-xr-x  2 root  wheel      512 Dec  7  2018 mnt
drwxr-xr-x  2 root  wheel      512 Dec  7  2018 net
dr-xr-xr-x  2 root  wheel      512 Dec  7  2018 proc
drwxr-xr-x  2 root  wheel     2560 Apr 17  2019 rescue
drwxr-xr-x 10 root  wheel      512 Mar  2 17:25 root
drwxr-xr-x  2 root  wheel     2560 Apr 17  2019 sbin
lrwxr-xr-x  1 root  wheel       11 Dec  7  2018 sys -> usr/src/sys
drwxrwxrwt  9 root  wheel      512 Apr 16 04:04 tmp
drwxr-xr-x 16 root  wheel      512 Apr 17  2019 usr
drwxr-xr-x 24 root  wheel      512 Apr  9 22:05 var
root@S200:~ # ls
.bash_history  .history      .local        .ssh
.cache         .homeassistant .login        .subversion
.config        .k5login      .profile      backup
.cshrc        .lessshst    .rnd          mi_wifi_backup
root@S200:~ # ls ~
.bash_history  .history      .local        .ssh
.cache         .homeassistant .login        .subversion
.config        .k5login      .profile      backup
.cshrc        .lessshst    .rnd          mi_wifi_backup
root@S200:~ # ls -l
total 92
-rw-----  1 root  wheel    2156 Sep 17  2015 .bash_history
drwx-----  4 root  wheel     512 Apr 17  2019 .cache
drwx-----  3 root  wheel     512 Mar  7  2014 .config
-rw-r--r--  2 root  wheel     951 Dec  7  2018 .cshrc
-rw-----  1 root  wheel   30495 Mar  2 17:25 .history
drwxr-xr-x  3 root  wheel     512 Apr 17  2019 .homeassistant
-rw-r--r--  1 root  wheel     149 Dec  7  2018 .k5login
-rw-----  1 root  wheel     126 Oct 31 22:33 .lessshst
drwx-----  3 root  wheel     512 Mar  7  2014 .local
-rw-r--r--  1 root  wheel     392 Dec  7  2018 .login
-rw-r--r--  2 root  wheel     470 Dec  7  2018 .profile
-rw-----  1 root  wheel    1024 Mar 13  2015 .rnd
drwx-----  2 root  wheel     512 Apr  9  2015 .ssh
drwxr-xr-x  3 root  wheel     512 Mar 13  2015 .subversion
drwxr-xr-x  3 root  wheel     512 Apr 16  2019 backup
drwxr-xr-x  2 root  wheel     512 Aug  4  2015 mi_wifi_backup
root@S200:~ #
```

ls -a – list of all files (including .*) of current dir

ls -la - extended list of all files of current dir

```
192.168.1.1 - PuTTY
drwxr-xr-x  3 root  wheel   512 Apr 16  2019 backup
drwxr-xr-x  2 root  wheel   512 Aug  4  2015 mi_wifi_backup
root@S200:~ # ls -lad
drwxr-xr-x 10 root  wheel   512 Mar  2 17:25 .
root@S200:~ # ls -la
total 100
drwxr-xr-x 10 root  wheel   512 Mar  2 17:25 .
drwxr-xr-x 19 root  wheel  1024 Apr  9 19:06 ..
-rw-----  1 root  wheel  2156 Sep 17  2015 .bash_history
drwx-----  4 root  wheel   512 Apr 17  2019 .cache
drwx-----  3 root  wheel   512 Mar  7  2014 .config
-rw-r--r--  2 root  wheel   951 Dec  7  2018 .cshrc
-rw-----  1 root  wheel 30495 Mar  2 17:25 .history
drwxr-xr-x  3 root  wheel   512 Apr 17  2019 .homeassistant
-rw-r--r--  1 root  wheel   149 Dec  7  2018 .k5login
-rw-----  1 root  wheel   126 Oct 31 22:33 .lessht
drwx-----  3 root  wheel   512 Mar  7  2014 .local
-rw-r--r--  1 root  wheel   392 Dec  7  2018 .login
-rw-r--r--  2 root  wheel   470 Dec  7  2018 .profile
-rw-----  1 root  wheel  1024 Mar 13  2015 .rnd
drwx-----  2 root  wheel   512 Apr  9  2015 .ssh
drwxr-xr-x  3 root  wheel   512 Mar 13  2015 .subversion
drwxr-xr-x  3 root  wheel   512 Apr 16  2019 backup
drwxr-xr-x  2 root  wheel   512 Aug  4  2015 mi_wifi_backup
root@S200:~ # ls -a
.                .config          .k5login         .profile         backup
..               .cshrc           .lessht         .rnd             mi_wifi_backup
.bash_history    .history         .local          .ssh
.cache           .homeassistant  .login          .subversion
root@S200:~ #
```

ls -lda ~ “-d Directories are listed as plain files (not searched recursively)” - strange command – like pwd output)

```
192.168.1.1 - PuTTY
default if --color is specified without an argument.

auto will make ls output escape sequences based on termcap(5),
but only if stdout is a tty and either the -G flag is specified
or the COLORTERM environment variable is set and not empty.

never will disable color regardless of environment variables.

For compatibility with GNU coreutils, ls supports yes or force as
equivalent to always, no or none as equivalent to never, and tty
or if-tty as equivalent to auto.

-d    Directories are listed as plain files (not searched recursively).

-f    Output is not sorted.  This option turns on -a.  It also negates
the effect of the -r, -S and -t options.  As allowed by IEEE Std
1003.1-2001 ("POSIX.1"), this option has no effect on the -d, -l,
-R and -s options.

-g    This option has no effect.  It is only available for
compatibility with 4.3BSD, where it was used to display the group
name in the long (-l) format output.  This option is incompatible
with IEEE Std 1003.1-2001 ("POSIX.1").

-h    When used with the -l option, use unit suffixes: Byte, Kilobyte,
root@S200:~ # ls -lad
drwxr-xr-x 10 root  wheel  512 Mar  2 17:25 .
root@S200:~ # ls -lad ~
drwxr-xr-x 10 root  wheel  512 Mar  2 17:25 /root
root@S200:~ #
```

Note differences between produced outputs. Describe (in few words) purposes of these commands.

3. Execute and describe the following commands (store the output, if any):

mkdir test "create dir test in current dir"

cd test "change dir to test"

pwd "show current dir"

touch test.txt "create empty file test.txt"

ls -l test.txt "long format info about file test.txt"

mkdir test2 "create dir test2 in test1"

mv test.txt test2 "move file test.txt to test2 dir"

cd test2 "change dir to test2"

ls "list files of dir test2"

mv test.txt test2.txt "move file test.txt to test2.txt (change the name)"

ls "list dir in basic format"

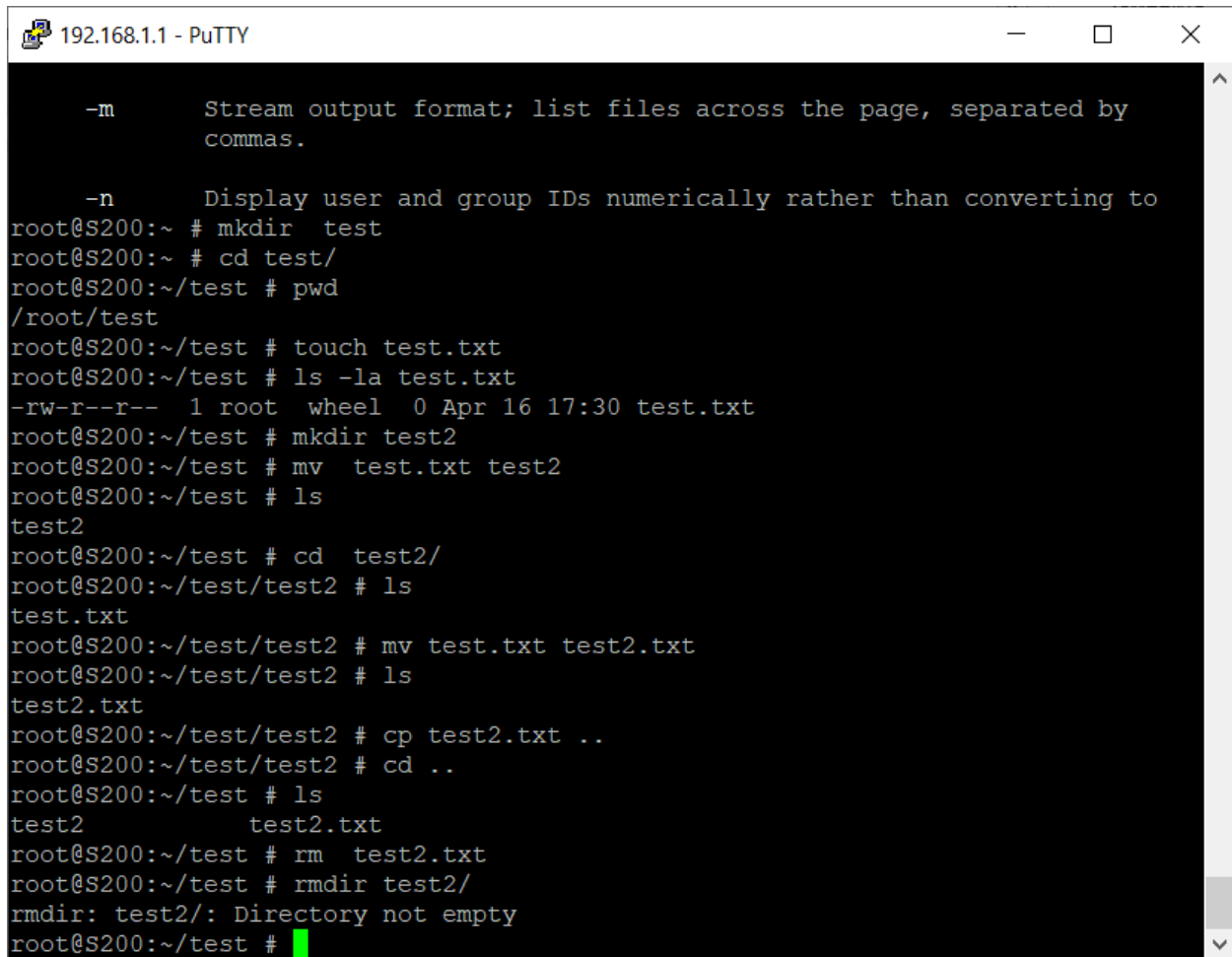
cp test2.txt .. “copy test2.txt to upper dir”

cd .. “change dir to upper dir”

ls “list dir in basic format”

rm test2.txt “remove file test.txt”

rmdir test2 “remove directory test2”



```
192.168.1.1 - PuTTY

-m      Stream output format; list files across the page, separated by
        commas.

-n      Display user and group IDs numerically rather than converting to

root@S200:~ # mkdir test
root@S200:~ # cd test/
root@S200:~/test # pwd
/root/test
root@S200:~/test # touch test.txt
root@S200:~/test # ls -la test.txt
-rw-r--r-- 1 root wheel 0 Apr 16 17:30 test.txt
root@S200:~/test # mkdir test2
root@S200:~/test # mv test.txt test2
root@S200:~/test # ls
test2
root@S200:~/test # cd test2/
root@S200:~/test/test2 # ls
test.txt
root@S200:~/test/test2 # mv test.txt test2.txt
root@S200:~/test/test2 # ls
test2.txt
root@S200:~/test/test2 # cp test2.txt ..
root@S200:~/test/test2 # cd ..
root@S200:~/test # ls
test2      test2.txt
root@S200:~/test # rm test2.txt
root@S200:~/test # rmdir test2/
rmdir: test2/: Directory not empty
root@S200:~/test #
```

4. Execute and describe the difference

cat /etc/fstab

“ The cat utility reads files sequentially, writing them to the standard output”

less /etc/fstab

“ Less is a program similar to more (1), but which allows backward

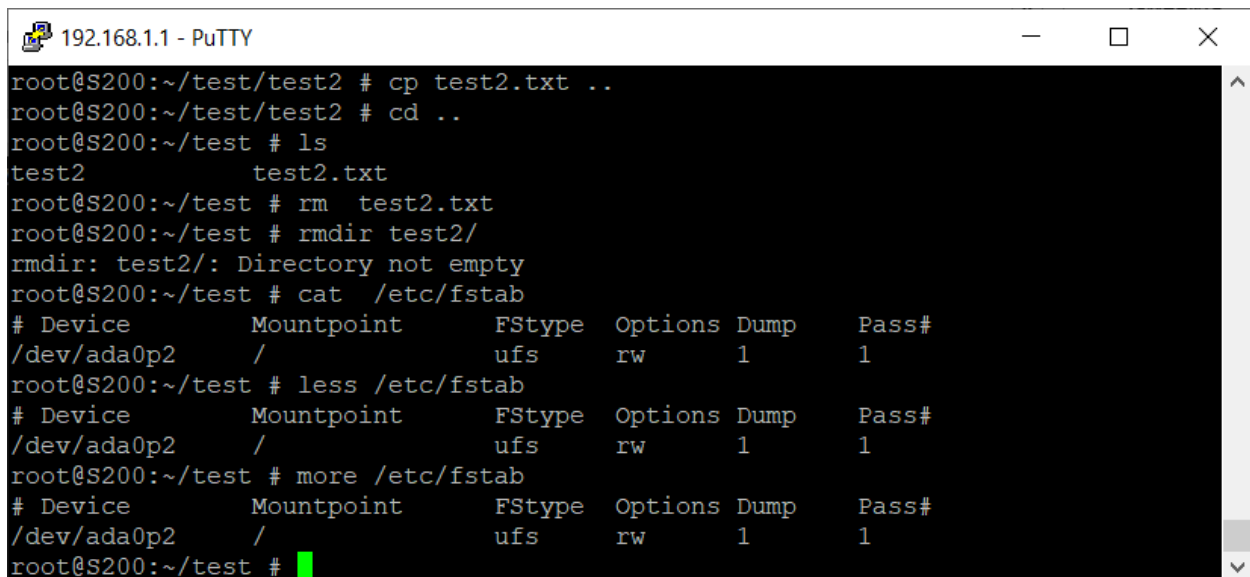
movement in the file as well as forward movement. Also, less does not

have to read the entire input file before starting, so with large input

files it starts up faster than text editors like vi (1). Less uses termcap (or terminfo on some systems), so it can run on a variety of terminals. There is even limited support for hardcopy terminals. (On a hardcopy terminal, lines which should be printed at the top of the screen are prefixed with a caret.)”

more /etc/fstab

“in FreeBSD now the same lime less but in linux is a basic paging text command - less now better to use)”



```
192.168.1.1 - PuTTY
root@S200:~/test/test2 # cp test2.txt ..
root@S200:~/test/test2 # cd ..
root@S200:~/test # ls
test2          test2.txt
root@S200:~/test # rm test2.txt
root@S200:~/test # rmdir test2/
rmdir: test2/: Directory not empty
root@S200:~/test # cat /etc/fstab
# Device      Mountpoint      FStype  Options  Dump    Pass#
/dev/ada0p2   /                ufs     rw       1       1
root@S200:~/test # less /etc/fstab
# Device      Mountpoint      FStype  Options  Dump    Pass#
/dev/ada0p2   /                ufs     rw       1       1
root@S200:~/test # more /etc/fstab
# Device      Mountpoint      FStype  Options  Dump    Pass#
/dev/ada0p2   /                ufs     rw       1       1
root@S200:~/test #
```

5. Add to archive all ‘test’ directories.

a. to the pure ‘tar’;

tar -vcf test.tar test

b. to the zipped ‘tar’ with only tar command;

tar -z -vcf test.tar test

c. to the zipped ‘tar’ with gzip command;

tar -vcf test.tar test

gzip test.tar

```
192.168.1.1 - PuTTY
root@S200:~ # clear
root@S200:~ # tar -vcf test.tar test
a test
a test/text2.txt
root@S200:~ # tar -z -vcf test.tgz test
a test
a test/text2.txt
root@S200:~ # gz
gzcat gzexe gzip
root@S200:~ # gzip test.tar
root@S200:~ # ls -l
total 108
-rw----- 1 root wheel 2156 Sep 17 2015 .bash_history
drwx----- 4 root wheel 512 Apr 17 2019 .cache
drwx----- 3 root wheel 512 Mar 7 2014 .config
-rw-r--r-- 2 root wheel 951 Dec 7 2018 .cshrc
-rw----- 1 root wheel 30495 Mar 2 17:25 .history
drwxr-xr-x 3 root wheel 512 Apr 17 2019 .homeassistant
-rw-r--r-- 1 root wheel 149 Dec 7 2018 .k5login
-rw----- 1 root wheel 131 Apr 16 17:55 .lessht
drwx----- 3 root wheel 512 Mar 7 2014 .local
-rw-r--r-- 1 root wheel 392 Dec 7 2018 .login
-rw-r--r-- 2 root wheel 470 Dec 7 2018 .profile
-rw----- 1 root wheel 1024 Mar 13 2015 .rnd
drwx----- 2 root wheel 512 Apr 9 2015 .ssh
drwxr-xr-x 3 root wheel 512 Mar 13 2015 .subversion
drwxr-xr-x 3 root wheel 512 Apr 16 2019 backup
drwxr-xr-x 2 root wheel 512 Aug 4 2015 mi_wifi_backup
drwxr-xr-x 2 root wheel 512 Apr 16 18:08 test
-rw-r--r-- 1 root wheel 147 Apr 16 18:13 test.tar.gz
-rw-r--r-- 1 root wheel 138 Apr 16 18:13 test.tgz
drwxr-xr-x 2 root wheel 512 Apr 16 18:10 test2
root@S200:~ #
```

extract from archives all above.

```
root@S200:~ # gunzip test.tar.gz
```

```
root@S200:~ # tar -xvf test.tar
```

```
x test/
```

```
x test/text2.txt
```

```
root@S200:~ # tar -zxvf test.tgz
```

```
x test/
```

```
x test/text2.txt
```

```
root@S200:~ #
```

5. Look through man pages of the listed above commands.

Done (see cat and less description from man upper text ;))