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Linux perusteet [TTC1040]

harjoitus 2

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1. **List all available shells on your Linux distribution.**

```
user@P0033-Ubuntu:~$ cat /etc/shells
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/bin/dash
/usr/bin/dash
/usr/bin/tmux
/usr/bin/screen
```

2. **Find general guidelines using man command for user password (Hint: passwd).**

man passwd

```
   Hints for user passwords
       The security of a password depends upon the strength of the encryption
       algorithm and the size of the key space. The legacy UNIX System
       encryption method is based on the NBS DES algorithm. More recent
       methods are now recommended (see ENCRYPT_METHOD). The size of the key
       space depends upon the randomness of the password which is selected.

       Compromises in password security normally result from careless password
       selection or handling. For this reason, you should not select a
       password which appears in a dictionary or which must be written down.
       The password should also not be a proper name, your license number,
       birth date, or street address. Any of these may be used as guesses to
       violate system security.

       You can find advice on how to choose a strong password on
       http://en.wikipedia.org/wiki/Password_strength
```

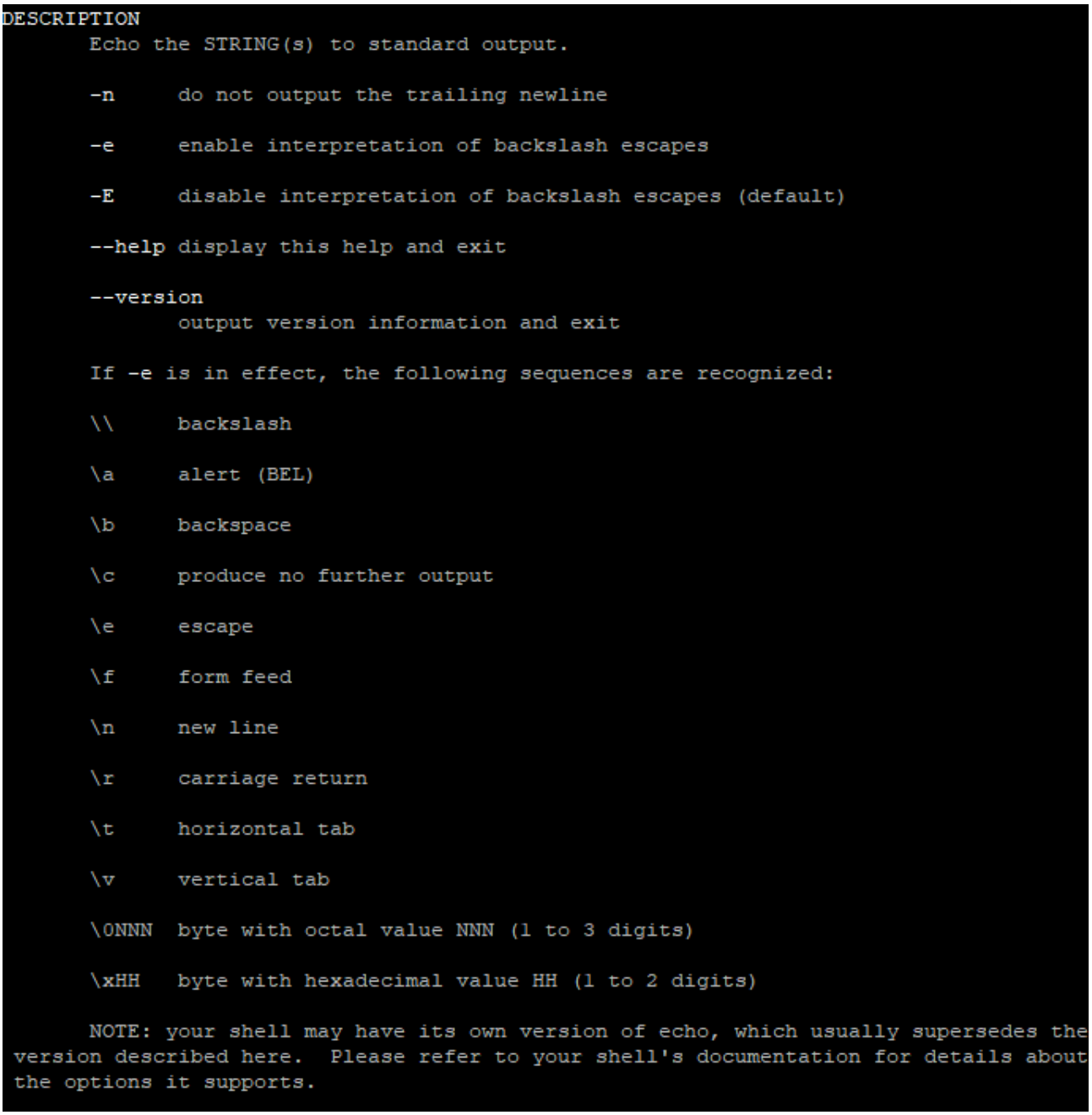
3. **How can you change your user from regular to root user and back to regular?**

```
user@P0033-Ubuntu:~$ su - root
Password:
root@P0033-Ubuntu:~# exit
logout
user@P0033-Ubuntu:~$
```

4. **Find out what is the description of the following Linux commands:**

- *Echo*

Man echo



```
DESCRIPTION
       Echo the STRING(s) to standard output.

       -n     do not output the trailing newline

       -e     enable interpretation of backslash escapes

       -E     disable interpretation of backslash escapes (default)

       --help display this help and exit

       --version
              output version information and exit

       If -e is in effect, the following sequences are recognized:

       \\     backslash

       \a     alert (BEL)

       \b     backspace

       \c     produce no further output

       \e     escape

       \f     form feed

       \n     new line

       \r     carriage return

       \t     horizontal tab

       \v     vertical tab

       \0NNN  byte with octal value NNN (1 to 3 digits)

       \xHH   byte with hexadecimal value HH (1 to 2 digits)

       NOTE: your shell may have its own version of echo, which usually supersedes the
version described here.  Please refer to your shell's documentation for details about
the options it supports.
```

- *Free*

Man free

```
DESCRIPTION
       free  displays the total amount of free and used physical and swap memory in
       the system, as well as the buffers and caches used by the kernel. The infor□
       mation is gathered by parsing /proc/meminfo. The displayed columns are:

       total  Total installed memory (MemTotal and SwapTotal in /proc/meminfo)

       used   Used memory (calculated as total - free - buffers - cache)

       free   Unused memory (MemFree and SwapFree in /proc/meminfo)

       shared Memory used (mostly) by tmpfs (Shmem in /proc/meminfo)

       buffers
              Memory used by kernel buffers (Buffers in /proc/meminfo)

       cache  Memory  used  by the page cache and slabs (Cached and SReclaimable in
              /proc/meminfo)

       buff/cache
              Sum of buffers and cache

       available
              Estimation of how much memory is available for starting new  applica□
              tions,  without  swapping.  Unlike  the data provided by the cache or
              free fields, this field takes into account page cache and  also  that
              not all reclaimable memory slabs will be reclaimed due to items being
              in use (MemAvailable in /proc/meminfo, available on kernels 3.14, em□
              ulated on kernels 2.6.27+, otherwise the same as free)
```

- *History*

Man history

```
DESCRIPTION
       Many programs read input from the user a line at a time.   The  GNU  History
       library  is able to keep track of those lines, associate arbitrary data with
       each line, and utilize information from  previous  lines  in  composing  new
       ones.
```

- *W*

Man w

```
DESCRIPTION
       w  displays  information about the users currently on the machine, and their
       processes.  The header shows, in this order, the current time, how long  the
       system  has  been  running,  how many users are currently logged on, and the
       system load averages for the past 1, 5, and 15 minutes.

       The following entries are displayed for each user: login name, the tty name,
       the  remote host, login time, idle time, JCPU, PCPU, and the command line of
       their current process.

       The JCPU time is the time used by all processes attached  to  the  tty.   It
       does  not  include  past background jobs, but does include currently running
       background jobs.

       The PCPU time is the time used by the current process, named in  the  "what"
       field.
```

5. **Give an example of all of the above commands and command outputs.**

```
user@P0033-Ubuntu:~$ echo Echo is confusing
Echo is confusing
user@P0033-Ubuntu:~$ free -b
               total        used        free      shared  buff/cache   available
Mem:     1028849664   173854720    96538624     1069056   758456320   686399488
Swap:    2057302016     8171520  2049130496
```

```
user@P0033-Ubuntu:~$ history -a
user@P0033-Ubuntu:~$ history
    1  history -w
    2  history -w
    3  ls
    4  ls -a
    5  passwd
    6  uname
    7  lshw
    8  uname --help
    9  uname -m
   10  uname -k
   11  uname -r
   12  uname --kernel-name
   13  uname -m
   14  uname --help
   15  uname --kernel-name -r -v
   16  uname --version
   17  man
   18  man gib
   19  lshw -c memory
   20  sudo lshw -c memory
   21  lscpu
   22  --help
   23  help
   24  lshw
   25  lshw-memory
   26  lshw -memory
   27  uname --help
   28  lshw -memory
   29  lshw -memory -html
   30  lshw -memory -format html
   31  lshw --help
   32  lshw -format html
   33  lshw -class memory
   34  uname --help
   35  uname -p
   36  lsb_release
   37  lshw
   38  lsb_release
   39  lsb_release --help
   40  lsb_release -r -d
   41  lsb_release -c
   42  lshw -c
   43  lshw -c -display
user@P0033-Ubuntu:~$ w
 12:50:31 up 7 days,  1:15,  1 user,  load average: 0.00, 0.00, 0.00
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
user     pts/0    192.168.48.21    11:14    7.00s  0.09s  0.00s w
```