EPAM University Programs
DevOps external course
Module 4 DevOps Introduction
TASK 4.2

1. Set up Linux Virtual Machine in VirtualBox.

2. Familiarize yourself with the commands and utilities listed in the presentation (switching between **virtual terminals** (consoles); **printenv**; content of **/etc/profile** and **~/.bash_profile**, **$echo $HISTFILE $HISTSIZE $HISTFILESIZE**, **who**, **w**, **whoami**, **id**). Make 5 screenshots.

a. I have used combination of buttons **Alt+F2 and Alt+F1** to switch between consoles. As result you can see it at screenshot below, that shows 2 consoles using by user alex

b. To show all environment variables and their content I used the **printenv** command

```
=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01
;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=0
1;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tzst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31
:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.al
z=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wim=01;31:*.swm=01;
31:*.dwm=01;31:*.esd=01;31:*.jpg=01;35:*.jpeg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;
35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:
*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.
m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt
=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01:
35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.o
gv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=
00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;3
6:*.xspf=00;36:
LESSCLOSE=/usr/bin/lesspipe %s %s
LANG=en_US.UTF-8
INVOCATION_ID=be6facddac5b46179b1c39e91be8ac7e
XDG_VTNR=1
XDG_SESSION_ID=1
HUSHLOGIN=FALSE
USER=alex
PWD=/home/alex
HOME=/home/alex
JOURNAL_STREAM=9:22237
XDG_DATA_DIRS=/usr/local/share:/usr/share:/var/lib/snapd/desktop
MAIL=/var/mail/alex
SHELL=/bin/bash
TERM=linux
SHLVL=1
XDG_SEAT=seat0
LOGNAME=alex
XDG_RUNTIME_DIR=/run/user/1000
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/
bin
LESSOPEN=| /usr/bin/lesspipe %s
_=/usr/bin/printenv
alex@server:~$
```

c. To show content of directories I used the **ls –laX** command that shows hidden files either

```
alex@server:~$ ls -laX /etc/profile
-rw-r--r-- 1 root root 581 Apr  9  2018 /etc/profile
alex@server:~$ ls -laX ~/.bash_profile
ls: cannot access '/home/alex/.bash_profile': No such file or directory
```

d. To show the content of variables $HISTFILE $HISTSIZE $HISTFILESIZE I used the **echo** command

```
alex@server:~$ echo $HISTFILE $HISTSIZE $HISTFILESIZE
/home/alex/.bash_history 1000 2000
```

e. Commands **who** and **w** shows on display users which are currently logged into OS. As you can see command **w** is more complicated than **who** at least because of load average: for 1 min; 5 min; 15 min

```
alex@server:~$ who
alex     tty1         2020-04-08 20:31
alex     tty2         2020-04-08 20:34
alex@server:~$ w
 20:50:10 up 20 min,  2 users,  load average: 1.01, 2.39, 2.98
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
alex     tty1     -                20:31    2.00s  0.09s  0.00s w
alex     tty2     -                20:34    15:38  0.06s  0.05s -bash
alex@server:~$ whoami
```

f. Command the **whoami** shows name of user which uses terminal window now

```
alex@server:~$ whoami
alex
```

g. The **id** command is used to print user and group information for a specified user

```
alex@server:~$ id
uid=1000(alex) gid=1000(alex) groups=1000(alex),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),108(lx
d),113(docker),998(microk8s)
```

3. Familiarize yourself with the commands (*uname, hostname, uptime, shutdown, halt, reboot, init…*). Make 5 screenshots.

a. To show name of OS that is used now, use the **uname** command

```
alex@server:~$ uname
Linux
```

b. To show hostname of machine is used now, use the **hostname** command

```
alex@server:~$ hostname
server
```

c. To show how long system is worked, amount of users that currently logged and load average for 1, 5, 15 minutes, use the **uptime** command

```
alex@server:~$ uptime
 21:09:34 up 39 min,  2 users,  load average: 0.03, 0.18, 0.98
```

d. To schedule time of shutdown the system use the **shutdown** command. Without any options this command will turn off the system in 1 minute

```
alex@server:~$ shutdown
Shutdown scheduled for Wed 2020-04-08 21:14:27 UTC, use 'shutdown -c' to cancel.
```

e. To stop all procceses in CPU use the **halt** command

```
        Deactivating swap /swap.img...
  OK  ] Stopped Network Service.
  OK  ] Stopped target Network (Pre).
  OK  ] Stopped Initial cloud-init job (pre-networking).
  OK  ] Stopped Apply Kernel Variables.
  OK  ] Stopped Load Kernel Modules.
  OK  ] Stopped Monitoring of LVM2 mirrors, snapshots etc. using dmeventd or progress polling.
        Stopping LVM2 metadata daemon...
  OK  ] Stopped LVM2 metadata daemon.
  OK  ] Deactivated swap /swap.img.
  OK  ] Reached target Unmount All Filesystems.
  OK  ] Stopped Remount Root and Kernel File Systems.
  OK  ] Reached target Shutdown.
  OK  ] Reached target Final Step.
        Starting Halt...
```
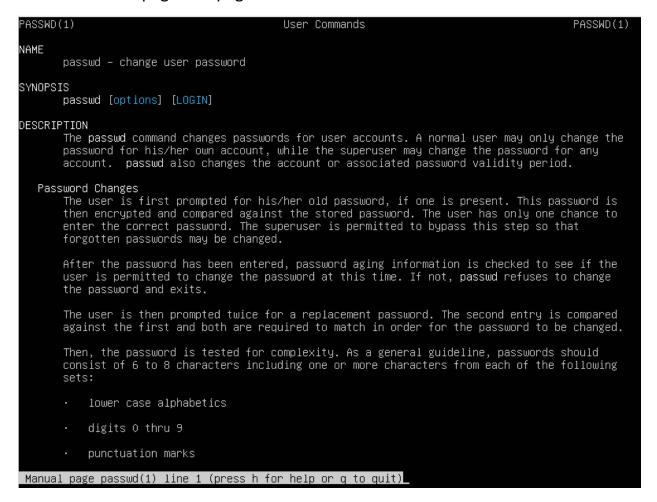
f. To reload the machine use the **reboot** command

```
alex@server:~$ reboot
```

4. Familiarize yourself with the help commands (***man, info, find, locate, whereis, less|zless in /usr/share/doc***). Make 5 screenshots.

To view manual pages for pages use the **man** command

```
PASSWD(1)                         User Commands                        PASSWD(1)

NAME
       passwd - change user password

SYNOPSIS
       passwd [options] [LOGIN]

DESCRIPTION
       The passwd command changes passwords for user accounts. A normal user may only change the
       password for his/her own account, while the superuser may change the password for any
       account.  passwd also changes the account or associated password validity period.

   Password Changes
       The user is first prompted for his/her old password, if one is present. This password is
       then encrypted and compared against the stored password. The user has only one chance to
       enter the correct password. The superuser is permitted to bypass this step so that
       forgotten passwords may be changed.

       After the password has been entered, password aging information is checked to see if the
       user is permitted to change the password at this time. If not, passwd refuses to change
       the password and exits.

       The user is then prompted twice for a replacement password. The second entry is compared
       against the first and both are required to match in order for the password to be changed.

       Then, the password is tested for complexity. As a general guideline, passwords should
       consist of 6 to 8 characters including one or more characters from each of the following
       sets:

       ·     lower case alphabetics

       ·     digits 0 thru 9

       ·     punctuation marks

 Manual page passwd(1) line 1 (press h for help or q to quit)
```

To view info documentation for commands use the **info** command

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       ·    digits 0 thru 9

       ·    punctuation marks
-----Info: (*manpages*)passwd, 318 lines --Top---------------------------------------
No menu item 'passwd' in node '(dir)Top'
```

To find some files in directories use the **find** command

```
alex@server:~$ find /etc/*.conf
/etc/adduser.conf
/etc/ca-certificates.conf
/etc/debconf.conf
/etc/deluser.conf
/etc/fuse.conf
/etc/gai.conf
/etc/hdparm.conf
/etc/host.conf
/etc/kernel-img.conf
/etc/ld.so.conf
/etc/libaudit.conf
/etc/logrotate.conf
/etc/ltrace.conf
/etc/mke2fs.conf
/etc/nsswitch.conf
/etc/overlayroot.conf
/etc/pam.conf
/etc/popularity-contest.conf
/etc/resolv.conf
/etc/rsyslog.conf
/etc/sos.conf
/etc/sysctl.conf
/etc/ucf.conf
/etc/updatedb.conf
```

To find file in a whole system use the **locate** command

```
alex@server:~$ locate hosts
/etc/hosts
/etc/cloud/templates/hosts.debian.tmpl
/etc/cloud/templates/hosts.freebsd.tmpl
/etc/cloud/templates/hosts.redhat.tmpl
/etc/cloud/templates/hosts.suse.tmpl
/lib/x86_64-linux-gnu/security/pam_rhosts.so
/usr/lib/python3/dist-packages/cloudinit/config/cc_update_etc_hosts.py
/usr/lib/python3/dist-packages/cloudinit/config/__pycache__/cc_update_etc_hosts.cpython-36.pyc
/usr/lib/python3/dist-packages/cloudinit/distros/parsers/hosts.py
/usr/lib/python3/dist-packages/cloudinit/distros/parsers/__pycache__/hosts.cpython-36.pyc
/usr/lib/python3/dist-packages/twisted/conch/client/knownhosts.py
/usr/lib/python3/dist-packages/twisted/conch/client/__pycache__/knownhosts.cpython-36.pyc
/usr/lib/python3/dist-packages/twisted/conch/test/test_knownhosts.py
/usr/lib/python3/dist-packages/twisted/conch/test/__pycache__/test_knownhosts.cpython-36.pyc
/usr/lib/python3/dist-packages/twisted/names/hosts.py
/usr/lib/python3/dist-packages/twisted/names/__pycache__/hosts.cpython-36.pyc
/usr/lib/python3/dist-packages/twisted/names/test/test_hosts.py
/usr/lib/python3/dist-packages/twisted/names/test/__pycache__/test_hosts.cpython-36.pyc
/usr/share/man/man5/hosts.5.gz
/usr/share/man/man5/hosts.equiv.5.gz
/usr/share/man/man8/pam_rhosts.8.gz
/usr/share/vim/vim80/ftplugin/denyhosts.vim
/usr/share/vim/vim80/ftplugin/hostsaccess.vim
/usr/share/vim/vim80/syntax/denyhosts.vim
/usr/share/vim/vim80/syntax/hostsaccess.vim
/usr/share/zsh/vendor-completions/_sd_hosts_or_user_at_host
```

To search for the location of a command or the man pages for a command, use
the **whereis** command

```
alex@server:~$ whereis hosts
hosts: /etc/hosts /etc/hosts.deny /etc/hosts.allow /usr/share/man/man5/hosts.5.gz
```

To view content of the file use the **less** command

```
alex@server:~$ ls /usr/share/doc/ucf
changelog.gz  copyright  examples
alex@server:~$ less /usr/share/doc/ucf/copyright
Format: https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/
Upstream-Name: ucf
Upstream-Contact:  Manoj Srivastava <srivasta@debian.org>
Source: https://anonscm.debian.org/users/srivasta/debian/ucf.git
Copyright: 2002, 2003, 2003, 2004, 2005, 2006, 2015 Manoj Srivastava <srivasta@debian.org>
License: GPL-2

Files: *
Copyright: 2002, 2003, 2003, 2004, 2005, 2006, 2015 Manoj Srivastava <srivasta@debian.org>
License: GPL-2


License: GPL-2
   ucf is Copyright (C) 2002, 2003, 2003, 2004, 2005, 2006 Manoj
   Srivastava <srivasta@debian.org>
   .
   This program is free software; you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; version 2 dated June, 1991.
   .
   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.
   .
   On Debian GNU/Linux systems, the complete text of the GNU General
   Public License can be found in `/usr/share/common-licenses/GPL-2'.
   .
   A copy of the GNU General Public License is also available at
   <URL:http://www.gnu.org/copyleft/gpl.html>.  You may also obtain
   it by writing to the Free Software Foundation, Inc., 51 Franklin
   St, Fifth Floor, Boston, MA 02110-1301 USA
q/usr/share/doc/ucf/copyright (END)
```