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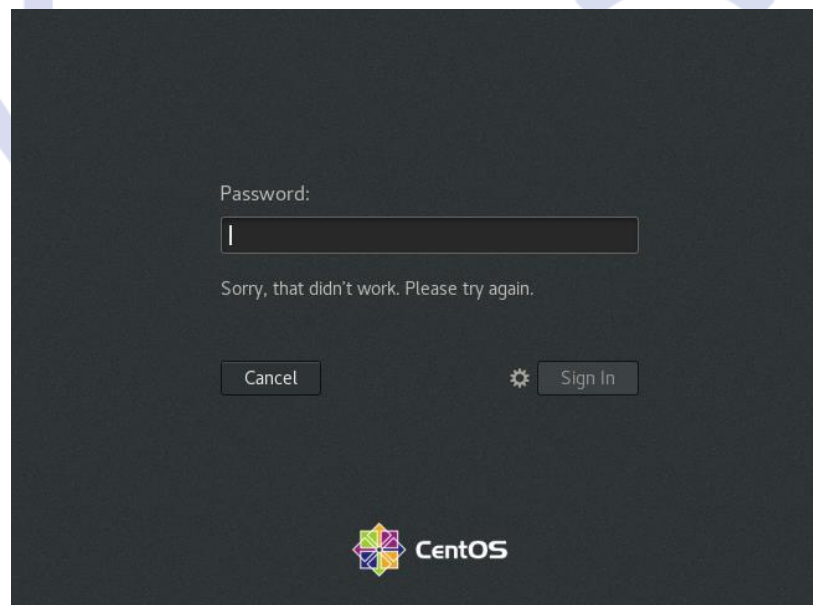
Basic Linux Commands Assignments

Assignment-1

Connect and disconnect with login Access

- What happens when you login a non-existent users or username?
 - Provide Screenshot and What you understand, explain in short brief?

Answer: For both existent user with wrong password and non-existent user we will get the same message for GUI mode: the error message is: "Sorry, that didn't work. Please try again." Below is the screen shot.



And from the command prompt we are getting "Permission denied" message. Below is the screenshot.

```
C:\Users\ [redacted] > ssh touhid@192.168.0.153
touhid@192.168.0.153's password:
Permission denied, please try again.
touhid@192.168.0.153's password:
Permission denied, please try again.
touhid@192.168.0.153's password:
touhid@192.168.0.153: Permission denied (publickey,gssapi-keyex,gssapi-with-mic,password).
```

Assignment-2

Password changing

- Login into your account and then change password?
 - Change your password into **IneuR0n#42** and hit the **Enter** key
 - Explain what happen and give screenshot?

Answer: If we change the password with combination of at least one capital letter, one special character, one numeric value and one small letter and minimum 7-digit length, then we can change the password without any warning message. Below is the screenshot:

```
[osboxes@osboxes ~]$ sudo passwd osboxes
[sudo] password for osboxes:
Changing password for user osboxes.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[osboxes@osboxes ~]$
```

- Try again to change password but use like password **1234** or **abcd**
 - Explain what happen and give screenshot?

Answer: If we change the password with very short and sequential characters then we are getting a warning message "BAD PASSWORD: The password is shorter than 8 characters" and system allows to change the password. Below is the screenshot

```
[osboxes@osboxes ~]$ sudo passwd osboxes
Changing password for user osboxes.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[osboxes@osboxes ~]$
```

- Try again to change password but now don't use any password just hit **Enter** key
 - Explain what happen and give screenshot?

Answer: If we try to change the password with empty string then we are getting an error message and system does not allow to set blank password. Below is the screenshot

```
[osboxes@osboxes ~]$ sudo passwd osboxes
Changing password for user osboxes.
New password:
BAD PASSWORD: No password supplied
Retype new password:
No password supplied
passwd: Authentication token manipulation error
[osboxes@osboxes ~]$
```

Assignment-3

Working with Directories

- Enter the command **cd /** and then **ls** and then hit **Enter** key
 - Take screenshot and explain what output we got?

Answer: user the **cd /** command we are going root (/) of the system. And using the **ls** command we are getting the list of directories and files in the /. Below is the screenshot:

```
[osboxes@osboxes ~]$ cd /
[osboxes@osboxes /]$ ls
bin    dev    home   lib64  mnt    proc   run    srv    tmp    var
boot  etc    lib    media  opt    root   sbin   sys    usr
```

- Enter the command now **cd /home** and then hit **Enter** key
 - Do **ls**, provide screenshot and explain what is **/home** directory used for?

Answer: The **/home** directory is used for the default home directory of the newly created users in the system. Below is the screenshot which shows a directory of my username "osboxes".

```
[osboxes@osboxes /]$ cd /home
[osboxes@osboxes home]$ ls
osboxes
[osboxes@osboxes home]$
```

- Enter **cd ..** and hit **Enter** key [*Note: here we have space after cd then use double dot*]
 - Check what happen and give screenshot?

Answer: Using the **cd ..** command we are going to parent directory of the current directory. Here we are on the **/home** directory after running the **cd ..** command we are going to **/** directory. Below is the screenshot:

```
[osboxes@osboxes home]$ cd ..
[osboxes@osboxes /]$
```

- Now enter **cd /var/www/html** and then type **cd** and hit **Enter** key
 - Explain what happen and give screenshot?

Answer: We can go any directory using the **cd** command with directory location. Using the **cd /home/osboxes/Documents/** command we are go to **/home/osboxes/Documents/** directory. And using only **cd** command we are going to the user's home directory. Below is the screenshot:


```
[osboxes@osboxes etc]$ ls -al
total 1368
drwxr-xr-x. 139 root root    8192 Oct 13 09:59 .
dr-xr-xr-x.  17 root root     224 Nov 23  2020 ..
drwxr-xr-x.   3 root root     101 Nov 23  2020 abrt
-rw-r--r--.   1 root root       16 Nov 23  2020 adjtime
-rw-r--r--.   1 root root    1529 Apr  1  2020 aliases
-rw-r--r--.   1 root root   12288 Nov 23  2020 aliases.db
drwxr-xr-x.   3 root root       65 Nov 23  2020 alsa
drwxr-xr-x.   2 root root    4096 Nov 23  2020 alternatives
-rw-----.   1 root root     541 Aug  8  2019 anacrontab
-rw-r--r--.   1 root root       55 Aug  8  2019 asound.conf
-rw-r--r--.   1 root root        1 Oct 30  2018 at.deny
drwxr-x---.   3 root root       43 Nov 23  2020 audisp
```

- Then use **ls -i** and hit **Enter** key
 - Now see what different output its shows and take screenshot?

Answer: Using the **ls -i** command we can see all the files and directories with their respective inode number. Below is the screenshot:

```
[osboxes@osboxes etc]$ ls -i
269506985 abrt
269424889 adjtime
268677290 aliases
270320743 aliases.db
738137 alsa
268697026 alternatives
269424865 anacrontab
269153009 asound.conf
270137422 at.deny
403524313 audisp
135383050 audit
270131648 avahi
1557680 mcelog
269151992 mke2fs.conf
135018801 modprobe.d
465922 modules-load.d
268677304 motd
268677188 mtab
268858539 mtools.conf
135846380 multipath
269152428 my.cnf
134955227 my.cnf.d
270225989 nanorc
269482264 ndctl
```

- Then use **ls --help** and see other options about **ls** command
 - Explore it and try with other attribute we can use with **ls** command

Answer: Using the **ls -lhS** we can sort the list of files by the file Size in descending order. Instead of S if we use **t** (**ls -lht**) then we can sort the list of files by last modification time. Below are the screenshots:

```
[osboxes@osboxes etc]$ ls -lhS
total 1.4M
-rw-r--r--. 1 root root 655K Jun  7  2013 services
-rw-r--r--. 1 root root 79K Nov 23  2020 ld.so.cache
-rw-r--r--. 1 root root 27K Oct 13  2020 dnsmasq.conf
-rw-r--r--. 1 root root 22K Apr 10  2018 brltty.conf
-rw-r--r--. 1 root root 12K Nov 23  2020 aliases.db
drwxr-xr-x. 2 root root 12K Nov 23  2020 brltty
-rw-r--r--. 1 root root 8.7K Jun 10  2014 nanorc
-rw-r--r--. 1 root root 7.2K Nov 23  2020 kdump.conf
-rw-----. 1 tss tss 6.9K Aug  3  2017 tcstd.conf
-rw-r--r--. 1 root root 6.4K Apr  1  2020 protocols
-rw-r--r--. 1 root root 6.2K Jun  9  2014 pnm2ppa.conf
```

```
[osboxes@osboxes etc]$ ls -lht
total 1.4M
-----, 1 root root 1.3K Oct 13 09:59 shadow
drwxr-xr-x. 5 root lp 4.0K Oct 13 09:03 cups
-rw-r--r--. 1 root root 64 Oct 13 09:02 resolv.conf
-rw-r--r--. 1 root root 79K Nov 23 2020 ld.so.cache
drwxr-xr-x. 4 root root 208 Nov 23 2020 vmware-tools
drwxr-xr-x. 2 root root 4.0K Nov 23 2020 pam.d
drwx-----, 5 root root 199 Nov 23 2020 libvirt
-rw-r--r--. 1 root root 12K Nov 23 2020 aliases.db
drwxr-xr-x. 2 root root 225 Nov 23 2020 ssh
drwxr-x---. 3 root root 83 Nov 23 2020 audit
```

Assignment-5

Know where you are and where you working

Here we use **pwd**, **cd** and **ls** as combine task to understand where you working on terminal and how you can switch from one directory to another one.

- Open terminal after restart the linux
 - Check which location you working, type **pwd** and take screenshot

Answer: After restarting the linux , we are in the user's home directory. We can see it by running the **pwd** command. Below is the screenshot:

```
[osboxes@osboxes ~]$ pwd
/home/osboxes
```

- Now use **cd /var** and hit **Enter** key
 - Do **ls**, and see what output comes, give screenshot?

Answer: Using **cd /var** command we are going to /var directory and after running **ls** command we can see the list of directories and files on the var directory. Below is the screenshot:

```
[osboxes@osboxes ~]$ cd /var
[osboxes@osboxes var]$ ls
account  crash  games  lib  log  opt  spool
adm      db     gopher local mail preserve tmp
cache   empty  kerberos lock  nis  run  yp
[osboxes@osboxes var]$
```

- Do explore other help options of each command to learn more other things we can do with these commands

Answer: For **cd** and **pwd** we are not getting more options using the **--help** option. Below is the screenshot:

```
[osboxes@osboxes var]$ pwd --help
-bash: pwd: --: invalid option
pwd: usage: pwd [-LP]
[osboxes@osboxes var]$ cd --help
-bash: cd: --: invalid option
cd: usage: cd [-L|[-P [-e]]] [dir]
```

Assignment-6

Install all the dependencies for making CentOS full screen

Answer: To get the CentOS 7 full screen on the virtual box we need to install the below dependencies:

Step 1: First need to install the gcc on the system:

```
sudo yum -y install gcc
```

Step 2: Then install the make and perl packages

```
sudo yum -y install make perl
```

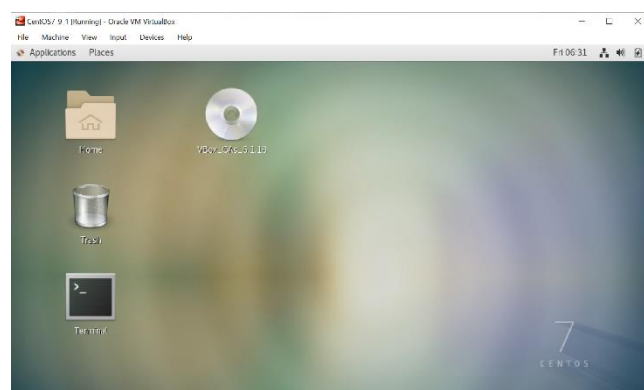
Step 3: Then need to install the kernel-devel on the system

```
sudo yum -y install kernel-devel-$(uname -r)
```

Step 4: Then install the elfutils-libelf-devel

```
sudo yum -y install elfutils-libelf-devel
```

Step 5: Then from the VirtualBox Application go to Devices menu and select Insert Guest Additions CD Images then Run it. After completing this reboot, the system. Now from the View menu you can click on Full-Screen Mode to get the Full Screen.



Assignment-7

Please update your CentOS machine

Answer: I have updated my CentOS 7 by running the “sudo yum -y update” command. Below is the screenshots:


```

[osboxes@osboxes ~]$ sudo yum -y update
[sudo] password for osboxes:
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirrors.hostever.com
 * extras: mirrors.hostever.com
 * updates: mirrors.hostever.com
base
extras
updates
(1/2): extras/7/x86_64/primary_db
(2/2): updates/7/x86_64/primary_db
Resolving Dependencies
--> Running transaction check
--> Package NetworkManager.x86_64 1:1.18.8-1.el7 will be updated
--> Package NetworkManager.x86_64 1:1.18.8-2.el7_9 will be an update
--> Package NetworkManager-adsl.x86_64 1:1.18.8-1.el7 will be updated
--> Package NetworkManager-adsl.x86_64 1:1.18.8-2.el7_9 will be an update

```

```

--> Package zlib.x86_64 0:1.2.7-20.el7_9 will be an update
updates/7/x86_64/filelists_db | 9.6 MB 00:00:01
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package                                Arch                Version              Repository            Size
=====
Installing:
kernel                                x86_64              3.10.0-1160.76.1.el7 updates              50 M
Updating:
NetworkManager                       x86_64              1:1.18.8-2.el7_9     updates              1.9 M
NetworkManager-adsl                  x86_64              1:1.18.8-2.el7_9     updates              163 k
NetworkManager-glib                  x86_64              1:1.18.8-2.el7_9     updates              1.5 M
NetworkManager-libnm                 x86_64              1:1.18.8-2.el7_9     updates              1.7 M

zenity                                x86_64              3.28.1-2.el7_9       updates              4.0 M
zlib                                  x86_64              1.2.7-20.el7_9       updates              90 k
=====

Transaction Summary
-----
Install 1 Package
Upgrade 293 Packages

Total download size: 556 M
Downloading packages:
No Presto metadata available for updates
(1/294): NetworkManager-adsl-1.18.8-2.el7_9.x86_64.rpm | 163 kB 00:00:00
(2/294): NetworkManager-glib-1.18.8-2.el7_9.x86_64.rpm | 1.5 MB 00:00:00

```

```

(293/294): zlib-1.2.7-20.el7_9.x86_64.rpm | 90 kB 00:00:00
(294/294): webkitgtk4-2.28.2-3.el7.x86_64.rpm | 28 MB 00:00:04
-----
Total | 12 MB/s | 556 MB 00:00:48
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Updating : 1:grub2-common-2.02-0.87.0.1.el7.centos.9.noarch 1/587
  Updating : centos-release-7-9.2009.1.el7.centos.x86_64 2/587
  Updating : 1:control-center-filesystem-3.28.1-8.el7_9.1.x86_64 3/587

```

```

Installed:
kernel.x86_64 0:3.10.0-1160.76.1.el7

Updated:
NetworkManager.x86_64 1:1.18.8-2.el7_9
NetworkManager-glib.x86_64 1:1.18.8-2.el7_9
NetworkManager-adsl.x86_64 1:1.18.8-2.el7_9
NetworkManager-libnm.x86_64 1:1.18.8-2.el7_9
NetworkManager-team.x86_64 1:1.18.8-2.el7_9
NetworkManager-wifi.x86_64 1:1.18.8-2.el7_9
NetworkManager-ppp.x86_64 1:1.18.8-2.el7_9
NetworkManager-tui.x86_64 1:1.18.8-2.el7_9
at.x86_64 0:3.1.13-25.el7_9
bash.x86_64 0:4.2.46-35.el7_9

```

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