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TIE-23546 Cloud Platforms
Exercise 1: Basic Linux Commands
v1.7

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Virtualization is not directly supported by an operating system. Virtualization support is implemented with separate virtualization software (Tier-2). Virtualization software is used to create a virtual machine. A virtual machine works like a real computer. In the next exercise, we will use VMware Workstation virtualization software and install Linux operating system on a virtual machine.

Installation of Ubuntu Server

The following instructions are made for Microsoft Windows 10. If you are using MacOS, then you have to adapt instructions.

1. Download Ubuntu Server 18.04.* LTS from Ubuntu home page (Link). Save ISO file to directory C:\Temp.

2. Configure the virtualization software. Set the following information.

Quest operating system	Virtual machine name	Location
Ubuntu 64-bit	Ubuntu Server 01	e.g. C:\Temp\Ubuntu_Server_01

3. Change the virtual machine settings.

Memory (GB)	Hard Disk (SCSI)	CD/DVD (IDE)	Network Adapter
2048	20GB	Use ISO image file -> C:\Temp\ubuntu-18.04.*.iso	VMware: NAT Oracle: Bridge

4. Start the virtual machine and install Ubuntu Server. Follow instructions and remember to install SSH server. After installation, reboot Ubuntu Server.

5. The default installation does not include a graphical user interface. Usually, when we run virtual machines or instances in a cloud, the proper solution to configure virtual resources is a command line.

6. Check IP address of the virtual machine with ifconfig command.

```
Ubuntu# ifconfig
```

7. Start PowerShell on Windows 10 and open the SSH connection on the virtual machine.

```
P:> ssh user_name@IP_address
```

8. Download Netflix.txt from Moodle and save the file to directory C:\Temp.

9. To transfer files between the local computer and the virtual machine, you must install WinSCP. WinSCP is an open source program that you can download from the link.

10. Start WinSCP and open SFTP connection on the virtual machine. Upload the file to Ubuntu Server and save the file to your home directory. Remember to enable "Show Hidden Files" option [Options\ Preferences\ Panels\ Show hidden files].

11. Fill in the table and answer the questions "step-by-step".

Basic Commands		
Number	**What command you…**	**Command**
1	print the current directory path	`pwd`
2	print the current user name	`id -u -n`
3	print the names of all active users	`W`
4	print the computer name	`ls`
5	move up one directory	`Cd   directory /`
6	go directly to directory /etc/network cd	`Pushd /etc/network (saving current working directory)`
7	go directly to your home directory	`cd or cd ~`
8	print the contents of the directory	`Ls`
9	print the contents of the directory and hidden files	`Ls -la`
10	print the instructions of gzip program	
11	switch from a basic user to the root user Tip. Check your current user name with command whoami.	`Sudo -i` `(back to basic user su -username)`
12	update file and directory database	
13	A) find the file auth.log B) The path of the directory?	`Locate auth.log` `/var/log/auth.logcd`
14	copy auth.log file to root directory	`Cp auth.log /root/`
15	return back to a reqular user	`su - username`
16	create the directory Movies in your home directory	`Sudo mkdir Movies`
17	move Netflix.txt file to the directory Movies	`Sudo cp Netflix.txt /home/Movies`
18	go to the Movies directory	`Cd /home/Movies`
19	print the contents of the Netflix.txt file	`Cat /home/Movies/Netflix.txt`
20	A) calculate the number of rows from the Netflix.txt file B) Number of rows?	`A)  Wc -l Netflix.txt` `B)  3605`
21	print only Top Gear shows from Netflix.txt file	`Awk '{/TOP/ && /GEAR/ IGNORECASE =1 Netflix.txt}'`

/23	print only Top Gear shows from Netflix.txt file to file TG.txt	`Awk '{/TOP/ && /GEAR/ IGNORECASE =1 Netflix.txt}' >TG.txt`
24	A) calculate the number of rows from the TG.txt file B) Number of rows?	A) `Wc -l TG.txt` B) 4
25	Shutdown the Ubuntu Server first. Then close the WMware software.	
26	Do not destroy the virtual machine. We will use it in the future exercises.	
27	Save the final report to your home directory in Word Doc and Adobe PDF (Word / File / Save as / PDF).	
28	Return the final report in PDF format.	