

Template Week 5 – Operating Systems

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Assignment 5.1: Unix-like

- a) Find out what the difference is between UNIX and unix-like operating systems?

Unix is beschermd en mag alleen volgens de UNIX systeem eigenaren maar unix like dat kan iedereen doen is een systeem dat op unix lijkt

- b) Study the image above named UNIX timeline. Find out who Ken Thompson, Dennis Ritchie, Bill Joy, Richard Stallman, and Linus Torvalds are and what they have contributed to the development of UNIX or unix-like systems and to IT in general. **TIP!** English-language sources often contain more detailed information about these individuals.

Ken Thompson: Grondlegger van het originele UNIX bij Bell Labs en ontwerper van de programmeertaal B.

Dennis Ritchie: Creëerde de programmeertaal C en was samen met Thompson de belangrijkste maker van UNIX.

Bill Joy: Sleutelfiguur achter **BSD Unix**, maker van de teksteditor vi en mede-oprichter van Sun Microsystems (bekend van Java).

Richard Stallman: Oprichter van de **GNU-beweging** en de Free Software Foundation. Hij bedacht het concept 'copyleft' en de GPL-licentie.

Linus Torvalds: De maker van de **Linux-kernel**, het hart van besturingssystemen zoals Ubuntu, Android en ChromeOS. Hij ontwikkelde ook **Git**.

- c) What is the philosophy of the GNU movement?

De kernfilosofie is "**Vrije Software**" (Free Software) Gebruikers moeten vier vrijheden hebben de vrijheid om de software te gebruiken, te bestuderen, te kopiëren en te wijzigen.

- d) Does Ubuntu as a Linux operating system conform to the philosophy of the GNU movement?
Please explain your answer.

Nee niet volledig omdat je niet VOLLEDIG vrij bent omdat je toegang hebt tot niet vrije applicaties via de winkels en drivers

- e) Find out what is the Windows Subsystem for Linux?

Een compatibiliteitslaag waardoor je linux systemen en tools kunt draaien op windows zonder aparte dual boot etc

f) Find out, which operating system family belongs to Android, iOS and ChromeOS?

Android: Linux

iOS: Unix-like

ChromeOS: Linux

Assignment 5.2: Supercomputers and gameconsoles

- a) Research on this site what supercomputers are used for and write a short summary of it:
<https://www.computerhistory.org/timeline/search/?q=Supercomputer>

Op basis van de tijdlijn worden supercomputers ingezet voor zware rekentaken zoals wetenschappelijk onderzoek klimaatmodellen etc en militaire toepassingen zoals het beheren van nucleaire dingen en AI-uitdagingen zoals schaken tegen wereldkampioenen (Deep Blue).

- b) IBM is a company that has already built a number of supercomputers. One of them is IBM's Roadrunner. The CPU developed for this supercomputer was further developed at a later stage as the CPU for the PlayStation 3 console. Find out what a **PlayStation 3 cluster** is and what it was used for?

PlayStation 3-cluster is een supercomputer die bestaat uit meerdere gekoppelde PS3-consoles, waarbij gebruik wordt gemaakt van hun krachtige 'Cell'-processors. Ze werden gebruikt voor goedkope high-performance computing

- c) You can build a supercomputer by putting a few computers together in a cluster. Here's what Oracle did with a collection of Raspberry Pi's, for example:
<https://blogs.oracle.com/developers/post/building-the-worlds-largest-raspberry-pi-cluster>
What specific operating system is running on this cluster?

Oracle linux

- d) Does Oracle's Raspberry Pi supercomputer appear in the list of the 500 fastest supercomputers in the world? Make a logical decision for this, without going through the entire list.
<https://www.top500.org/lists/top500/list/2023/06/>

Nee het komt er niet in voor want het heeft gewoon niet genoeg rekenkracht als andere doorsnee supercomputers

- e) What CPU architecture is used for the PlayStation 5 and Xbox Series X?
What operating systems run on these consoles?
What conclusion can you draw from the answer to the previous question?

Amd Zen 2

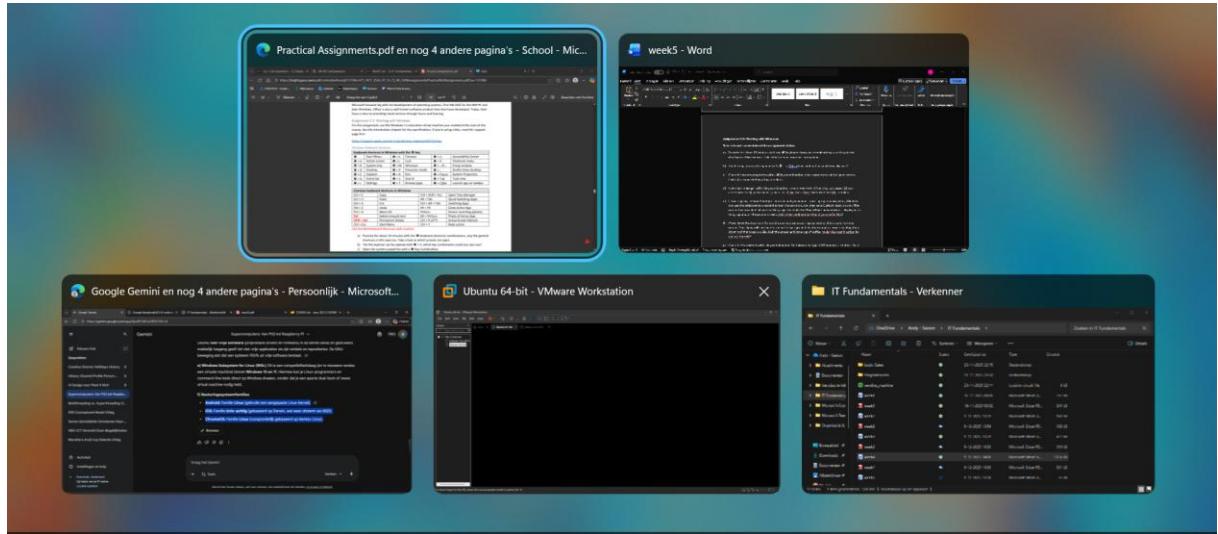
PS5 op FreeBSD, XBOX op eigen xbox os gebaseerd op windows

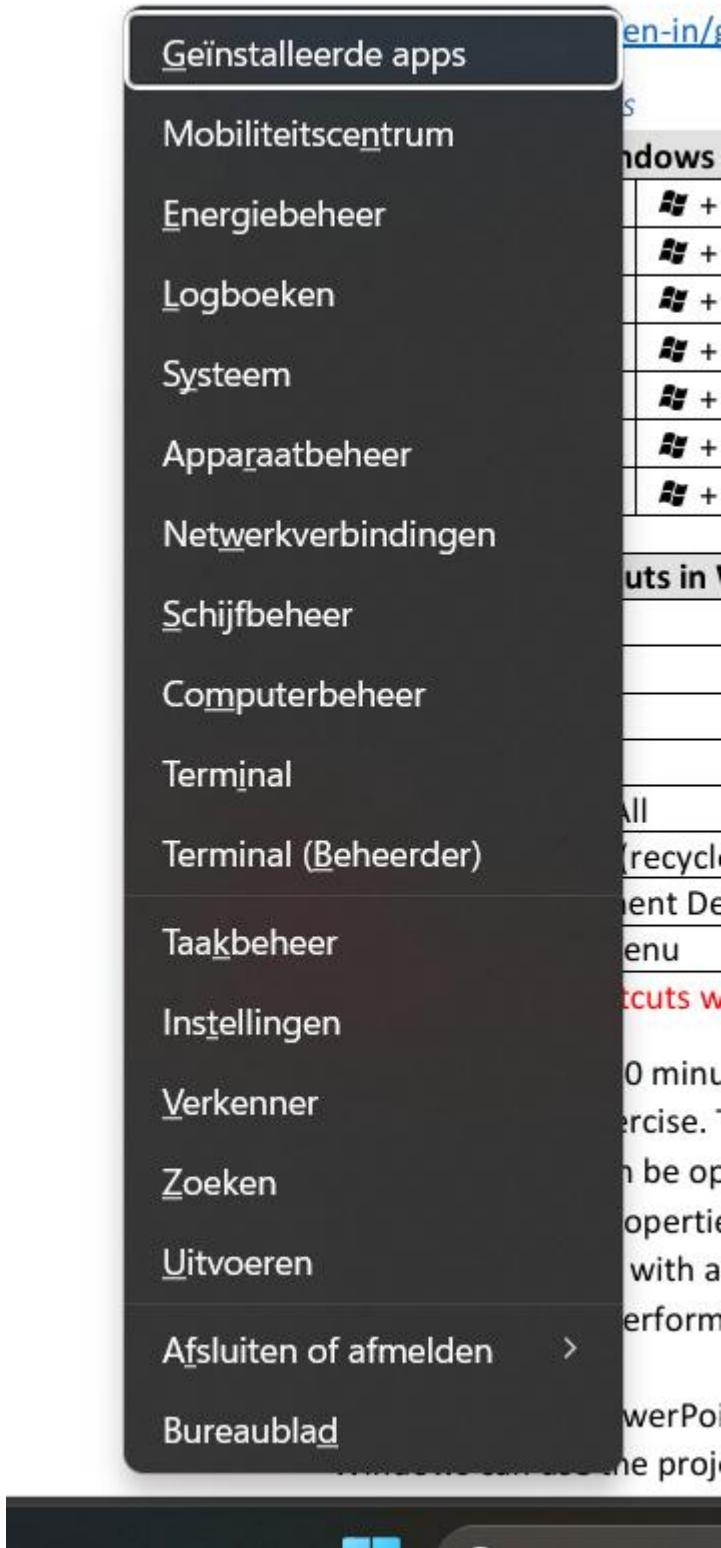
PS5 gebaseerd op unix achtig iets en XBOX op windows dus de software basis verschilt fundamenteel van elkaar

Assignment 5.3: Working with Windows

Take relevant screenshots of the assignments below

- a) Practice for about 10 minutes with the  keyboard shortcuts combinations, skip the general shortcuts in this exercise. Take a look at which screens are opened.

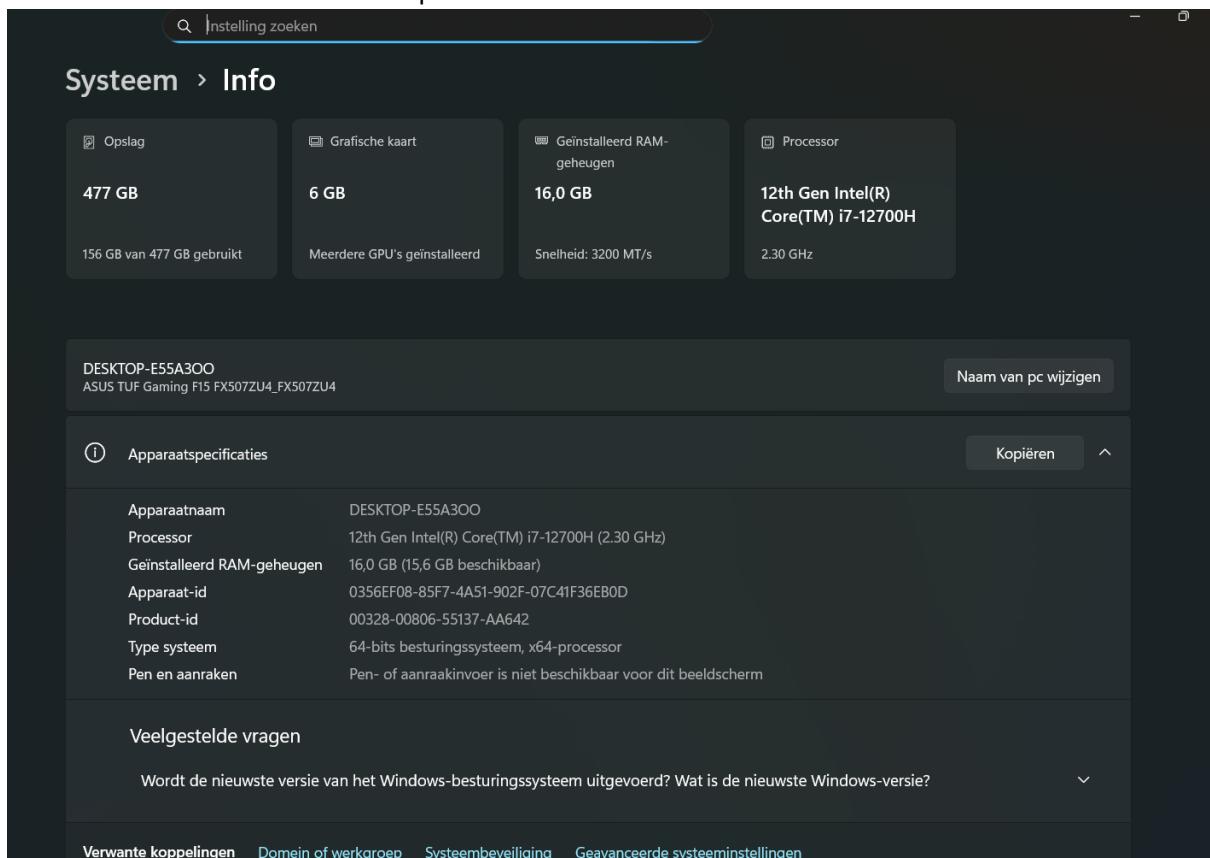




- b) The file explorer can be opened with + E, Which key combination could you also use?

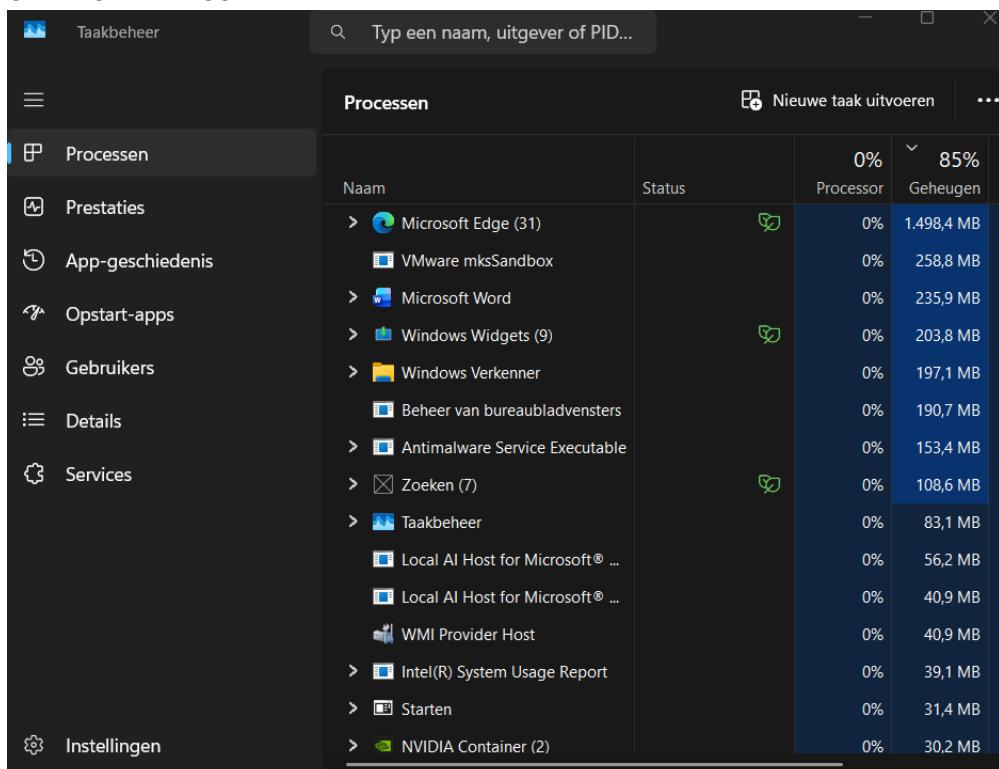
+ R en dan explorer typen

- c) Open the system properties with a **Windows** key combination, take a screenshot of the open screen. Paste this screenshot into this template.



- d) Open task manager with a key combination. Take screenshots of the tabs: processes (shows active processes), performance, and users. Place these three screenshots in this template.

CTRL + SHIFT + ESCAPE



Taakbeheer

- ☰
- Processen
- **Prestaties**
- ⌚ App-geschiedenis
- ⚡ Opstart-apps
- 👤 Gebruikers
- ☰ Details
- ⟳ Services
- ⚙️ Instellingen

Prestaties

Nieuwe taak uitvoeren ⚡ ...

Geheugen

Geheugenverbruik

60 seconden
Geheugensamenstelling

In gebruik (gecomprimeerd)	Beschikbaar	Snelheid
13,2 GB (304 MB)	2,4 GB	Gebruik Vormfa... Gereser...
Toegewezen	In cache	
20,2/22,2 GB	2,2 GB	
Wisselbare pool	Niet-wisselbare pool	
603 MB	566 MB	

Taakbeheer

Typ een naam, uitgever of PID...

- ☰
- Processen
- **Prestaties**
- ⌚ App-geschiedenis
- ⚡ Opstart-apps
- 👤 **Gebruikers**
- ☰ Details
- ⟳ Services
- ⚙️ Instellingen

Gebruikers

Nieuwe taak uitvoeren ⚡

Gebruiker	Status	5%	84%
		Processor	Geheugen
Andy (117)	Onderbro...	1,4%	3.053,0 MB
AppActions		0%	3,8 MB
Application Frame Host		0%	3,2 MB
Armoury Crate	Onderbro...	0%	0 MB
Armoury Crate User Sessio...		0%	8,5 MB
ArmourySocketServer		0%	0,2 MB
ArmourySwAgent (32-bits)		0%	1,1 MB
ASUS NodeJS Web Frame...		0%	0,9 MB
ASUS NodeJS Web Frame...		0%	4,3 MB
ASUS NodeJS Web Frame...		0%	1,9 MB
ASUS NodeJS Web Frame...		0%	0,7 MB
ASUS Optimization Startu...		0%	0,7 MB
ASUS Software Manager A...		0%	5,6 MB
ASUS System Analysis		0%	1,3 MB
Background Task Host	Onderbro...	0%	0 MB

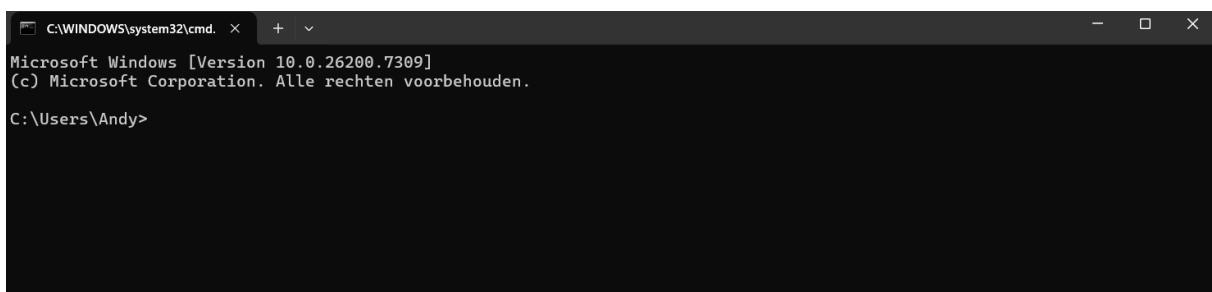
- e) If you're giving a PowerPoint presentation and you connect your laptop to a projector, Windows can use the projector as a second screen. For example, you may have Outlook open on your first screen that you don't show over the projector, while the PowerPoint presentation is displayed on the projector, or the second screen. Which key combination should you use for this?

Windows + P

- f) If you leave the classroom for a while and you leave your laptop behind, it is wise to lock the screen. Your Apps will continue to run in the background. So, for example, if you're waiting for a download that takes a while, lock the screen and get a cup of coffee. Which key combination do you use for this?

Windows + L

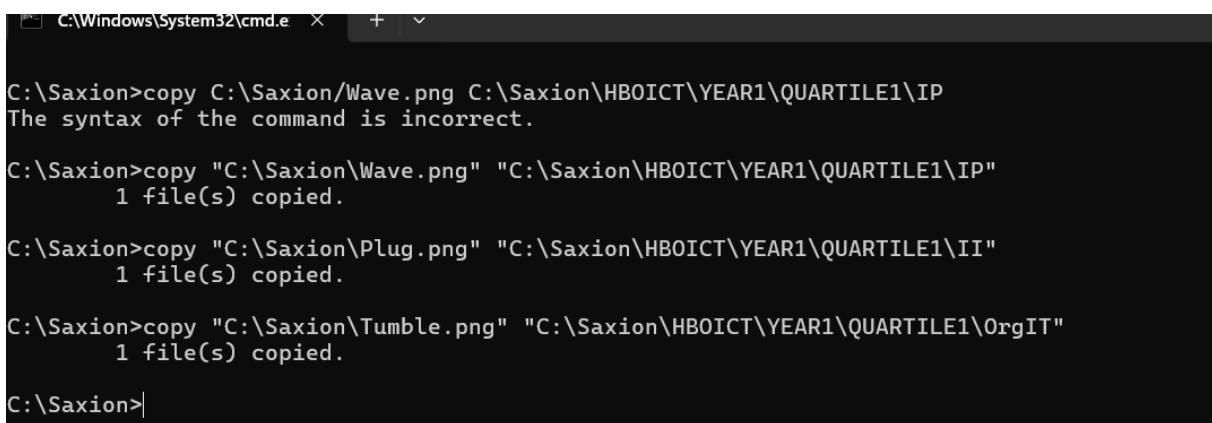
- g) Open the Run screen with a key combination. On this screen, type CMD and press <enter>. Take a screenshot of this result and paste it into this template.



A screenshot of a Windows Command Prompt window titled 'C:\WINDOWS\system32\cmd'. The window shows the following text:
Microsoft Windows [Version 10.0.26200.7309]
(c) Microsoft Corporation. Alle rechten voorbehouden.
C:\Users\Andy>

Working in the File Explorer

Relevant screenshots **copy** command:



A screenshot of a Windows Command Prompt window titled 'C:\Windows\System32\cmd.e'. The window shows the following text:
C:\Saxion>copy C:\Saxion\Wave.png C:\Saxion\HBOICT\YEAR1\QUARTILE1\IP
The syntax of the command is incorrect.
C:\Saxion>copy "C:\Saxion\Wave.png" "C:\Saxion\HBOICT\YEAR1\QUARTILE1\IP"
1 file(s) copied.
C:\Saxion>copy "C:\Saxion\Plug.png" "C:\Saxion\HBOICT\YEAR1\QUARTILE1\II"
1 file(s) copied.
C:\Saxion>copy "C:\Saxion\Tumble.png" "C:\Saxion\HBOICT\YEAR1\QUARTILE1\OrgIT"
1 file(s) copied.
C:\Saxion>

Relevant screenshots **tree** command:

```
C:\Saxion>tree
Folder PATH listing
Volume serial number is 6280-B5CA
C:.
+-- HBOICT
    +-- YEAR1
        +-- QUARTILE1
            +-- II
            +-- IP
            +-- OrgIT
        +-- QUARTILE2
        +-- QUARTILE3
        +-- QUARTILE4
    +-- YEAR2
        +-- QUARTILE1
        +-- QUARTILE2
        +-- QUARTILE3
        +-- QUARTILE4
    +-- YEAR3
        +-- QUARTILE1
        +-- QUARTILE2
        +-- QUARTILE3
        +-- QUARTILE4
```

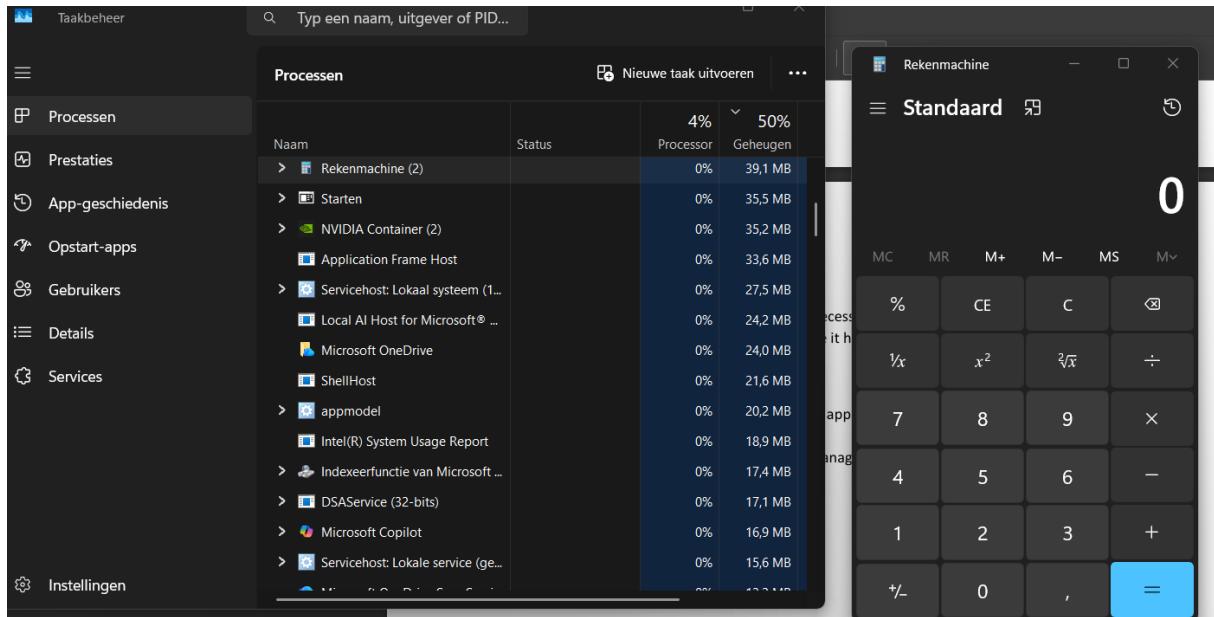
```
C:\Saxion>echo %username%
Andy
```

Relevant screenshots in the file explorer of the folder c:\Saxion + created zip file.

Naam	Gewijzigd op	Type	Grootte
HBOICT	9-12-2025 14:24	Bestandsmap	
Saxion	9-12-2025 14:24	Gecomprimeerde ...	935 kB

Terminating Processes

Relevant Screenshots Task Manager Window:



Install Software

Relevant screenshots that the following software is installed with winget:

- WinSCP
- Notepad++
- 7zip

```
C:\Windows\System32>winget install -e --id Mozilla.Firefox
Found Mozilla Firefox (en-US) [Mozilla.Firefox] Version 145.0.2
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://download-installer.cdn.mozilla.net/pub/firefox/releases/145.0.2/win64/en-US/Firefox%20Setup%20145.0.2.exe
[██████████] 81.9 MB / 81.9 MB
Successfully verified installer hash
Starting package install...
Successfully installed
```

```
Administrator: Opdrachtprompt 11.6 MB / 11.6 MB
Successfully verified installer hash
Starting package install...
Successfully installed

C:\Windows\System32>winget search Notepad++
Name           Id             Version Match      Source
-----
Notepad++     Notepad++.Notepad++ 8.8.8   ProductCode: notepad++ winget
Notepad Next  dail18859.NotepadNext 0.12    Tag: notepad++      winget

C:\Windows\System32>winget install Notepad++
Found Notepad++ [Notepad++.Notepad++] Version 8.8.8
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://github.com/notepad-plus-plus/notepad-plus-plus/releases/download/v8.8.8/npp.8.8.8.Installer.x64.exe
6.61 MB / 6.61 MB
Successfully verified installer hash
Starting package install...
Successfully installed

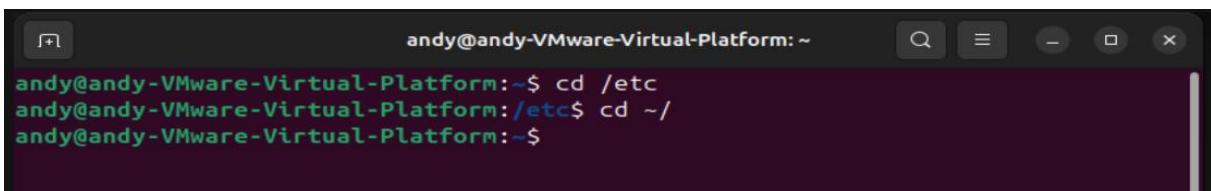
C:\Windows\System32>winget search 7zip
Name           Id             Version Match      Source
-----
7-Zip          7zip.7zip       25.01   Moniker: 7zip winget
Advanced Archive Password Recovery Elcomsoft.ArchivePassword 4.66.266.6965 Tag: 7zip winget
NanaZip        M2Team.NanaZip 5.0.1263.0 Tag: 7zip winget
NanaZip Preview M2Team.NanaZip.Preview 6.0.1461.0 Tag: 7zip winget
7-Zip ZS       mcmilk.7zip-zstd 24.09 ZS v1.5.7 R1 Tag: 7zip winget
7-Zip Alpha (exe) 7zip.7zip.Alpha.exe 24.01 Tag: 7zip winget
7-Zip Alpha (msi) 7zip.7zip.Alpha.msi 24.01.00.0 Tag: 7zip winget
7zr            7zip.7zr        25.01   Tag: 7zip winget
QNapi          QNapi.QNapi     0.2.3    Tag: p7zip winget

C:\Windows\System32>winget install 7-Zip
'wiwinget' is not recognized as an internal or external command,
operable program or batch file.

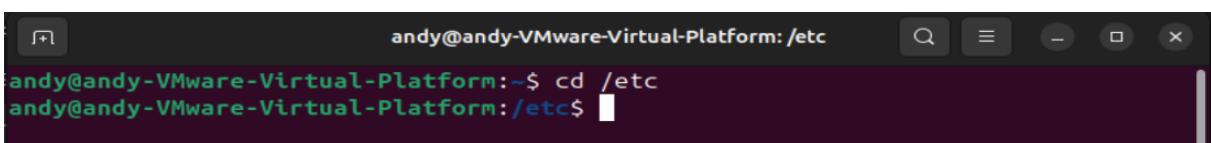
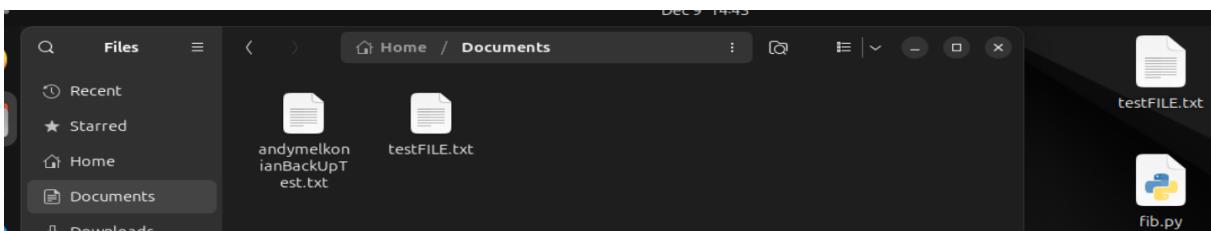
C:\Windows\System32>winget install 7-Zip
Found 7-Zip [7zip.7zip] Version 25.01
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://7-zip.org/a/7z2501-x64.exe
1.56 MB / 1.56 MB
Successfully verified installer hash
Starting package install...
Successfully installed
```

Assignment 5.4: Working with Linux

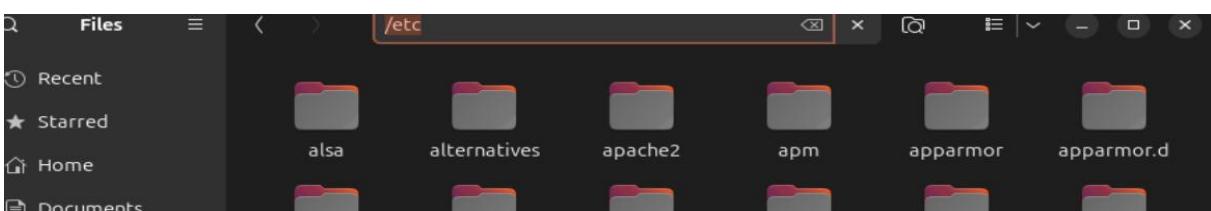
Relevant screenshots + motivation



```
andy@andy-VMware-Virtual-Platform:~$ cd /etc
andy@andy-VMware-Virtual-Platform:/etc$ cd ~/
andy@andy-VMware-Virtual-Platform:~$
```



```
andy@andy-VMware-Virtual-Platform:~$ cd /etc
andy@andy-VMware-Virtual-Platform:/etc$
```



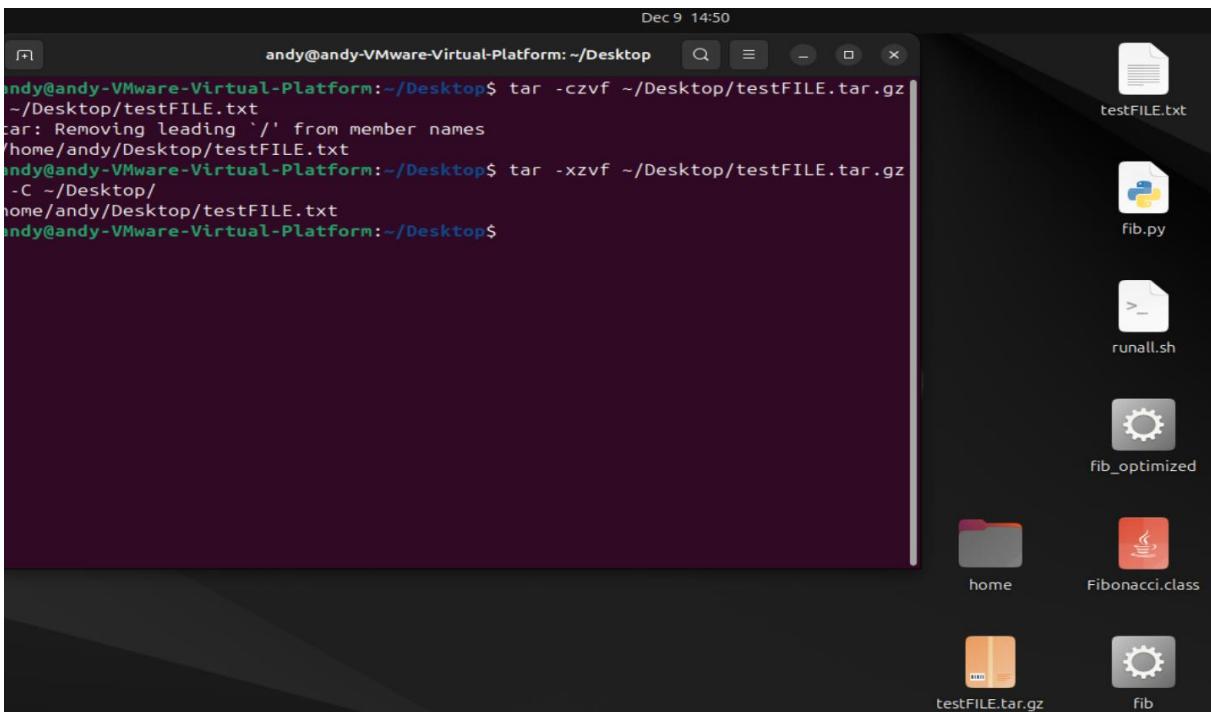
Het verschil is dat het tree based is ipv driver based, windows heeft gewoon :C, :D etc en ubuntu niet het is allemaal 1 grote tree.

/etc is de centrale plek voor configuratie bestanden voor het gedrag van het systeem en de applicaties, het is dus erg belangrijk

tar -cvf archiefnaam.tar bestandsnaam.txt (comprimeren)

tar -xvf archiefnaam.tar (uitpakken)

```
Dec 9 14:50
andy@andy-VMware-Virtual-Platform:~/Desktop$ tar -czvf ~/Desktop/testFILE.tar.gz ~/Desktop/testFILE.txt
tar: Removing leading `/' from member names
/home/andy/Desktop/testFILE.txt
andy@andy-VMware-Virtual-Platform:~/Desktop$ tar -xzvf ~/Desktop/testFILE.tar.gz
-C ~/Desktop/
/home/andy/Desktop/testFILE.txt
andy@andy-VMware-Virtual-Platform:~/Desktop$
```

A screenshot of a Linux desktop environment, likely Ubuntu. On the right side, there's a dock with several icons: a document icon labeled 'testFILE.txt', a Python icon labeled 'fib.py', a terminal icon labeled 'runall.sh', a gear icon labeled 'fib_optimized', a folder icon labeled 'home', a Java icon labeled 'Fibonacci.class', a terminal icon labeled 'testFILE.tar.gz', and a gear icon labeled 'fib'. The terminal window in the center shows the user running tar commands to compress and decompress a file named 'testFILE.txt'.

```
andy@andy-VMware-Virtual-Platform:~/Desktop$ sudo apt install htop
[sudo] password for andy:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  htop
0 upgraded, 1 newly installed, 0 to remove and 81 not upgraded.
Need to get 171 kB of archives.
After this operation, 434 kB of additional disk space will be used.
```

Htop is een systeemmonitor voor linux systeem het word gebruikt om real time processen in te zien, eigenlijk een soort taakbeheer

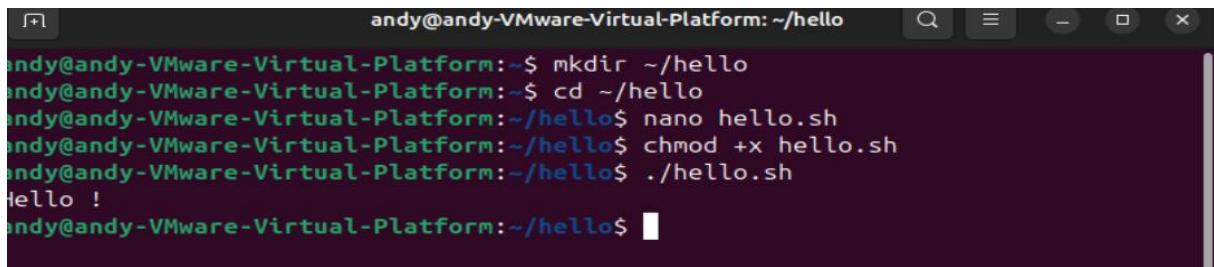
```
andy@andy-Virtual-Platform:~ Processing triggers for man-db (2.12.0-4build2) ...  
andy@andy-Virtual-Platform:~ Processing triggers for desktop-file-utils (0.27-2build1) ...  
andy@andy-Virtual-Platform:~$ neofetch  
      .-+ooossssoo+-.  
      `:+ssssssssssssssssssssssssss+:`  
      -+ssssssssssssssssssssyyssss+-  
      .osssssssssssssssssdMMMNyssssso.  
      /ssssssssssshdmNNmmyNMMMHssssss/  
      +ssssssssshmydMMMMMMNdddyyssssss+  
      /ssssssssshNMMMyhyyyyhmNMMMNhssssss/  
.ssssssssdMMMNhssssssssssshNMMMdssssss.  
+sssshhhyNMMNyssssssssssssyNMMMyssssss+  
ossyNMMMNyMMhssssssssssssshmmhbssssssso  
ossyNMMMNyMMhssssssssssssshmmhbssssssso  
+sssshhhyNMMNyssssssssssssyNMMMyssssss+  
.ssssssssdMMMNhssssssssssshNMMMdssssss.  
/ssssssssshNMMMyhyyyyhdNMMMNhssssss/  
+ssssssssdmydMMMMMMMdddyyssssss+  
/sssssssssssshdmNNNmyNMMMHssssss/  
.osssssssssssssssssdMMMNyssssso.  
-+ssssssssssssssssssyyssss+-  
`:+ssssssssssssssssssssssssss+:`  
.-+ooossssoo+-.  
andy@andy-Virtual-Platform  
-----  
OS: Ubuntu 24.04.3 LTS x86_64  
Host: VMware Virtual Platform None  
Kernel: 6.14.0-36-generic  
Uptime: 12 mins  
Packages: 1736 (dpkg), 12 (snap)  
Shell: bash 5.2.21  
Resolution: 1280x800  
DE: GNOME 46.0  
WM: Mutter  
WM Theme: Adwaita  
Theme: Yaru-dark [GTK2/3]  
Icons: Yaru-dark [GTK2/3]  
Terminal: gnome-terminal  
CPU: 12th Gen Intel i7-12700H (4) @  
GPU: 00:0f.0 VMware SVGA II Adapter  
Memory: 1164MiB / 3867MiB
```

catToont de **volledige inhoud** van een bestand in de terminal

wc Telt het aantal **regels**, **woorden** en **bytes** in een bestand

Assignment 5.5: Users and permissions on Linux

Relevant screenshots + motivation



```
andy@andy-VMware-Virtual-Platform:~$ mkdir ~/hello
andy@andy-VMware-Virtual-Platform:~$ cd ~/hello
andy@andy-VMware-Virtual-Platform:~/hello$ nano hello.sh
andy@andy-VMware-Virtual-Platform:~/hello$ chmod +x hello.sh
andy@andy-VMware-Virtual-Platform:~/hello$ ./hello.sh
Hello !
andy@andy-VMware-Virtual-Platform:~/hello$
```

Assignment 5.6: View the contents of files

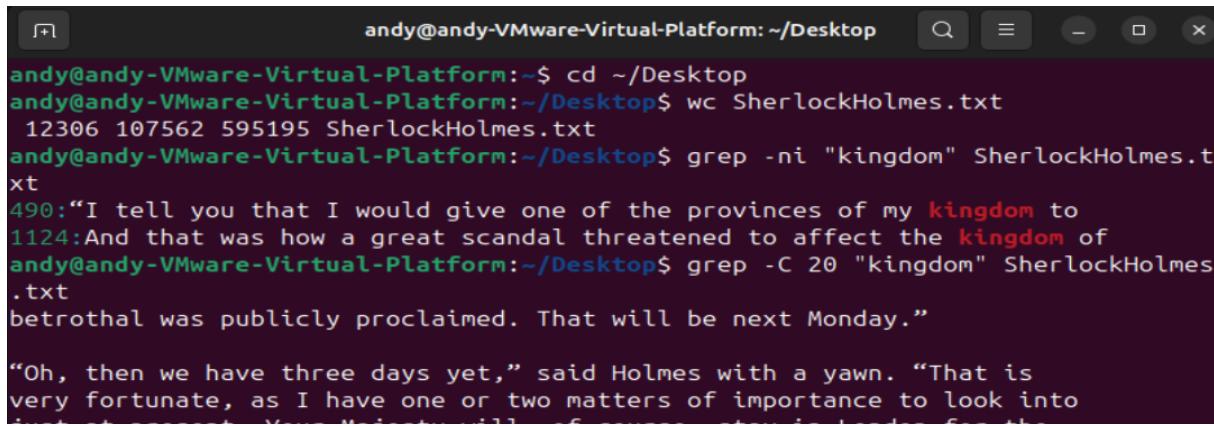
Relevant screenshots + motivation

less Hiermee kunt u **grote bestanden** pagina voor pagina bekijken en scrollen.

Tail Toont de **laatste** 10 regels van een bestand.

Head Toont de **eerste** 10 regels van een bestand.

Grep Zoekt naar een specifiek **tekstpatroon** of een woord binnen de inhoud van een bestand

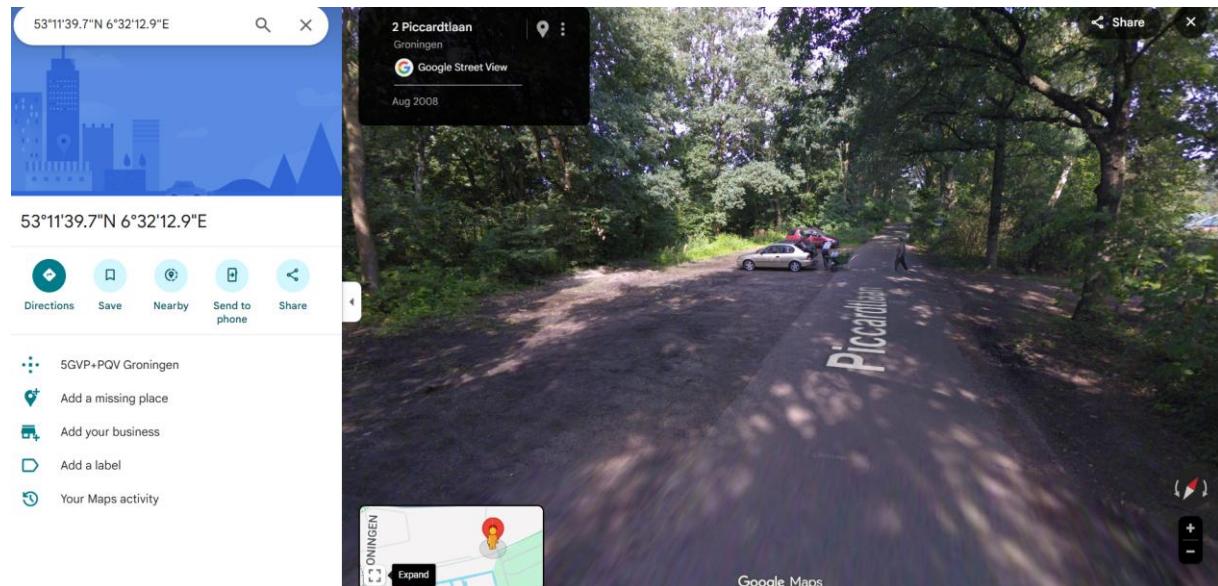


```
andy@andy-VMware-Virtual-Platform:~$ cd ~/Desktop
andy@andy-VMware-Virtual-Platform:~/Desktop$ wc SherlockHolmes.txt
12306 107562 595195 SherlockHolmes.txt
andy@andy-VMware-Virtual-Platform:~/Desktop$ grep -ni "kingdom" SherlockHolmes.txt
490:"I tell you that I would give one of the provinces of my kingdom to
1124:And that was how a great scandal threatened to affect the kingdom of
andy@andy-VMware-Virtual-Platform:~/Desktop$ grep -C 20 "kingdom" SherlockHolmes.txt
betrothal was publicly proclaimed. That will be next Monday."
"Oh, then we have three days yet," said Holmes with a yawn. "That is
very fortunate, as I have one or two matters of importance to look into
in the meantime. You may be assured, however, that I shall be back for the
```

Assignment 5.7: Digital forensics

Relevant screenshots + motivation

```
GPS Altitude : 42 m Above Sea Level
GPS Date/Time : 2020:11:07 14:08:57Z
GPS Latitude : 53 deg 11' 39.68" N
GPS Longitude : 6 deg 32' 12.90" E
Focal Length : 3.5 mm
GPS Position : 53 deg 11' 39.68" N, 6 deg 32' 12.90" E
Light Value : 7.7
andy@andy-VMware-Virtual-Platform:~/Desktop$ ^C
```



Groningen

```
andy@andy-VMware-Virtual-Platform:~/Desktop$ mv oldcar.jpg oldcar
andy@andy-VMware-Virtual-Platform:~/Desktop$ file oldcar
oldcar: JPEG image data, JFIF standard 1.01, aspect ratio, density 1x1, segment
length 16, Exif Standard: [TIFF image data, big-endian, direntries=10, manufacturer=motorola, model=moto g(6) play, xresolution=160, yresolution=168, resolutionunit=2, software=aljeter-user 9 PPPS29.55-35-18-7 6a0d0 release-keys, datetime=2020:11:07 15:08:57, GPS-Data], baseline, precision 8, 4160x3120, components 3
andy@andy-VMware-Virtual-Platform:~/Desktop$
```

Ja word nog steeds als JPEG gezien

Assignment 5.8: Steganography

Relevant screenshots + motivation

```
andy@andy-VMware-Virtual-Platform:~/Desktop$ tr -d '\n\r' < base64code.txt | base64 -d > decoded_image_filtered.gif
andy@andy-VMware-Virtual-Platform:~/Desktop$
```

```

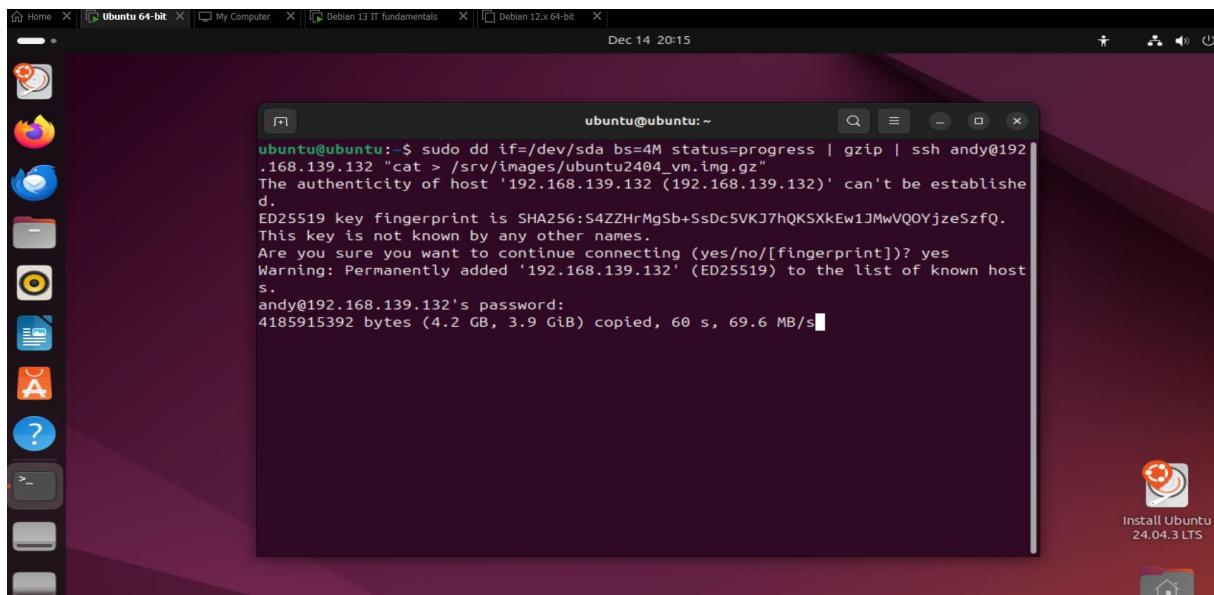
andy@andy-VMware-Virtual-Platform: ~/Desktop
.1-15 [144 kB]
etched 307 kB in 0s (1,651 kB/s)
electing previously unselected package libmcrypt4.
Reading database ... 203233 files and di open ~ Desktop
reparing to unpack .../libmcrypt4_2.5.8-1_amd64.deb
packing libmcrypt4 (2.5.8-7) ...
electing previously unselected package libmhash2.
reparing to unpack .../libmhash2_0.9.9.9-9build1_amd64.deb
packing libmhash2:amd64 (0.9.9.9-9build1) ...
electing previously unselected package stegohide.
reparing to unpack .../stegohide_0.5.1-15_amd64.deb
packing stegohide (0.5.1-15) ...
etting up libmhash2:amd64 (0.9.9.9-9build1) ...
etting up libmcrypt4 (2.5.8-7) ...
etting up stegohide (0.5.1-15) ...
rocessing triggers for man-db (2.12.0-4bu
rocessing triggers for libc-bin (2.39-0ub
andy@andy-VMware-Virtual-Platform: ~/Desktop
nter passphrase:
teghide: could not extract any data with
andy@andy-VMware-Virtual-Platform: ~/Desktop
nter passphrase:
rote extracted data to "message.txt".
andy@andy-VMware-Virtual-Platform: ~/Desktop

```

Assignment 5.9: Capture disk images

Make relevant screenshots + motivation:

- Proof that the Debian 13 server stored a back-up image of the Ubuntu 24.04 Desktop VM.
- Proof that you can restore the back-up image into an empty VM.



```

andy@debian:~$ ip a
1: lo <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    qlen 1000
        link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host noprefixroute
                valid_lft forever preferred_lft forever
2: ens33 <NOARP,BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
    qlen 1000
        link/ether 00:0c:29:f3:e3:21 brd ff:ff:ff:ff:ff:ff
        altname enp2s1
        altname enx000c29f3e321
        inet 192.168.139.132/24 brd 192.168.139.255 scope global dynamic noprefixroute
            valid_lft 1758sec preferred_lft 1758sec
            inet6 fe80::20c:29ff:fe3:e321/64 scope link noprefixroute
                valid_lft forever preferred_lft forever
andy@debian:~$ 

```

valid_lft forever preferred_lft forever

```

andy@debian:~$ ls -lh /srv/images/
total 2.5G
-rw-rw-r-- 1 andy andy 2.5G Dec 14 21:19 ubuntu2404_vm.img.gz
andy@debian:~$ 

```

```

openmediavault 7.7.15-2 (Sandworm) omv579053 tty1
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To manage the system visit the openmediavault workbench:

ens33: 192.168.139.11

By default the workbench administrator account has the
username 'admin' and password 'openmediavault'.
It is recommended that you change the password for this account
within the workbench or using the 'omv-firstaid' CLI command.

For more information regarding this appliance, please visit the
web site: https://www.openmediavault.org

omv579053 login:

```

De opdracht om de gecomprimeerde image via SSH en dd te **capturen** en te **restoren** is **technisch succesvol**. Het volledige Ubuntu-image is van de server naar de harde schijf van de nieuwe VM geschreven. De restore is echter uitgevoerd naar een **virtuele harde schijf (.vmdk)** die oorspronkelijk toebehoorde aan een **Debian/OpenMediaVault server**, wat leidde tot een conflict in de opstartvolgorde van de VM (waardoor de Debian-bootmelding verscheen in plaats van de Ubuntu-bootloader).

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