



**UNIVERSITE DE TECHNOLOGIE D'HAÏTI**  
**(UNITECH)**

**FACULTE DES SCIENCES INFORMATIQUES**

TRAVAUX DIRIGES	INSTALLATION ET COMMANDES LINUX
MATIERE	CYBERSECURITE
ETUDIANTE	CADET ESTHER
NIVEAU	II (3EME ANNEE)
DEPARTEMENT	INFORMATIQUES
ENCADREUR	SAINT AMOUR ISMAEL
DATE	LE/4/1/25

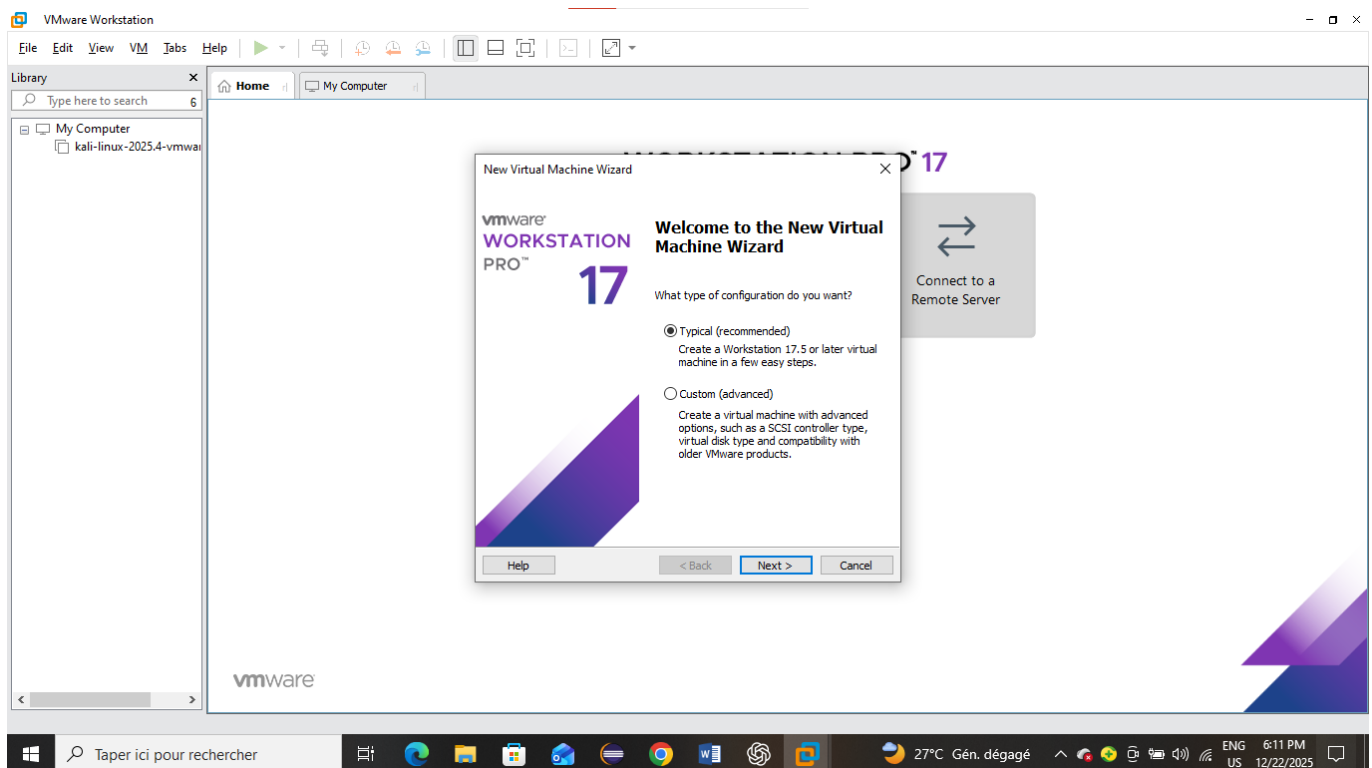
**INTRO** Ce travail dirige a pour objectif de m'initier à l'installation de Kali Linux dans un environnement virtualisé et à la manipulation des commandes de base du système Linux.

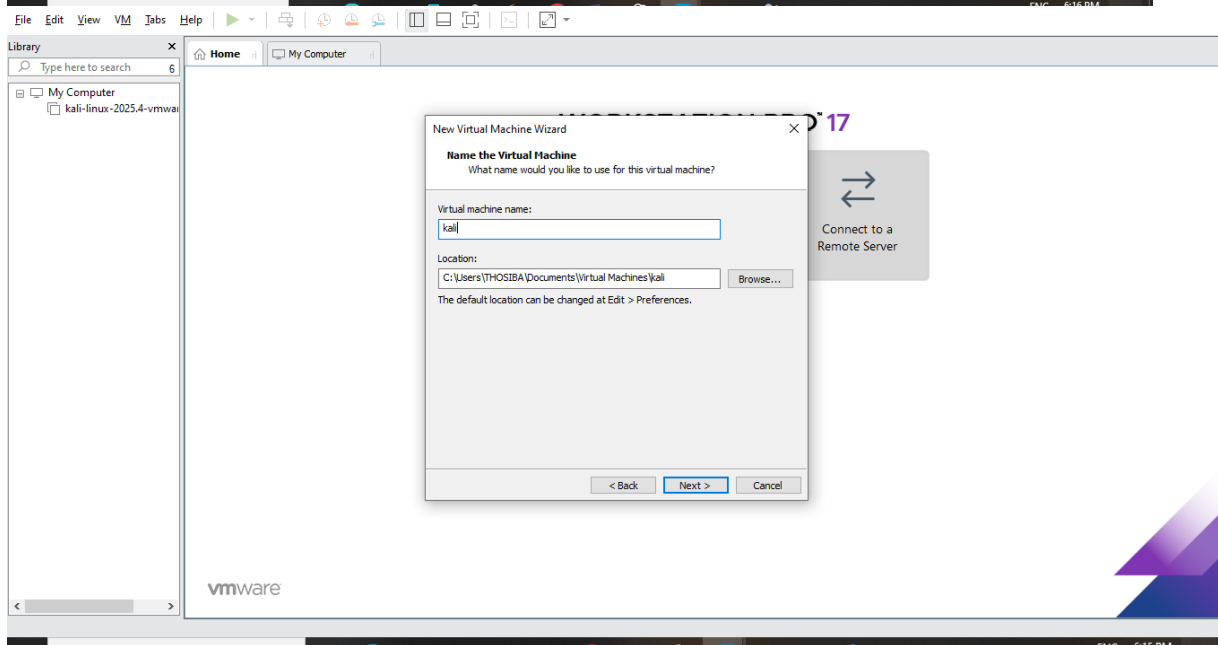
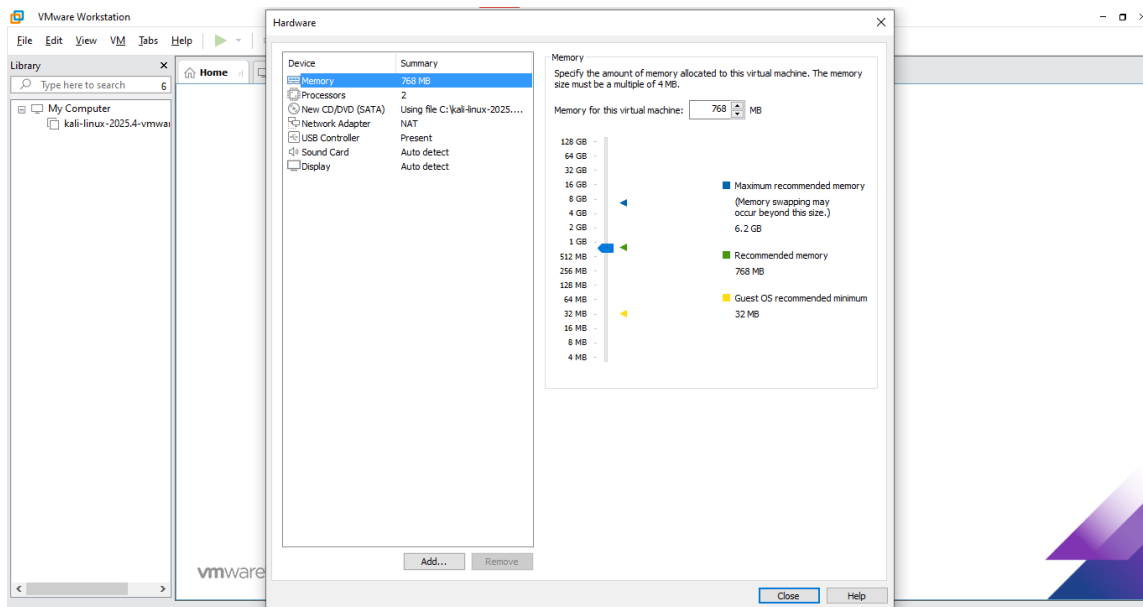
Il permet également de comprendre l'organisation des fichiers, la gestion des processus, l'analyse du système et l'exploitation du réseau.

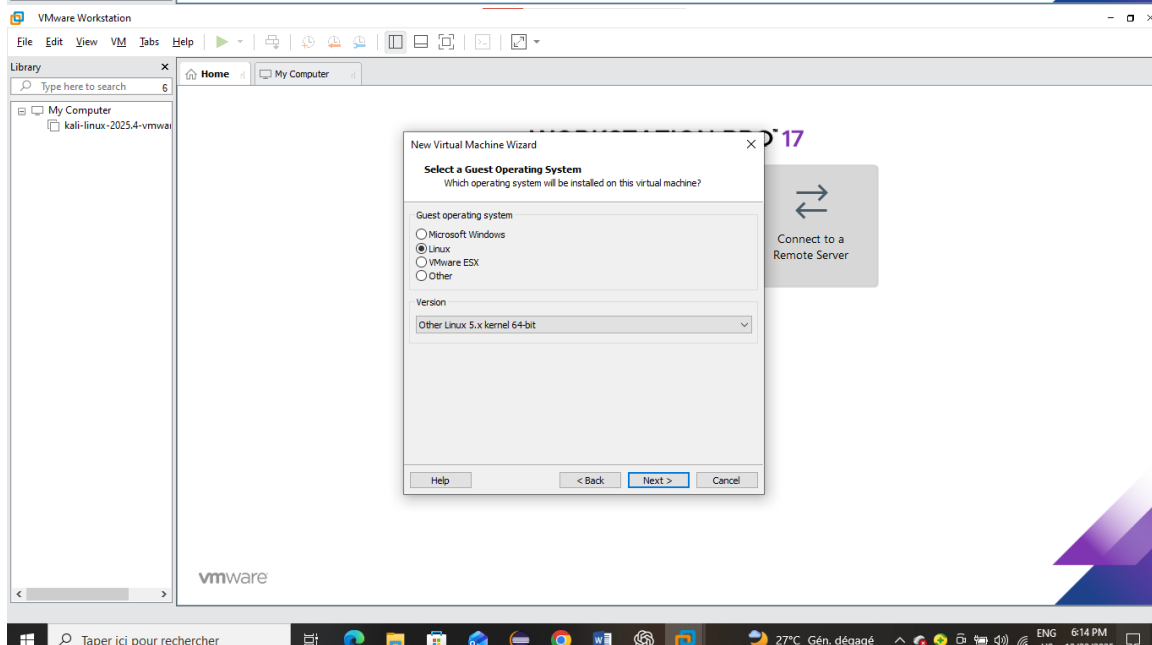
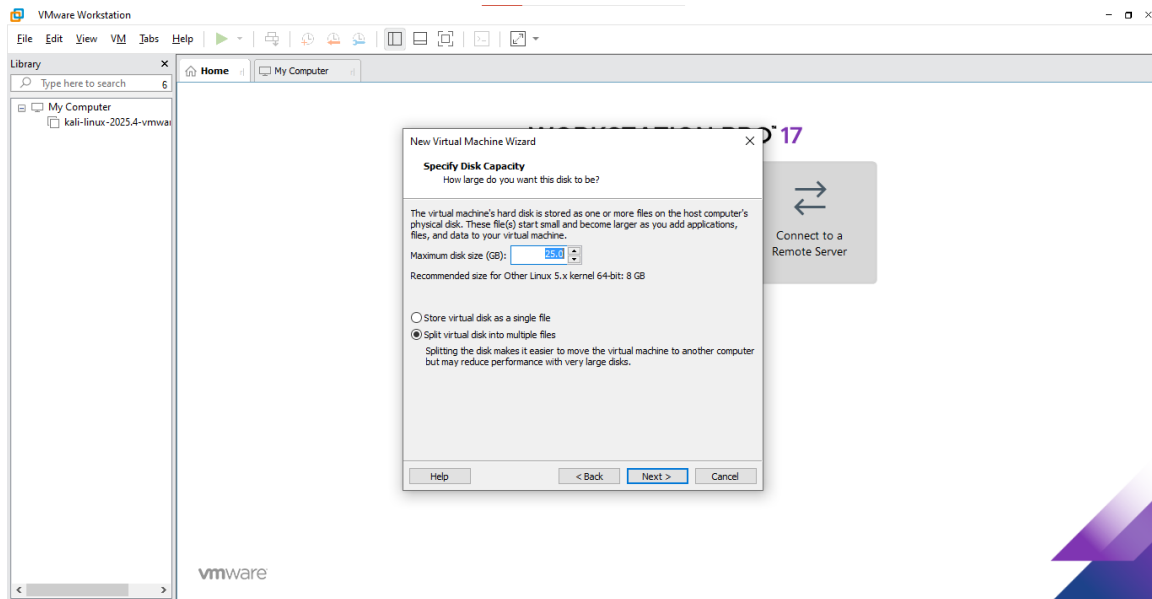
## ➤ INSTALLATION DE KALI LINUX

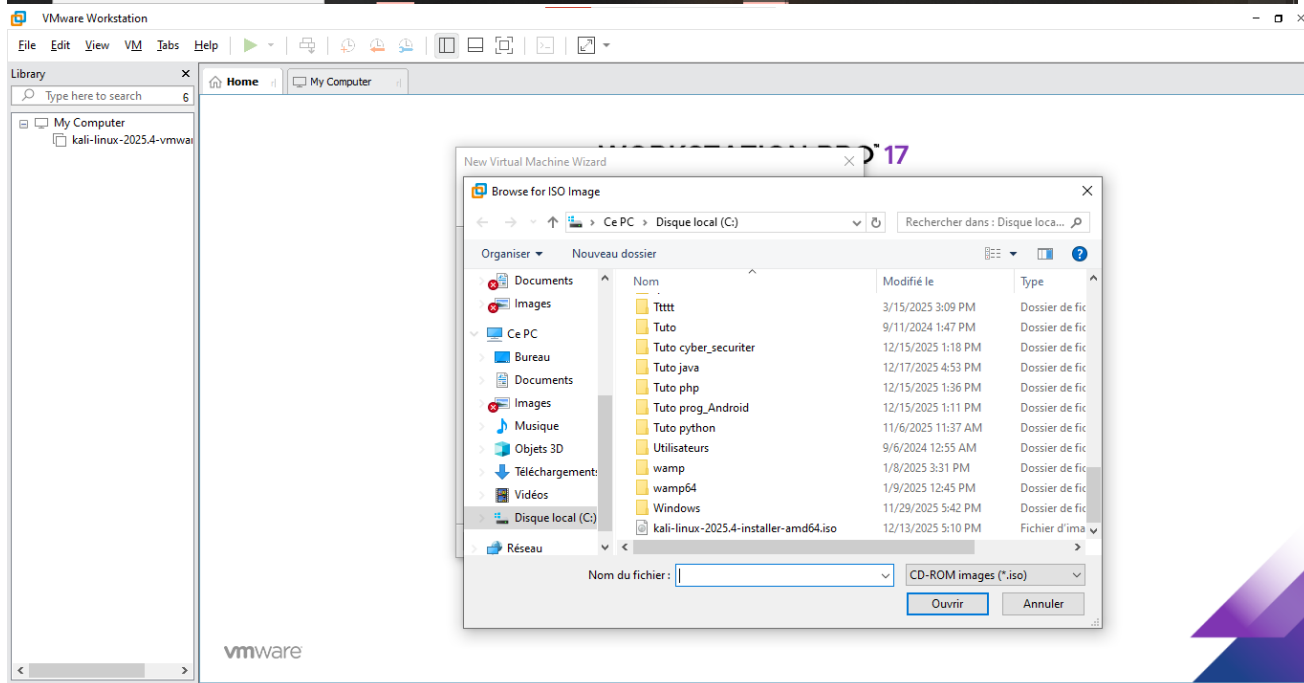
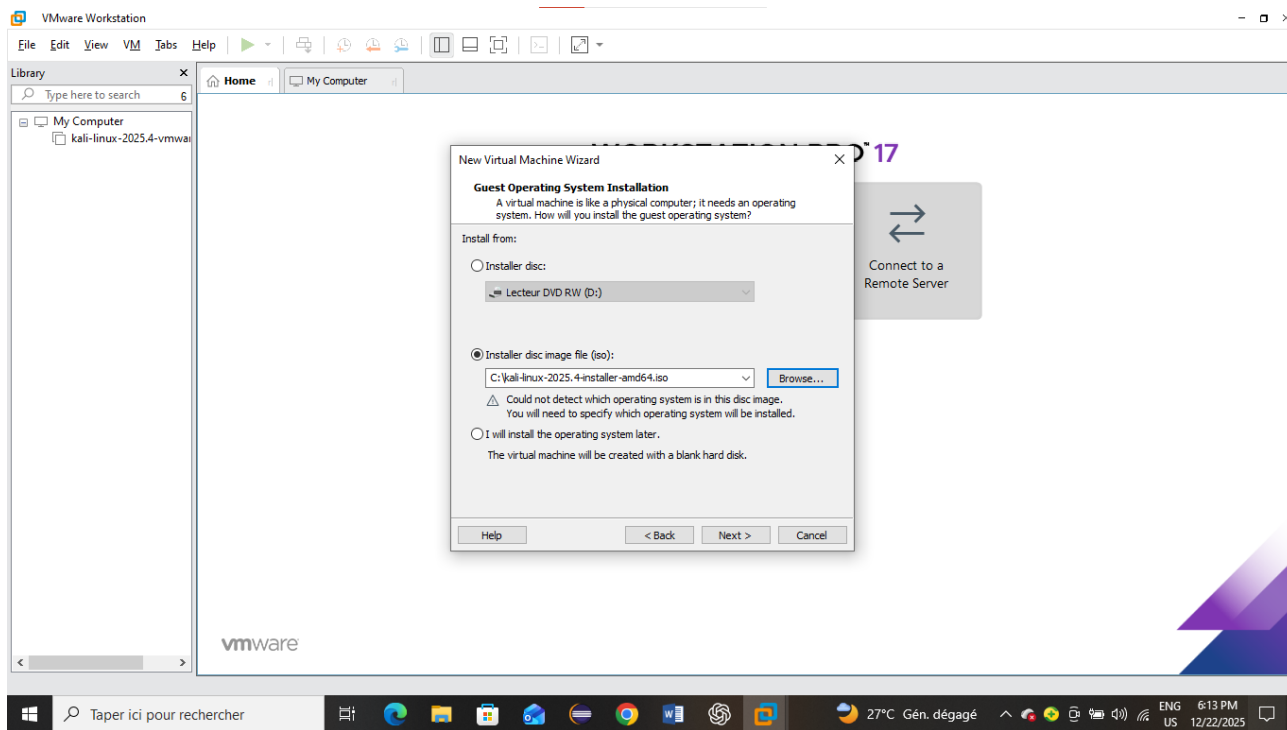
Kali Linux a été installé sur une machine virtuelle à l'aide du logiciel **VMWARE**.

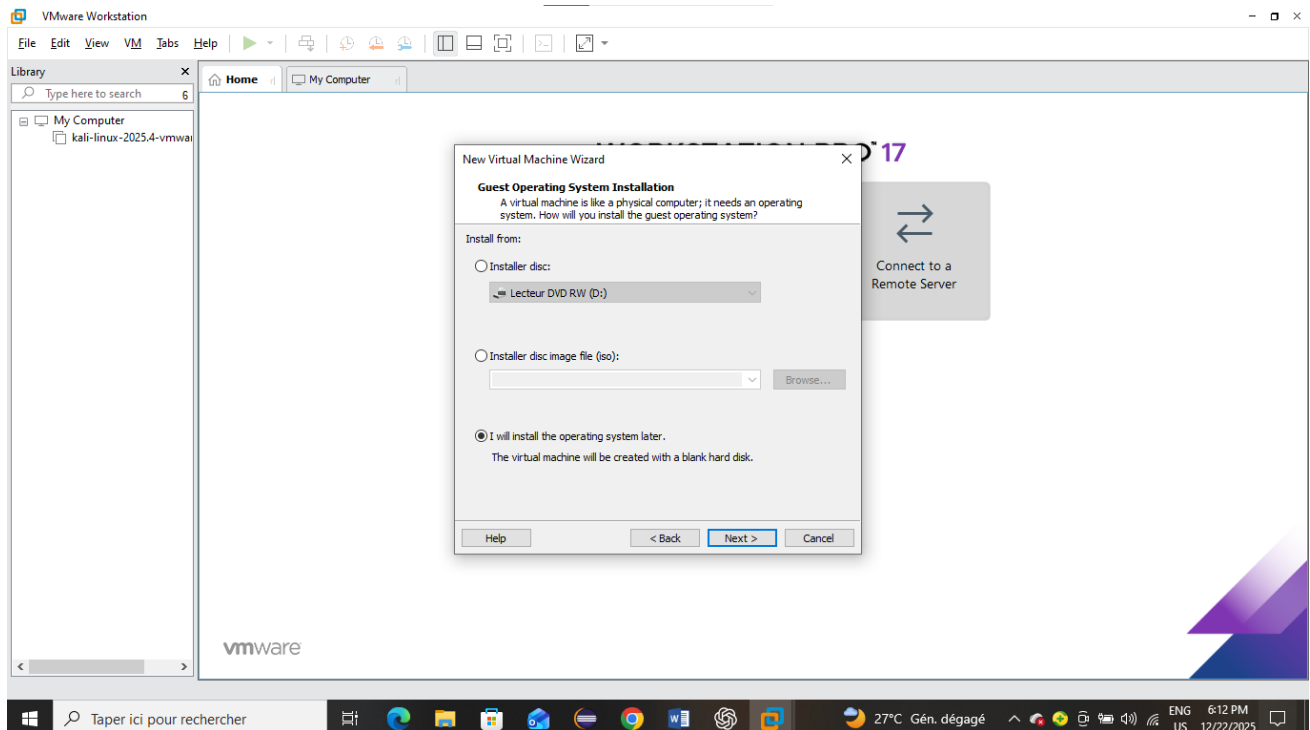
L'installation a été réalisée en mode graphique en suivant les étapes recommandées (choix de la langue, du clavier, du disque et de l'utilisateur).



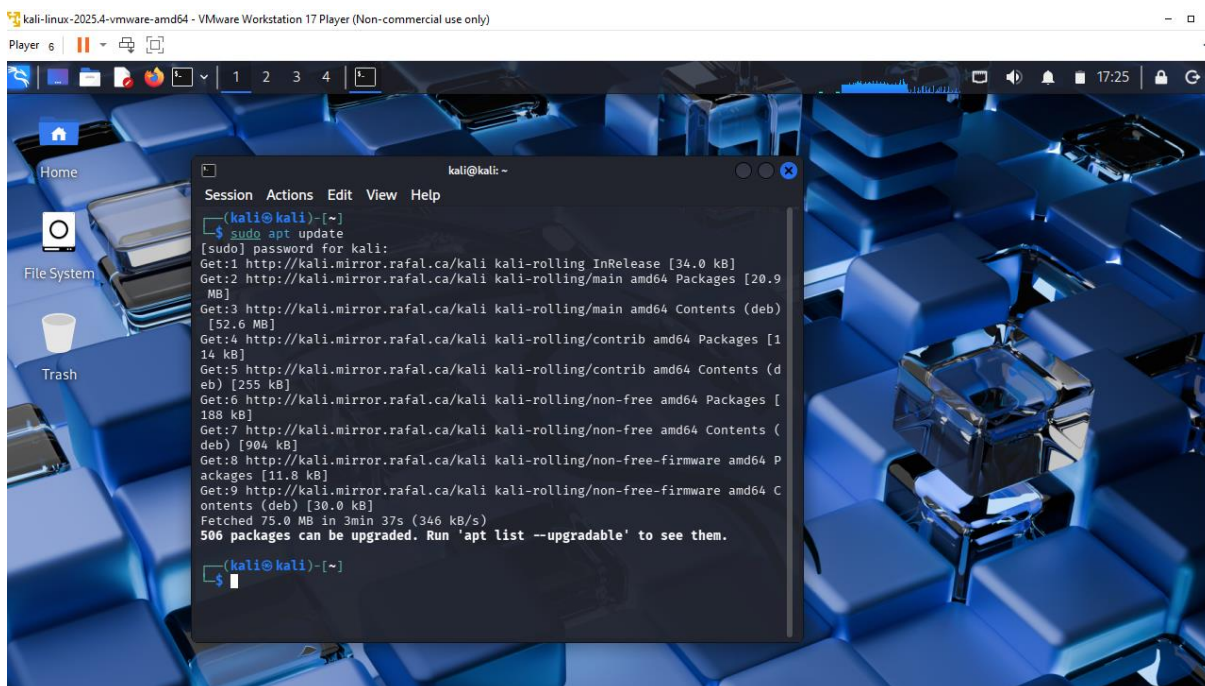


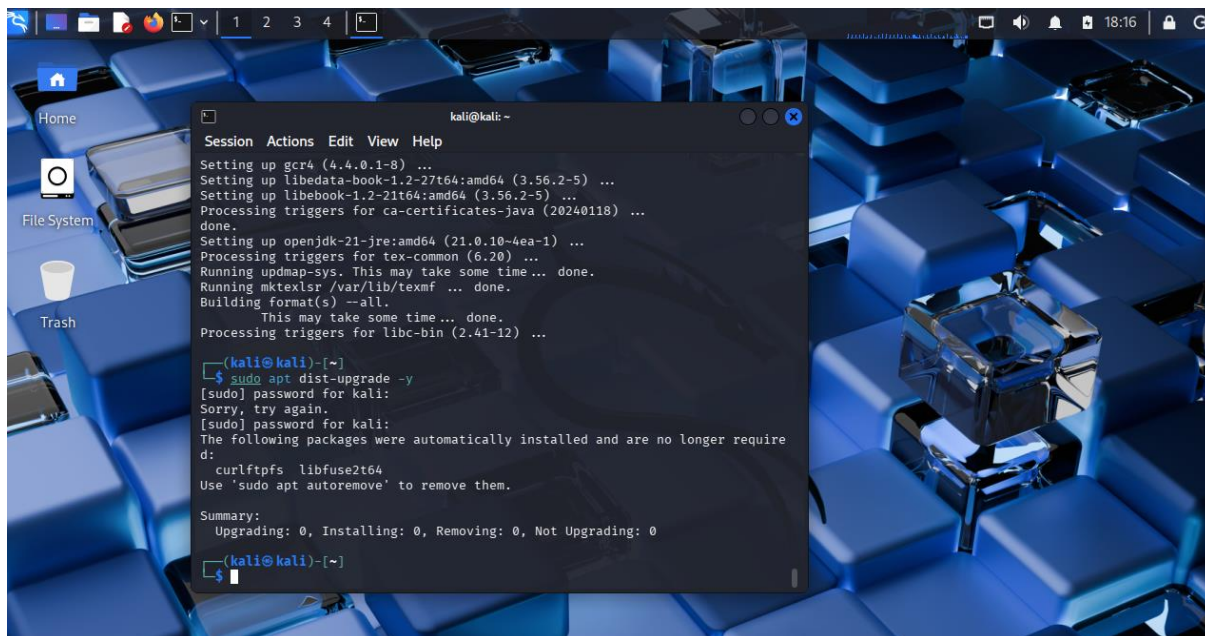




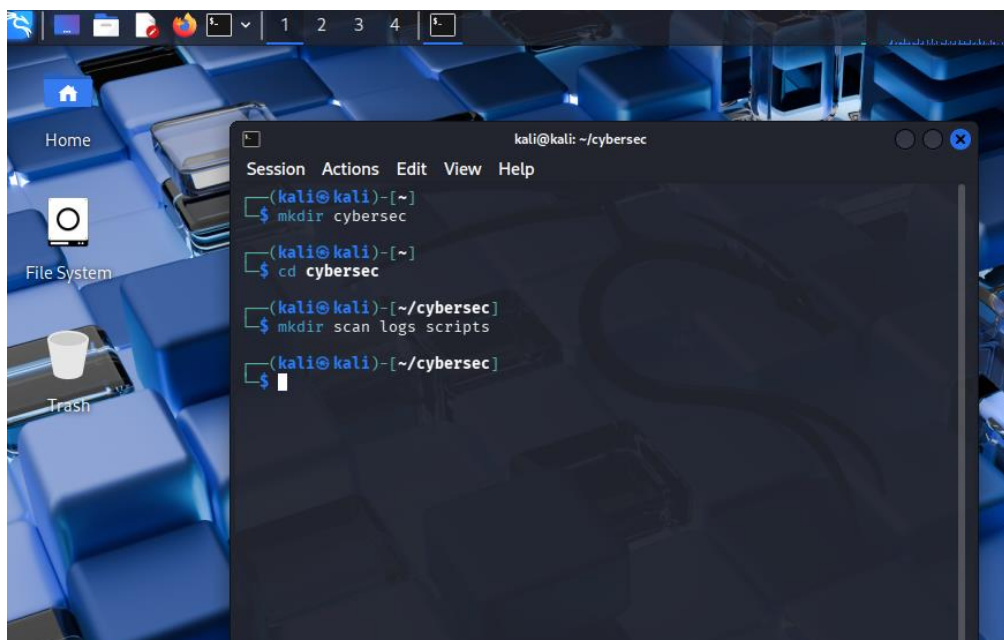


➤ Après l'installation, le système a été mis à jour avec la commande suivante

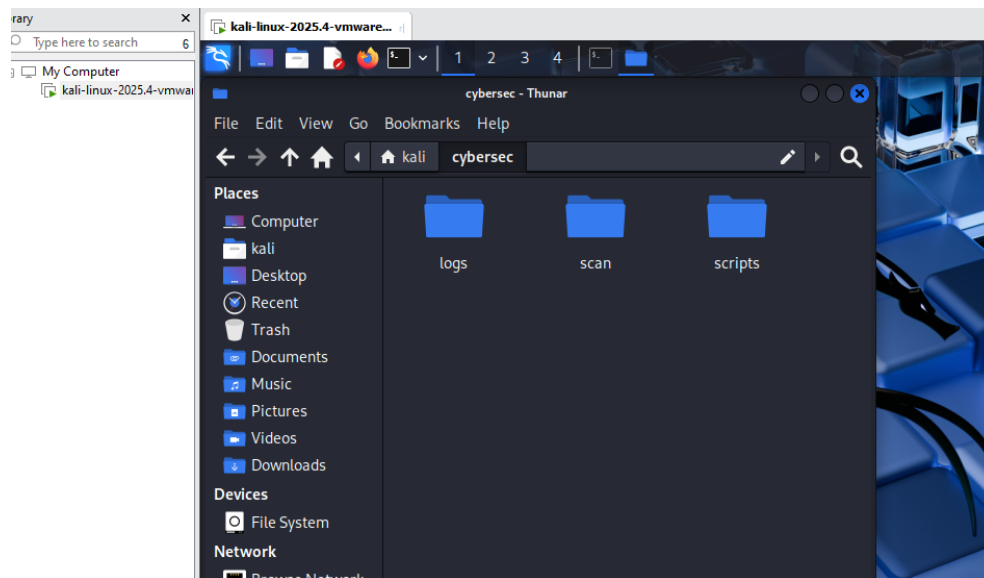




- Un dossier principal nomme cybersec a été créé, contenant trois sous-dossiers : scan, logs et scripts.







- Deux fichiers notes.txt ont été créés dans les dossiers dans les dossiers **scan** et **logs**, puis du contenu y a été ajouté.

```
(kali@kali)-[~/cybersec]
$ touch scan/notes.txt logs/notes.txt
(kali@kali)-[~/cybersec]
```

```
(kali@kali)-[~/cybersec]
$ echo "Note du scan reseau" >scan/notes.txt

(kali@kali)-[~/cybersec]
$ echo "logs du systeme kali" >logs/notes.txt

(kali@kali)-[~/cybersec]
$ cat scan/notes.txt
Note du scan reseau

(kali@kali)-[~/cybersec]
$ cat logs/notes.txt
logs du systeme kali

(kali@kali)-[~/cybersec]
$
```



- Le fichier notes.txt a été copié dans le dossier **scripts**, ensuite déplacé et supprimé selon les consignes.

```
(kali@kali)-[~/cybersec]
$ cp scan/notes.txt scripts/

(kali@kali)-[~/cybersec]
$ ls scripts
notes.txt

(kali@kali)-[~/cybersec]
$
```

```
(kali@kali)-[~/cybersec]
$ ls scripts
notes.txt

(kali@kali)-[~/cybersec]
$ mv scripts/notes.txt
mv: missing destination file operand after 'scripts/notes.txt'
Try 'mv --help' for more information.

(kali@kali)-[~/cybersec]
$ mv scripts/notes.txt scan/

(kali@kali)-[~/cybersec]
$ rm scripts/notes.txt
rm: cannot remove 'scripts/notes.txt': No such file or directory

(kali@kali)-[~/cybersec]
$ ls scripts

(kali@kali)-[~/cybersec]
$
```

- Les sous-dossiers **scan**, **logs** et **scripts** ont été supprimés.

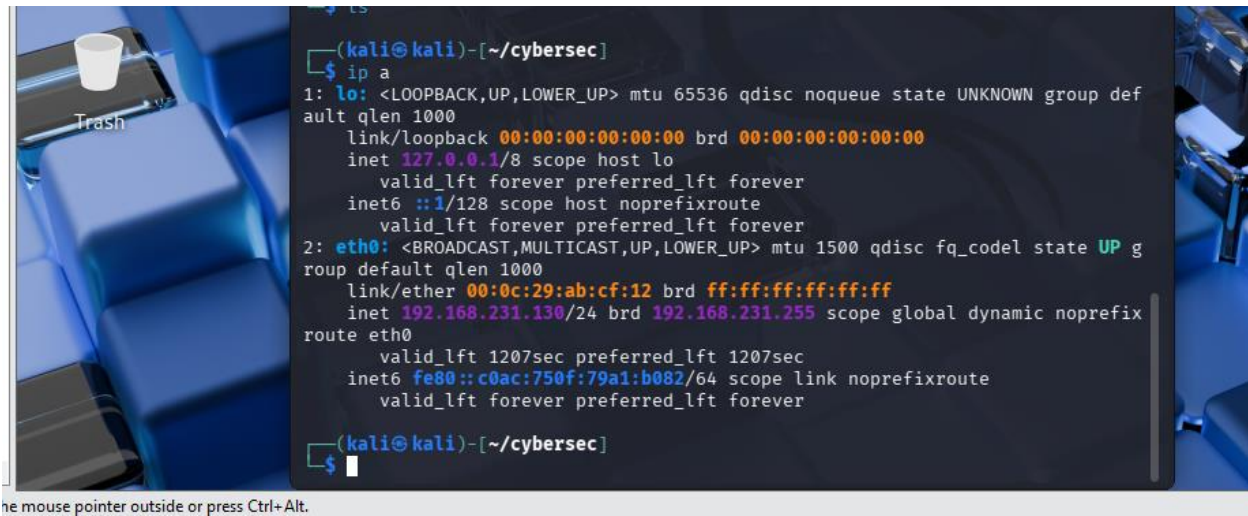
```
(kali@kali)-[~/cybersec]
$ rm -r scan logs scripts

(kali@kali)-[~/cybersec]
$ ls

(kali@kali)-[~/cybersec]
$
```

use pointer outside or press Ctrl+Alt.

- Les informations réseau de la machine ont été affichées avec la commande **ip a**

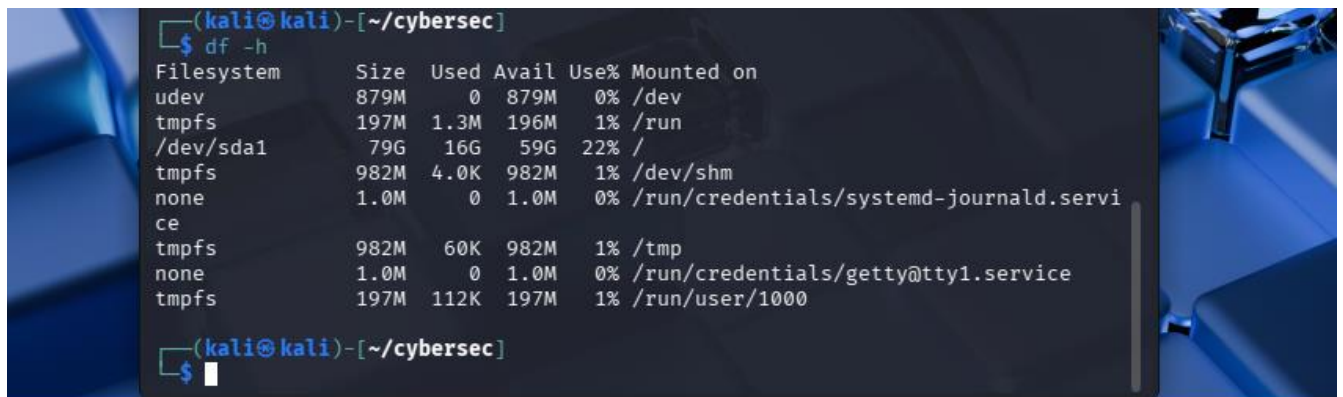


```
(kali@kali)-[~/cybersec]
$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group def
  ault qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP g
  roup default qlen 1000
    link/ether 00:0c:29:ab:cf:12 brd ff:ff:ff:ff:ff:ff
    inet 192.168.231.130/24 brd 192.168.231.255 scope global dynamic noprefix
      route eth0
        valid_lft 1207sec preferred_lft 1207sec
    inet6 fe80::c0ac:750f:79a1:b082/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

(kali@kali)-[~/cybersec]
$
```

he mouse pointer outside or press Ctrl+Alt.

- Plusieurs commandes système ont été exécutées afin d'analyser l'état du système



```
(kali@kali)-[~/cybersec]
$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            879M   0    879M   0% /dev
tmpfs           197M  1.3M  196M   1% /run
/dev/sda1       79G   16G   59G  22% /
tmpfs           982M  4.0K  982M   1% /dev/shm
none            1.0M   0    1.0M   0% /run/credentials/systemd-journald.servi
ce
tmpfs           982M  60K   982M   1% /tmp
none            1.0M   0    1.0M   0% /run/credentials/getty@tty1.service
tmpfs           197M  112K  197M   1% /run/user/1000

(kali@kali)-[~/cybersec]
$
```



```
(kali@kali)-[~/cybersec]
$ du -sh
4.0K .
```

(kali@kali)~[/cybersec]

\$ ps aux

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
root	1	0.2	0.7	24404	15184	?	Ss	16:53	0:05	/sbin/init
root	2	0.0	0.0	0	0	?	S	16:53	0:00	[kthreadd]
root	3	0.0	0.0	0	0	?	S	16:53	0:00	[pool_work
root	4	0.0	0.0	0	0	?	I<	16:53	0:00	[kworker/R
root	5	0.0	0.0	0	0	?	I<	16:53	0:00	[kworker/R
root	6	0.0	0.0	0	0	?	I<	16:53	0:00	[kworker/R
root	7	0.0	0.0	0	0	?	I<	16:53	0:00	[kworker/R
root	8	0.0	0.0	0	0	?	I<	16:53	0:00	[kworker/R
root	12	0.0	0.0	0	0	?	I	16:53	0:00	[kworker/u
root	13	0.0	0.0	0	0	?	I<	16:53	0:00	[kworker/R
root	14	0.0	0.0	0	0	?	S	16:53	0:00	[ksoftirqd
root	15	0.2	0.0	0	0	?	I	16:53	0:05	[rcu_preem
root	16	0.0	0.0	0	0	?	S	16:53	0:00	[rcu_exp_p
root	17	0.0	0.0	0	0	?	S	16:53	0:00	[rcu_exp_g
root	18	0.0	0.0	0	0	?	S	16:53	0:00	[migration
root	19	0.0	0.0	0	0	?	S	16:53	0:00	[idle_inje
root	20	0.0	0.0	0	0	?	S	16:53	0:00	[cpuhp/0]
root	21	0.0	0.0	0	0	?	S	16:53	0:00	[cpuhp/1]
root	22	0.0	0.0	0	0	?	S	16:53	0:00	[idle_inje
root	23	0.0	0.0	0	0	?	S	16:53	0:00	[migration
root	24	0.0	0.0	0	0	?	S	16:53	0:00	[ksoftirqd
root	27	0.0	0.0	0	0	?	S	16:53	0:00	[cpuhp/2]

\$ free -h

	total	used	free	shared	buff/cache	availa
Mem:	1.9Gi	789Mi	212Mi	7.4Mi	1.1Gi	1.
Swap:	953Mi	0B	953Mi			

(kali@kali)~[/cybersec]

```
Session Actions Edit View Help
root 623 0.0 0.4 18428 9352 ? Ss 16:54 0:00 /usr/lib/s
root 858 0.0 0.9 336572 19604 ? Ssl 16:54 0:01 /usr/sbin/
root 883 0.0 0.0 0 0 ? Ic 16:54 0:00 [kworker/u
root 886 0.0 0.6 391064 12792 ? Ssl 16:54 0:00 /usr/sbin/
root 977 0.0 0.3 381052 7696 ? Ssl 16:54 0:00 /usr/sbin/
root 995 0.0 0.1 8124 2784 tty1 Ss+ 16:54 0:00 /usr/sbin/
root 996 3.5 6.6 941704 132744 tty7 Ssl+ 16:54 1:22 /usr/lib/x
root 1033 0.0 0.0 0 0 ? S 16:54 0:00 [psimon]
rtkit 1062 0.0 0.1 21492 3220 ? Ssl 16:54 0:00 /usr/libex
root 1135 0.0 0.0 0 0 ? I 16:54 0:02 [kworker/3
root 1140 0.0 0.5 172768 10288 ? Sl 16:55 0:00 lightdm --
kali 1168 0.0 0.6 23060 13440 ? Ss 16:55 0:00 /usr/lib/s
kali 1170 0.0 0.2 24360 4104 ? S 16:55 0:00 (sd-pam)
kali 1190 0.0 0.2 8912 5948 ? Ss 16:55 0:00 /usr/bin/d
kali 1191 0.0 0.6 102036 12464 ? Sssl 16:55 0:00 /usr/bin/p
kali 1193 0.0 0.5 183184 10396 ? Ssl 16:55 0:00 /usr/bin/g
kali 1194 0.0 0.1 7212 3740 ? Ss 16:55 0:00 /usr/bin/m
kali 1195 0.0 0.9 480568 19116 ? Sssl 16:55 0:00 /usr/bin/w
kali 1196 0.0 0.2 84704 5476 ? Ssl 16:55 0:00 /usr/bin/p
kali 1197 0.0 0.4 99364 9144 ? Sssl 16:55 0:00 /usr/bin/p
kali 1220 0.0 1.8 422292 37208 ? Ssl 16:55 0:01 xfce4-sess
kali 1287 0.0 0.3 381168 7756 ? Ssl 16:55 0:00 /usr/libex
kali 1294 0.0 0.2 8484 4972 ? S 16:55 0:00 /usr/bin/d
kali 1305 0.0 0.3 168784 7668 ? Sl 16:55 0:00 /usr/libex
kali 1312 0.0 0.0 10688 1860 ? Ss 16:55 0:00 /usr/bin/s
kali 1321 0.0 0.1 155488 3972 ? Sssl 16:55 0:00 /usr/bin/g
kali 1324 1.5 6.7 1183764 136292 ? Sl 16:55 0:35 xfwm4
kali 1329 0.0 0.4 312816 8540 ? Ssl 16:55 0:00 /usr/libex
kali 1335 0.0 0.3 472140 7648 ? Sl 16:55 0:00 /usr/libex
kali 1354 0.0 1.7 355836 35396 ? Sl 16:55 0:01 xfsettings
kali 1360 0.0 0.3 165276 6152 ? Ssl 16:55 0:00 /usr/libex
kali 1361 0.2 2.3 508028 47080 ? Sl 16:55 0:06 xfce4-pane

File Edit View VM Tabs Help
Library
Type here to search
My Computer
kali-linux-2025.4-vmwa...
kali@kali: ~/cybersec
Session Actions Edit View Help
kali@kali:~/cybersec$ lspci
00:00.0 Host bridge: Intel Corporation 440BX/ZX/DX - 82443BX/ZX/DX Host bridge (rev 01)
00:01.0 PCI bridge: Intel Corporation 440BX/ZX/DX - 82443BX/ZX/DX AGP bridge (rev 01)
00:07.0 ISA bridge: Intel Corporation 82371AB/EB/MB PIIX4 ISA (rev 08)
00:07.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
00:07.3 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 08)
00:07.7 System peripheral: VMware Virtual Machine Communication Interface (rev 10)
00:0f.0 VGA compatible controller: VMware SVGA II Adapter
00:10.0 SCSI storage controller: Broadcom / LSI 53c1030 PCI-X Fusion-MPT Dual Ultra320 SCSI (rev 01)
00:11.0 PCI bridge: VMware PCI bridge (rev 02)
00:15.0 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.1 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.2 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.3 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.4 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.5 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.6 PCI bridge: VMware PCI Express Root Port (rev 01)
00:15.7 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.0 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.1 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.2 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.3 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.4 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.5 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.6 PCI bridge: VMware PCI Express Root Port (rev 01)
00:16.7 PCI bridge: VMware PCI Express Root Port (rev 01)
00:17.0 PCI bridge: VMware PCI Express Root Port (rev 01)
```

## ➤ Installation et utilisation de traceroute



```
(kali@kali)-[~/cybersec]
$ sudo apt install traceroute -y
[sudo] password for kali:
traceroute is already the newest version (1:2.1.6-1).
The following packages were automatically installed and are no longer required:
  curlftpfs  libfuse2t64
Use 'sudo apt autoremove' to remove them.

Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0

(kali@kali)-[~/cybersec]
$ traceroute google.com
traceroute to google.com (142.250.217.174), 30 hops max, 60 byte packets
 1  192.168.231.2 (192.168.231.2)  2.346 ms  5.077 ms  4.391 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
```

## ➤ Commandes réseau et journaux système

```
(kali@kali)-[~/cybersec]
$ journalctl
Dec 17 17:08:36 kali kernel: Linux version 6.16.8+kali-amd64 (devel@kali.org) (x86_64-linux-gnu-gcc-14 (Debian 14.3.0-8) 14.3.0, GNU ld (GNU >
Dec 17 17:08:36 kali kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-6.16.8+kali-amd64 root=UUID=24746b7e-1f26-43a7-8603-f350675beb65 ro quiet>
Dec 17 17:08:36 kali kernel: Disabled fast string operations
Dec 17 17:08:36 kali kernel: BIOS-provided physical RAM map:
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x0000000000000000-0x00000000000009f3ff] usable
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x00000000000009f400-0x00000000000009ffff] reserved
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x0000000000000dc000-0x0000000000000fffff] reserved
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x00000000000100000-0x0000000000007fedffff] usable
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x000000000007fee0000-0x0000000000007fefffff] ACPI data
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x000000000007feff000-0x0000000000007fefffff] ACPI NVS
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x000000000007fff0000-0x0000000000007fffffff] usable
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x00000000000f0000000-0x000000000000f7fffff] reserved
Dec 17 17:08:36 kali kernel: BIOS-e820: [mem 0x00000000000fec00000-0x000000000000fec0ffff] reserved

$ ss -tuln
Netid      State      Recv-Q     Send-Q     Local Address:Port      Peer Address:Port

(kali@kali)-[~/cybersec]
$ netstat -tuln ss -tuln
```

```

(kali@kali)-[~/cybersec]
$ journalctl -n 10
Dec 22 17:51:19 kali systemd[1]: apt-daily.service: Deactivated successfully.
Dec 22 17:51:19 kali systemd[1]: Finished apt-daily.service - Daily apt download activities.
Dec 22 17:51:19 kali systemd[1]: apt-daily.service: Consumed 1.010s CPU time over 1.075s wall clock time, 13.4M memory peak.
Dec 22 17:52:52 kali dbus-daemon[1190]: [session uid=1000 pid=1190 pidfd=5] Activating via systemd: service name='org.xfce.Xfconf' unit='xfco>
Dec 22 17:52:52 kali systemd[1168]: Starting xfconfd.service - Xfce configuration service...
Dec 22 17:52:52 kali dbus-daemon[1190]: [session uid=1000 pid=1190 pidfd=5] Successfully activated service 'org.xfce.Xfconf'
Dec 22 17:52:52 kali systemd[1168]: Started xfconfd.service - Xfce configuration service.
Dec 22 17:55:03 kali CRON[31316]: pam_unix(cron:session): session opened for user root(uid=0) by root(uid=0)
Dec 22 17:55:03 kali CRON[31318]: (root) CMD (command -v debian-sa1 > /dev/null && debian-sa1 1 1)
Dec 22 17:55:03 kali CRON[31316]: pam_unix(cron:session): session closed for user root

(kali@kali)-[~/cybersec]
$

```

## ➤ Information systèmes avancées

```

(kali@kali)-[~/cybersec]
$ date
Mon Dec 22 06:02:45 PM EST 2025

```

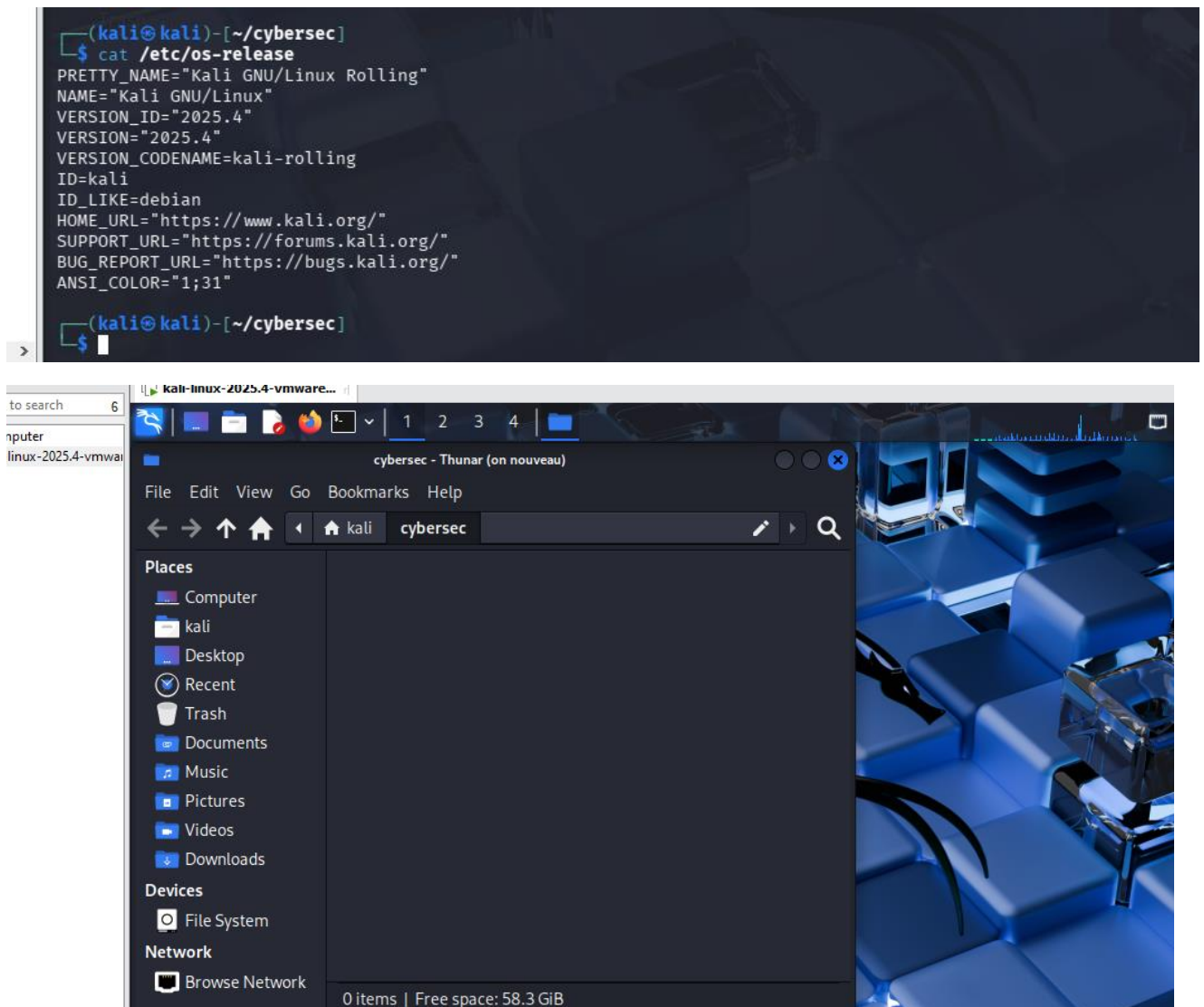
```

(kali@kali)-[~/cybersec]
$ timedatectl
      Local time: Mon 2025-12-22 18:02:57 EST
      Universal time: Mon 2025-12-22 23:02:57 UTC
          RTC time: Mon 2025-12-22 23:02:57
          Time zone: America/New_York (EST, -0500)
System clock synchronized: yes
      NTP service: active
          RTC in local TZ: no

(kali@kali)-[~/cybersec]
$ hostnamectl
      Static hostname: kali
          Icon name: computer-vm
          Chassis: vm
Chassis Asset Tag: No Asset Tag
      Machine ID: b69758c0cad3481e967dcad827001d56
      Boot ID: 9a47dffe1b15421d90affcfb9311c4cb
      AF_VSOCK CID: 4088123154
  Virtualization: vmware
Operating System: Kali GNU/Linux Rolling
      Kernel: Linux 6.17.10+kali-amd64
  Architecture: x86_64
  Hardware Vendor: VMware, Inc.
  Hardware Model: VMware Virtual Platform
  Hardware Version: None
  Firmware Version: 6.00
      Firmware Date: Thu 2020-11-12
      Firmware Age: 5y 1month 1w 3d

(kali@kali)-[~/cybersec]
$

```



## Conclusion

Ce travail dirigé m'a permis de familiariser avec **Kali Linux**, son installation dans une machine virtuelle et l'utilisation des **commandes essentielles de Linux**.

J'apprends à gérer les fichiers, analyser les ressources du système, consulter les journaux et effectuer des tests réseau, ce qui constitue une base importante pour les études en informatique et **cybersécurité**.