Task 3 Part 1

1. How many states could has a process in Linux?

Created, Ready, Waiting, Running, Terminated

2. Examine the pstree command. Make output (highlight) the chain (ancestors) of the current process.

```
root@master:/home/master# pstree
systemd─┬─ModemManager───2*[{ModemManager}]
        ├─2*[agetty]
        ├─cron
        ├─dbus-daemon
        ├─login───bash
        ├─login───bash───sudo───sudo───su───bash
        ├─multipathd───6*[{multipathd}]
        ├─networkd-dispat
        ├─packagekitd───2*[{packagekitd}]
        ├─polkitd───2*[{polkitd}]
        ├─rsyslogd───3*[{rsyslogd}]
        ├─snapd───8*[{snapd}]
        ├─sshd─┬─sshd───sshd─┬─bash───sudo───sudo───su───bash───pstree
        │      │             └─bash───sleep
        │      └─sshd───sshd───sftp-server
        ├─sudo───sudo───su───bash───more
        ├─systemd───(sd-pam)
        ├─systemd-journal
        ├─systemd-logind
        ├─systemd-network
        ├─systemd-resolve
        ├─systemd-timesyn───{systemd-timesyn}
        ├─systemd-udevd
        ├─udisksd───4*[{udisksd}]
        └─unattended-upgr───{unattended-upgr}
root@master:/home/master#
```

3. What is a proc file system?

/proc filesystem include:
Virtual Files: The files and directories under /proc are not actual files on disk but are rather virtual files that expose information from the kernel.

Process Information: /proc provides information about running processes. Each process has a corresponding directory with its PID (Process ID) as the directory name.

Kernel Information: /proc also exposes various information about the kernel itself. This includes information about system configuration, hardware details, and runtime parameters.

Dynamic Updates: The information exposed by /proc is dynamic and can change as the system and processes run. Reading from /proc files provides a real-time snapshot of the system's state.

4. Print information about the processor (its type, supported technologies, etc.).

```
root@master:/home/master# cat /proc/cpuinfo
processor       : 0
vendor_id       : GenuineIntel
cpu family      : 6
model           : 142
model name      : Intel(R) Core(TM) i7-8650U CPU @ 1.90GHz
stepping        : 10
cpu MHz         : 2112.002
cache size      : 8192 KB
physical id     : 0
siblings        : 1
core id         : 0
cpu cores       : 1
apicid          : 0
initial apicid  : 0
fpu             : yes
fpu_exception   : yes
cpuid level     : 22
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge
rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pni pclmulqdq
ervisor lahf_lm abm 3dnowprefetch invpcid_single pti fsgsbase bmi1 avx
bugs            : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass
bogomips        : 4224.00
clflush size    : 64
cache_alignment : 64
address sizes   : 39 bits physical, 48 bits virtual
power management:

root@master:/home/master#
```

5. Use the ps command to get information about the process. The information should be as follows: the owner of the process, the arguments with which the process was launched for execution, the group owner of this process, etc.

```
root@master:/home/master# ps -axu | grep 237251
root       237251  0.0  0.1   8836  5728 pts/3    S    07:13   0:00 bash
root       308351  0.0  0.0   6476  2440 pts/3    S+   10:43   0:00 grep --color=auto 237251
```

6. How to define kernel processes and user processes?

Kernel processes:

```
root@master:/home/master# ps aux | grep '\['
root           2  0.0  0.0      0     0 ?        S    Aug16   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I<   Aug16   0:00 [rcu_gp]
root           4  0.0  0.0      0     0 ?        I<   Aug16   0:00 [rcu_par_gp]
root           5  0.0  0.0      0     0 ?        I<   Aug16   0:00 [slub_flushwq]
root           6  0.0  0.0      0     0 ?        I<   Aug16   0:00 [netns]
root           8  0.0  0.0      0     0 ?        I<   Aug16   0:00 [kworker/0:0H-events_highpri]
root          10  0.0  0.0      0     0 ?        I<   Aug16   0:00 [mm_percpu_wq]
root          11  0.0  0.0      0     0 ?        S    Aug16   0:00 [rcu_tasks_rude_]
root          12  0.0  0.0      0     0 ?        S    Aug16   0:00 [rcu_tasks_trace]
root          13  0.0  0.0      0     0 ?        S    Aug16   0:09 [ksoftirqd/0]
root          14  0.0  0.0      0     0 ?        I    Aug16   0:19 [rcu_sched]
root          15  0.0  0.0      0     0 ?        S    Aug16   0:00 [migration/0]
root          16  0.0  0.0      0     0 ?        S    Aug16   0:00 [idle_inject/0]
root          18  0.0  0.0      0     0 ?        S    Aug16   0:00 [cpuhp/0]
```

User processes:

```
root@master:/home/master# ps -u
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         879  0.0  0.1   7836  4720 tty1     Ss   Aug16   0:00 /bin/login -p --
root      199739  0.0  0.1   7836  4824 tty6     Ss   02:56   0:00 /bin/login -p --
root      199955  0.0  0.0   6172  1092 tty5     Ss+  02:56   0:00 /sbin/agetty -o -p -- \u --noclear tty5 linux
root      200597  0.0  0.1  11668  5468 tty6     S+   02:58   0:00 sudo su
root      200616  0.0  0.0  11668   948 pts/4    Ss   02:58   0:00 sudo su
root      200617  0.0  0.1  10192  4424 pts/4    S    02:58   0:00 su
root      200618  0.0  0.1   7632  4276 pts/4    S+   02:58   0:00 bash
root      200674  0.0  0.0   6172  1124 tty4     Ss+  02:58   0:00 /sbin/agetty -o -p -- \u --noclear tty4 linux
root      237233  0.0  0.1  11664  5776 pts/2    S+   07:13   0:00 sudo su
root      237249  0.0  0.0  11664  2484 pts/3    Ss   07:13   0:00 sudo su
root      237250  0.0  0.1  10192  4232 pts/3    S    07:13   0:00 su
root      237251  0.0  0.1   8836  5728 pts/3    S    07:13   0:00 bash
root      314455  0.0  0.0  10068  1560 pts/3    R+   11:01   0:00 ps -u
root@master:/home/master#
```

7. Print the list of processes to the terminal. Briefly describe the statuses of the processes. What condition are they in, or can they be arriving in?

```
ick connect...        2. 192.168.1.11 (master)
root@master:/home/master# ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.3 102012 13168 ?        Ss   Aug16   0:04 /sbin/init
root           2  0.0  0.0      0     0 ?        S    Aug16   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I<   Aug16   0:00 [rcu_gp]
root           4  0.0  0.0      0     0 ?        I<   Aug16   0:00 [rcu_par_gp]
root           5  0.0  0.0      0     0 ?        I<   Aug16   0:00 [slub_flushwq]
root           6  0.0  0.0      0     0 ?        I<   Aug16   0:00 [netns]
root           8  0.0  0.0      0     0 ?        I<   Aug16   0:00 [kworker/0:0H-eve
root          10  0.0  0.0      0     0 ?        I<   Aug16   0:00 [mm_percpu_wq]
root          11  0.0  0.0      0     0 ?        S    Aug16   0:00 [rcu_tasks_rude_]
root          12  0.0  0.0      0     0 ?        S    Aug16   0:00 [rcu_tasks_trace]
root          13  0.0  0.0      0     0 ?        S    Aug16   0:09 [ksoftirqd/0]
```

R(Running), S(Slipping), Z(Zombie), T(Stopped), W(Waiting), X(Dead)

8. Display only the processes of a specific user.

```
root@master:/home/master# ps -u root
    PID TTY          TIME CMD
      1 ?        00:00:04 systemd
      2 ?        00:00:00 kthreadd
      3 ?        00:00:00 rcu_gp
      4 ?        00:00:00 rcu_par_gp
      5 ?        00:00:00 slub_flushwq
      6 ?        00:00:00 netns
      8 ?        00:00:00 kworker/0:0H-events_highpri
     10 ?        00:00:00 mm_percpu_wq
     11 ?        00:00:00 rcu_tasks_rude_
     12 ?        00:00:00 rcu_tasks_trace
```

9. What utilities can be used to analyze existing running tasks (by analyzing the help for the ps command)?

```
SEE ALSO
       pgrep(1), pstree(1), top(1), proc(5).
```

10. What information does top command display?

```
top - 11:48:47 up 18:50,  6 users,  load average: 1.00, 1.04, 1.00
Tasks: 123 total,   3 running, 120 sleeping,   0 stopped,   0 zombie
%Cpu(s): 47.1 us, 52.9 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3912.3 total,   2700.2 free,    242.5 used,    969.7 buff/cache
MiB Swap:   3925.0 total,   3925.0 free,      0.0 used.   3413.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
 117730 root      20   0    6008   1320   1208 R  99.3   0.0 716:24.16 more
 237157 master    20   0   17460   8576   5928 S   0.3   0.2   0:14.65 sshd
 237225 master    20   0    7368   3580   3320 S   0.3   0.1   0:22.85 bash
      1 root      20   0  102012  13168   8436 S   0.0   0.3   0:04.08 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
```

System info: Load average, CPU usage, Memory usage, SWAP usage
Process list: Process ID ,User who owns the process, Command and arguments used to launch the process, Indicates the process status, Priority, Nice value, Threads

Interactive Features: Real-time updates, Interactive commands, Sorting, Total processes, Running processes, Sleeping processes, CPU usage summary

Global Statistics: Total processes, Running processes, Sleeping processes, CPU usage summary

12. Display the processes of the specific user using the top command.

```
top - 11:58:08 up 19:00,  6 users,  load average: 1.01, 1.03, 1.00
Tasks: 123 total,   2 running, 121 sleeping,   0 stopped,   0 zombie
%Cpu(s): 52.7 us, 47.3 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3912.3 total,   2700.2 free,    242.5 used,    969.7 buff/cache
MiB Swap:   3925.0 total,   3925.0 free,      0.0 used.   3413.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1534 master    20   0   17032   9728   8072 S   0.0   0.2   0:00.13 systemd
   1535 master    20   0  104796   4864      4 S   0.0   0.1   0:00.00 (sd-pam)
   1542 master    20   0    8744   5428   3672 S   0.0   0.1   0:00.04 bash
 199843 master    20   0    8740   5476   3692 S   0.0   0.1   0:00.02 bash
 237157 master    20   0   17460   8576   5928 S   0.0   0.2   0:15.64 sshd
 237194 master    20   0   17308   8020   5616 S   0.0   0.2   0:00.00 sshd
 237195 master    20   0    7764   5392   4312 S   0.0   0.1   0:00.00 sftp-server
 237214 master    20   0    8732   5420   3672 S   0.0   0.1   0:00.07 bash
 237225 master    20   0    7368   3580   3320 S   0.0   0.1   0:23.53 bash
 333226 master    20   0    5768   1008    920 S   0.0   0.0   0:00.00 sleep
```

12. What interactive commands can be used to control the top command? Give a couple of examples.

Sorting:
Press M to sort the process list by memory usage.
Press P to sort the process list by CPU usage.

Navigating Process List:
Use the arrow keys (up and down) to navigate through the process list.
Press Home to jump to the top of the process list.
Press End to jump to the bottom of the process list.

Exiting:
Press q to exit the top command.

13. Sort the contents of the processes window using various parameters (for example, the amount of processor time taken up, etc.)

I use P for sort by cpu utilization.

```
ck connect...        2. 192.168.1.11 (master)
top - 12:04:26 up 19:06,  6 users,  load average: 1.10, 1.08, 1.02
Tasks: 123 total,   2 running, 121 sleeping,   0 stopped,   0 zombie
%Cpu(s): 52.0 us, 48.0 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3912.3 total,   2700.2 free,    242.5 used,    969.7 buff/cache
MiB Swap:   3925.0 total,   3925.0 free,      0.0 used.   3413.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
 117730 root      20   0    6008   1320   1208 R  99.0   0.0 731:52.75 more
 237157 master    20   0   17460   8576   5928 S   0.3   0.2   0:16.07 sshd
      1 root      20   0  102012  13168   8436 S   0.0   0.3   0:04.10 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
```

14. Concept of priority, what commands are used to set priority?

Priority levels are usually represented by numeric values, where lower values indicate higher priority.
You can use nice command:
nice -n -5 my_command or renice -n priority -p process_id

15. Can I change the priority of a process using the top command? If so, how?

```
top - 12:09:39 up 19:11,  6 users,  load average: 1.03, 1.05, 1.00
Tasks: 123 total,   2 running, 121 sleeping,   0 stopped,   0 zombie
%Cpu(s): 54.8 us, 45.2 sy,  0.0 ni,  0.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3912.3 total,   2700.2 free,    242.5 used,    969.7 buff/cache
MiB Swap:   3925.0 total,   3925.0 free,      0.0 used.   3413.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
 117730 root      20   0    6008   1320   1208 R  98.7   0.0 737:02.48 more
 237233 root      20   0   11664   5776   4920 S   0.3   0.1   0:00.96 sudo
 335261 root      20   0   10488   3968   3392 R   0.3   0.1   0:00.38 top
      1 root      20   0  102012  13168   8436 S   0.0   0.3   0:04.10 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-
     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
```

I use mobaXterm for this lab.

Run the top command in your terminal:
In the top interface, find the process for which you want to change the priority.
Select the process by moving the cursor to it using the arrow keys.
Once the process is selected, press the r key. This will prompt you to enter the new "renice" value (priority) for the process.
Enter the new priority value. Remember that lower values indicate higher priority.
Press Enter to confirm.

16. Examine the kill command. How to send with the kill command process control signal? Give an example of commonly used signals.

```
ick connect...    2. 192.168.1.11 (master)
root@master:/home/master# vimtutor

[1]+  Stopped                 vimtutor
root@master:/home/master# ps -axu | grep vimtutor
root       338574  0.0  0.0   2888   944 pts/3    T    12:14   0:00 /bin/sh /usr/bin/vimtutor
root       338663  0.0  0.0   6608  2232 pts/3    S+   12:14   0:00 grep --color=auto vimtutor
root@master:/home/master# kill -SIGKILL 338574
Vim: Caught deadly signal HUP
Vim: Finished.
```

17. Commands jobs, fg, bg, nohup. What are they for? Use the sleep, yes command to
demonstrate the process control mechanism with fg, bg.

jobs - This command lists the currently running and suspended background jobs associated with the current shell session.

fg - The fg command brings a background job to the foreground, allowing you to interact with it in the terminal.

bg - The bg command resumes a suspended background job, allowing it to continue running in the background.

nohup - The nohup command is used to run a command immune to hangups, meaning the process will continue to run even if the terminal is closed.

```
root@master:/home/master# yes > /dev/null &
[1] 341587
root@master:/home/master# ps -axu | grep 341587
root       341587 50.5  0.0   5764  1052 pts/3    R    12:22   0:06 yes
root       341655  0.0  0.0   6476  2208 pts/3    S+   12:23   0:00 grep --color=auto 341587
root@master:/home/master#
```

```
root@master:/home/master# jobs
[1]+  Running                 yes > /dev/null &
root@master:/home/master#
```

```
root@master:/home/master# fg %1
yes > /dev/null
```

```
root@master:/home/master# nohup sleep 300 &
[1] 342963
root@master:/home/master# nohup: ignoring input and appending output to 'nohup.out'

root@master:/home/master# ps -axu | grep 342963
root       342963  0.0  0.0   5768  1044 pts/3    S    12:27   0:00 sleep 300
root       343133  0.0  0.0   6476  2292 pts/3    S+   12:27   0:00 grep --color=auto 342963
root@master:/home/master#
```

Task 3 part 2

2. Implement basic SSH settings to increase the security of the client-server connection (at least

```
# default value.

Include /etc/ssh/sshd_config.d/*.conf

Port 5678
PermitRootLogin no
PasswordAuthentication no
```

SoftServeInternUbuntu [Запущено] - Oracle VM VirtualBox

Файл Машина Перегляд Введення Пристрої Довідка

```
root@master:/home/master# netstat -antpu | grep ssh
tcp        0      0 0.0.0.0:5678            0.0.0.0:*               LISTEN      377950/sshd:
```

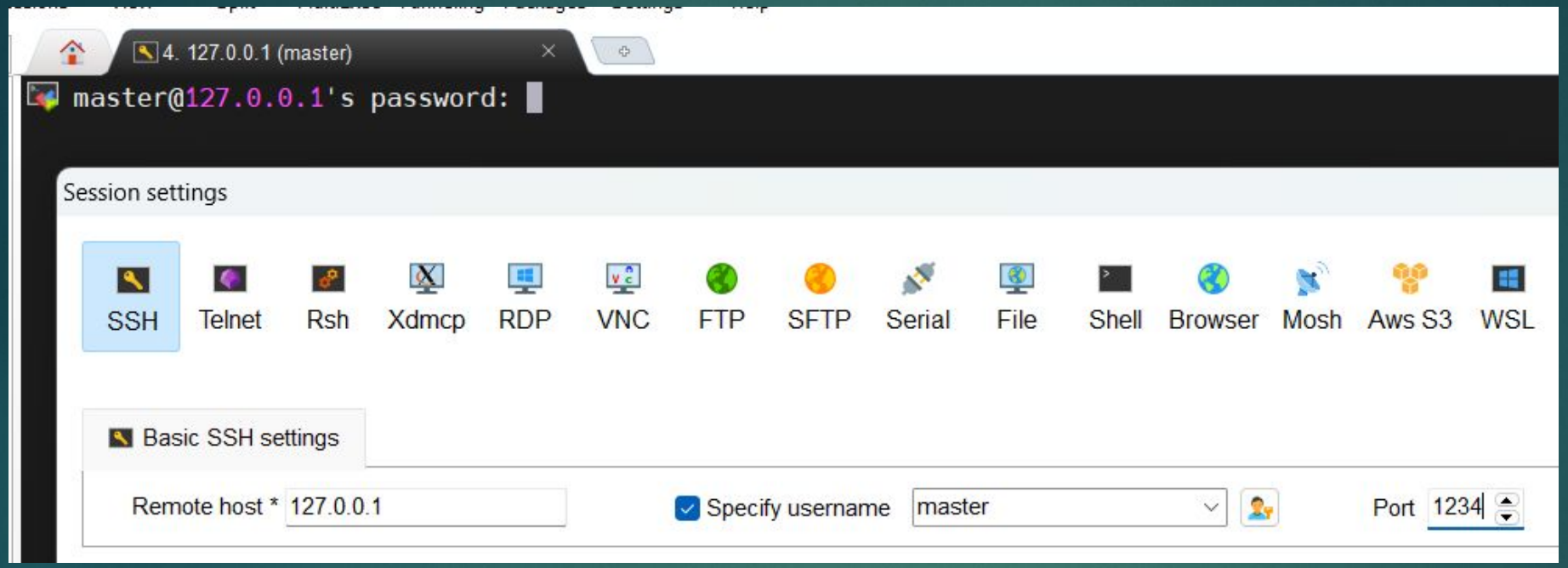
3. List the options for choosing keys for encryption in SSH. Implement 3 of them.

If i understand right, you mean this.

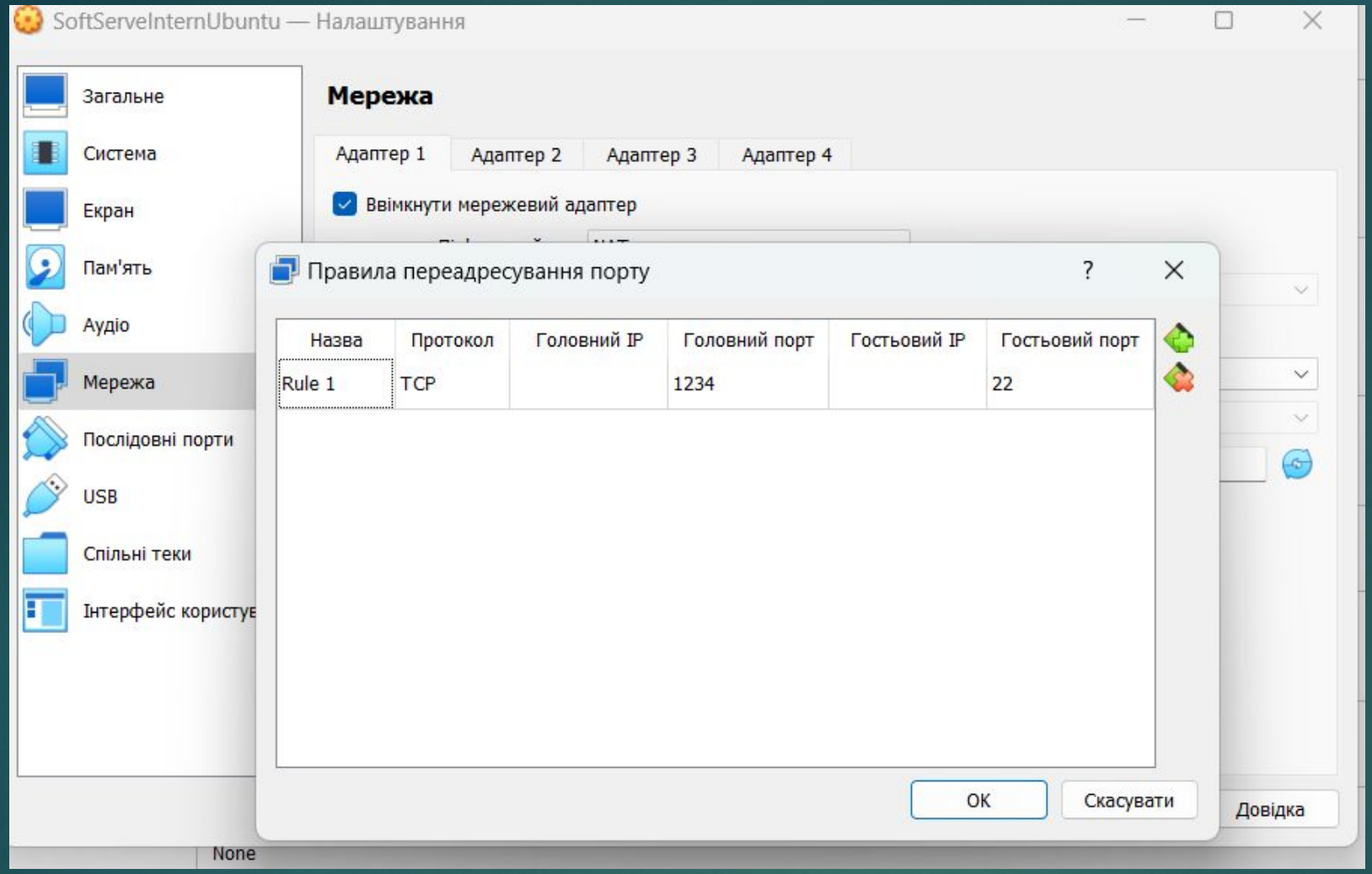
/etc/ssh/sshd_config

```
#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key
```

4. Implement port forwarding for the SSH client from the host machine to the guest Linux virtual machine behind NAT.




```
master@master:~$ sudo netstat -antpu | grep ssh
[sudo] password for master:
tcp        0      0 127.0.0.1:6010          0.0.0.0:*               LISTEN      990/sshd: master@pt
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      658/sshd: /usr/sbin
tcp        0      0 10.0.2.15:22            10.0.2.2:20346          ESTABLISHED 915/sshd: master [p
tcp        0      0 10.0.2.15:22            10.0.2.2:20343          ESTABLISHED 907/sshd: master [p
tcp6       0      0 ::1:6010                :::*                    LISTEN      990/sshd: master@pt
tcp6       0      0 :::22                   :::*                    LISTEN      658/sshd: /usr/sbin
master@master:~$
```


SoftServeInternUbuntu — Налаштування
Загальне
Система
Екран
Пам'ять
Аудіо
Мережа
Послідовні порти
USB
Спільні теки
Інтерфейс користуве
Мережа
Адаптер 1
Адаптер 2
Адаптер 3
Адаптер 4
Ввімкнути мережевий адаптер
Правила переадресування порту
Назва
Протокол
Головний IP
Головний порт
Гостьовий IP
Гостьовий порт
Rule 1
TCP
1234
22
OK
Скасувати
Довідка
None

5*. Intercept (capture) traffic (tcpdump, wireshark) while authorizing the remote client on the server using ssh, telnet, rlogin. Analyze the result.

tcp.port == 23

No.	Time	Source	Destination	Protocol	Length	Info
32693	393.286945	10.7.150.43	10.7.201.111	TCP	66	20794 → 23 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
32694	393.287495	10.7.201.111	10.7.150.43	TCP	66	23 → 20794 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 MSS=1460 SACK_PERM=1 WS=128
32695	393.287548	10.7.150.43	10.7.201.111	TCP	54	20794 → 23 [ACK] Seq=1 Ack=1 Win=262656 Len=0
32696	393.295385	10.7.201.111	10.7.150.43	TELNET	66	Telnet Data ...
32697	393.305149	10.7.150.43	10.7.201.111	TELNET	75	Telnet Data ...
32698	393.305198	10.7.150.43	10.7.201.111	TELNET	57	Telnet Data
32699	393.305593	10.7.201.111	10.7.150.43	TCP		
32700	393.305593	10.7.201.111	10.7.150.43	TCP		
32701	393.305810	10.7.201.111	10.7.150.43	TELNET		
32702	393.306028	10.7.150.43	10.7.201.111	TELNET		
32703	393.306052	10.7.150.43	10.7.201.111	TELNET		
32704	393.306089	10.7.150.43	10.7.201.111	TELNET		
32705	393.306115	10.7.150.43	10.7.201.111	TELNET		
32706	393.306518	10.7.201.111	10.7.150.43	TCP		
32707	393.306518	10.7.201.111	10.7.150.43	TCP		
32708	393.306518	10.7.201.111	10.7.150.43	TCP		
32709	393.306518	10.7.201.111	10.7.150.43	TCP		
32710	393.307008	10.7.201.111	10.7.150.43	TELNET		
32711	393.307251	10.7.150.43	10.7.201.111	TELNET		
32712	393.307292	10.7.150.43	10.7.201.111	TELNET		

```
> Frame 32693: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) c
> Ethernet II, Src: HewlettP_45:03:c8 (84:a9:3e:45:03:c8), Dst: 36:5b:80:e
> Internet Protocol Version 4, Src: 10.7.150.43, Dst: 10.7.201.111
> Transmission Control Protocol, Src Port: 20794, Dst Port: 23, Seq: 0, Le
```

10.7.201.111 (master)

Terminal Sessions View X server Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect... 2. 10.7.201.111 (master) 3. 10.7.201.111 (master)

```
• MobaXterm Personal Edition v22.1 •
(SSH client, X server and network tools)

▸ Telnet session to master@10.7.201.111
▸ Your DISPLAY is set to 10.7.150.43:0.0
▸ For more info, ctrl+click on help or visit our website.

Password:
```

3481	84.917893	10.7.150.43	10.7.201.111	TELNET
3482	84.918408	10.7.201.111	10.7.150.43	TCP
3484	85.028881	10.7.150.43	10.7.201.111	TELNET
3485	85.029367	10.7.201.111	10.7.150.43	TCP
3493	85.476999	10.7.150.43	10.7.201.111	TELNET
3494	85.477531	10.7.201.111	10.7.150.43	TCP
3495	85.478327	10.7.201.111	10.7.150.43	TELNET
3496	85.518729	10.7.150.43	10.7.201.111	TCP
3517	86.222711	10.7.201.111	10.7.150.43	TELNET
3518	86.263003	10.7.150.43	10.7.201.111	TCP
3519	86.263528	10.7.201.111	10.7.150.43	TELNET
3520	86.304236	10.7.150.43	10.7.201.111	TCP
3592	89.011059	10.7.201.111	10.7.150.43	TELNET
3594	89.052579	10.7.150.43	10.7.201.111	TCP

```
Frame 2569: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on
Ethernet II, Src: HewlettP_45:03:c8 (84:a9:3e:45:03:c8), Dst: 36:5b:80:e
Internet Protocol Version 4, Src: 10.7.150.43, Dst: 10.7.201.111
Transmission Control Protocol, Src Port: 20805, Dst Port: 23, Seq: 0, Le

000  36 5b 80 ed 1e 8d 84 a9  3e 45 03 c8 08 00 45 00   6[------ >E----E-
```

10.7.201.111 (master)

Terminal Sessions View X server Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect... | 2. 10.7.201.111 (master) | 5. 10.7.201.111 (master)

```
Login incorrect
master login: master
Password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.4.0-156-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Fri 18 Aug 2023 08:24:08 AM UTC

  System load:  0.15               Processes:               175
  Usage of /:   43.6% of 31.32GB   Users logged in:         1
  Memory usage: 36%                IPv4 address for docker0: 172.17.0.1
  Swap usage:   0%                 IPv4 address for ens18:   10.7.201.111

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge
```

tcp.port == 23

No.	Time	Source	Destination	Protocol	Length	Info
3426	83.098188	10.7.150.43	10.7.201.111	TELNET	55	Telnet Data ...
3427	83.098652	10.7.201.111	10.7.150.43	TCP	60	23 → 20805 [ACK] Seq=115 Ack=242 Win=64256 Len=0
3431	83.349505	10.				
3432	83.350529	10.				
3447	83.570187	10.				
3448	83.570758	10.				
3481	84.917893	10.				
3482	84.918408	10.				
3484	85.028881	10.				
3485	85.029367	10.				
3493	85.476999	10.				
3494	85.477531	10.				
3495	85.478327	10.				
3496	85.518729	10.				
3517	86.222711	10.				
3518	86.263003	10.				
3519	86.263528	10.				
3520	86.304236	10.				
3592	89.011059	10.				
3594	89.052579	10.				

Frame 3517: 1419 bytes
Ethernet II, Src: 36:5b
Internet Protocol Versi
Transmission Control Pr
Telnet
Data: Welcome to Ubu

Wireshark · Packet 3517 · Ethernet

```
> Frame 3517: 1419 bytes on wire (11352 bits), 1419 bytes captured (11352 bits) on interface \Device\NPF_{872FBD84-FA3E-4717-9EB2-AD6F9A8D4D44}, id
> Ethernet II, Src: 36:5b:80:ed:1e:8d (36:5b:80:ed:1e:8d), Dst: HewlettP_45:03:c8 (84:a9:3e:45:03:c8)
> Internet Protocol Version 4, Src: 10.7.201.111, Dst: 10.7.150.43
> Transmission Control Protocol, Src Port: 23, Dst Port: 20805, Seq: 117, Ack: 248, Len: 1365
v Telnet
    Data: Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.4.0-156-generic x86_64)\r\n
    Data: \r\n
    Data:  * Documentation:  https://help.ubuntu.com\r\n
    Data:  * Management:     https://landscape.canonical.com\r\n
    Data:  * Support:        https://ubuntu.com/advantage\r\n
    Data: \r\n
    Data:   System information as of Fri 18 Aug 2023 08:24:08 AM UTC\r\n
    Data: \r\n
    Data:   System load:  0.15               Processes:               175\r\n
    Data:   Usage of /:   43.6% of 31.32GB   Users logged in:         1\r\n
    Data:   Memory usage: 36%                IPv4 address for docker0: 172.17.0.1\r\n
    Data:   Swap usage:   0%                 IPv4 address for ens18:   10.7.201.111\r\n
    Data: \r\n
    Data:  * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s\r\n
    Data:    just raised the bar for easy, resilient and secure K8s cluster deployment.\r\n
    Data: \r\n
```

```
0000  84 a9 3e 45 03 c8 36 5b  80 ed 1e 8d 08 00 45 10   ··>E··6[ ------E·
0010  05 7d 34 dc 40 00 40 06  8c e6 0a 07 c9 6f 0a 07   ·}4·@·@· ------··
```

My password Qwerty-1:

Wireshark · Packet 3484 · Ethernet

```
> Frame 3484: 55 bytes on wire (440 bits), 55 bytes captured (440 bits) on interface \Device\NPF_{872FBD84-FA3E-4717-9EB2-AD6F9A8D4D44}, id 0
> Ethernet II, Src: HewlettP_45:03:c8 (84:a9:3e:45:03:c8), Dst: 36:5b:80:ed:1e:8d (36:5b:80:ed:1e:8d)
> Internet Protocol Version 4, Src: 10.7.150.43, Dst: 10.7.201.111
> Transmission Control Protocol, Src Port: 20805, Dst Port: 23, Seq: 245, Ack: 115, Len: 1
v Telnet
    Data: 1
```

Telnet protocol sent data by button press.