EXERCISE 1

```
phyhost$ simctl netapps-basic start
```

```
phyhost$ simctl netapps-basic get virt1 0
```

EX 1.1

```
telem@debian:~$ cat /etc/services | grep daytime
daytime         13/tcp
daytime         13/udp
```

EX 1.2

The port for WInfows/IOs should be the same

EX 1.3

root@virt1:~# ifconfig | grep HWaddr

MAC: fe:fd:00:00:01:00

IP: 10.1.1.1/24

root@virt2:~# ifconfig | grep HWaddr

MAC: fe:fd:00:00:02:00

IP: 10.1.1.2/24

EX 1.4

root@virt1:~# ifconfig eth0 192.168.0.1

root@virt2:~# ifconfig eth0 192.168.0.3

EX 1.5

root@virt2$ ping -c 3 192.168.0.1

SImNet0

1	0.000000000	fe:fd:00:00:02:00	Broadcast	ARP	42 Who has 192.168.0.1? Tell 192.168.0.2
2	0.000114593	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42 192.168.0.1 is at fe:fd:00:00:01:00
3	0.000154096	192.168.0.2	192.168.0.1	ICMP	98 Echo (ping) request id=0x0588, seq=1/25
4	0.000194210	192.168.0.1	192.168.0.2	ICMP	98 Echo (ping) reply id=0x0588, seq=1/25
5	1.009968954	192.168.0.2	192.168.0.1	ICMP	98 Echo (ping) request id=0x0588, seq=2/51
6	1.010109887	192.168.0.1	192.168.0.2	ICMP	98 Echo (ping) reply id=0x0588, seq=2/51
7	2.019665463	192.168.0.2	192.168.0.1	ICMP	98 Echo (ping) request id=0x0588, seq=3/76
8	2.019882206	192.168.0.1	192.168.0.2	ICMP	98 Echo (ping) reply id=0x0588, seq=3/76
9	5.015315819	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42 Who has 192.168.0.2? Tell 192.168.0.1
10	5.015510315	fe:fd:00:00:02:00	fe:fd:00:00:01:00	ARP	42 192.168.0.2 is at fe:fd:00:00:02:00

EX 1.6

lo is used for loopback interface. It doesnt have a MAC cause it doesn't need a physical address, the interface belong to the inner machine network configuration, and it is used to access the network services that are running on the host.

EX 1.7

root@virt1:~# ifconfig eth0 10.1.1.1

root@virt2:~# ifconfig eth0 10.1.1.2

EXERCISE 2

EX 2.1

```
root@virt1:~# netstat -tnlp
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program nam
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN      804/portmap
tcp        0      0 0.0.0.0:113             0.0.0.0:*               LISTEN      1383/inetd
tcp        0      0 0.0.0.0:32884           0.0.0.0:*               LISTEN      817/rpc.statd
tcp        0      0 0.0.0.0:21              0.0.0.0:*               LISTEN      1383/inetd
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      1412/sshd
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1341/exim4
tcp6       0      0 :::80                   :::*                    LISTEN      979/apache2
tcp6       0      0 :::22                   :::*                    LISTEN      1412/sshd
tcp6       0      0 ::1:25                  :::*                    LISTEN      1341/exim4
```

```
root@virt1:~# cat /etc/inetd.conf
# /etc/inetd.conf:  see inetd(8) for further informations.
#
# Internet superserver configuration database
#
#
# Lines starting with "#:LABEL:" or "#<off>#" should not
# be changed unless you know what you are doing!
#
# If you want to disable an entry so it isn't touched during
# package updates just comment it out with a single '#' character.
#
# Packages should modify this file by using update-inetd(8)
#
# <service_name> <sock_type> <proto> <flags> <user> <server_path> <args>
#
#:INTERNAL: Internal services
#discard                stream  tcp     nowait  root    internal
#discard                dgram   udp     wait    root    internal
#daytime                stream  tcp     nowait  root    internal
#time           stream  tcp     nowait  root    internal

#:STANDARD: These are standard services.
ftp             stream  tcp     nowait  root    /usr/sbin/tcpd  /usr/sbin/in.ftpd
#telnet         stream  tcp     nowait  root    /usr/sbin/tcpd  /usr/sbin/in.telnetd

#:BSD: Shell, login, exec and talk are BSD protocols.

#:MAIL: Mail, news and uucp services.

#:INFO: Info services
ident           stream  tcp     wait    identd  /usr/sbin/identd        identd

#:BOOT: TFTP service is provided primarily for booting.  Most sites
#       run this only on machines acting as "boot servers."

#:RPC: RPC based services

#:HAM-RADIO: amateur-radio services

#:OTHER: Other services
```

EX 2.2

root@virt1:~# nano /etc/inetd.conf -> Descomment daytime

root@virt1:~# /etc/init.d/openbsd-inetd restart -> Restart super-daemon

The port of daytime (13) now is listening:

```
root@virt1:/# netstat -tnlp | grep 13
tcp        0      0 0.0.0.0:13              0.0.0.0:*               LISTEN      1551/inetd
tcp        0      0 0.0.0.0:113             0.0.0.0:*               LISTEN      1551/inetd
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1341/exim4
tcp6       0      0 ::1:25                  :::*                    LISTEN      1341/exim4
```

root@virt2:~# nc 10.1.1.1 13

```
root@virt2:~# nc 10.1.1.1 13
Tue Mar  9 13:54:30 2021
```

EX 2.3

```
root@virt1:/# netstat -tnlp | grep ssh
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      1412/sshd
tcp6       0      0 :::22                   :::*                    LISTEN      1412/sshd
```

root@virt1:~# service ssh stop

EX 2.4

root@virt1:~# nano /etc/ssh/sshd_config

root@virt1:~# service ssh start

```
root@virt1:/# netstat -tnlp | grep ssh
tcp        0      0 0.0.0.0:2222            0.0.0.0:*               LISTEN      1667/sshd
tcp6       0      0 :::2222                 :::*                    LISTEN      1667/sshd
```

EXERCISE 3

EX 3.1

```
virt1.0$ nc -l -p 12345
```

This command starts netcat in mode server and in port 12345.

```
virt2.0$ nc 10.1.1.1 12345
```

Or else this one starts netcat as client in port 12345.

SImNet0

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	10.1.1.2	10.1.1.1	TCP	74	35024 → 12345 [SYN] Seq=0 Win=14600 Len=
2	0.000065517	10.1.1.1	10.1.1.2	TCP	74	12345 → 35024 [SYN, ACK] Seq=0 Ack=1 Wir
3	0.000104457	10.1.1.2	10.1.1.1	TCP	66	35024 → 12345 [ACK] Seq=1 Ack=1 Win=1460
4	4.944815578	fe:fd:00:00:02:00	fe:fd:00:00:01:00	ARP	42	Who has 10.1.1.1? Tell 10.1.1.2
5	4.944910957	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42	10.1.1.1 is at fe:fd:00:00:01:00
6	9.120048514	10.1.1.2	10.1.1.1	TCP	72	35024 → 12345 [PSH, ACK] Seq=1 Ack=1 Wir
7	9.120094849	10.1.1.1	10.1.1.2	TCP	66	12345 → 35024 [ACK] Seq=1 Ack=7 Win=1448
8	13.194084338	10.1.1.1	10.1.1.2	TCP	70	12345 → 35024 [PSH, ACK] Seq=1 Ack=7 Wir
9	13.194170098	10.1.1.2	10.1.1.1	TCP	66	35024 → 12345 [ACK] Seq=7 Ack=5 Win=1460
10	14.946026128	10.1.1.1	10.1.1.2	TCP	70	12345 → 35024 [PSH, ACK] Seq=5 Ack=7 Wir
11	14.946080341	10.1.1.2	10.1.1.1	TCP	66	35024 → 12345 [ACK] Seq=7 Ack=9 Win=1460
12	19.256278995	10.1.1.2	10.1.1.1	TCP	72	35024 → 12345 [PSH, ACK] Seq=7 Ack=9 Wir
13	19.256322908	10.1.1.1	10.1.1.2	TCP	66	12345 → 35024 [ACK] Seq=9 Ack=13 Win=144
14	55.957132999	10.1.1.1	10.1.1.2	TCP	66	12345 → 35024 [FIN, ACK] Seq=9 Ack=13 Wi
15	55.957408078	10.1.1.2	10.1.1.1	TCP	66	35024 → 12345 [FIN, ACK] Seq=13 Ack=10 W
16	55.957443357	10.1.1.1	10.1.1.2	TCP	66	12345 → 35024 [ACK] Seq=10 Ack=14 Win=14
17	60.965615791	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42	Who has 10.1.1.2? Tell 10.1.1.1
18	60.965670051	fe:fd:00:00:02:00	fe:fd:00:00:01:00	ARP	42	10.1.1.2 is at fe:fd:00:00:02:00

EX 3.2

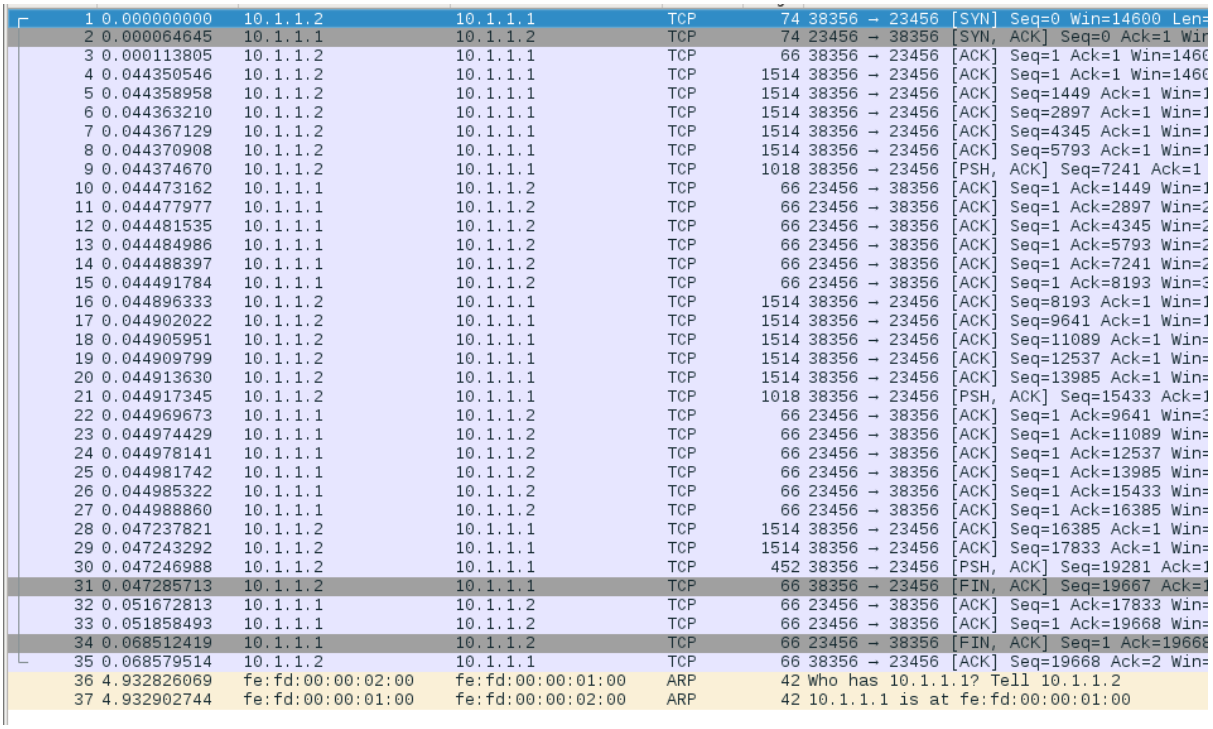
root@virt1:~# nc -l -p 23456

root@virt2:~# cat /etc/services | nc 10.1.1.1 23456 -q0

virt2-> SYN -> virt1

virt1->SYN+ACK->virt2

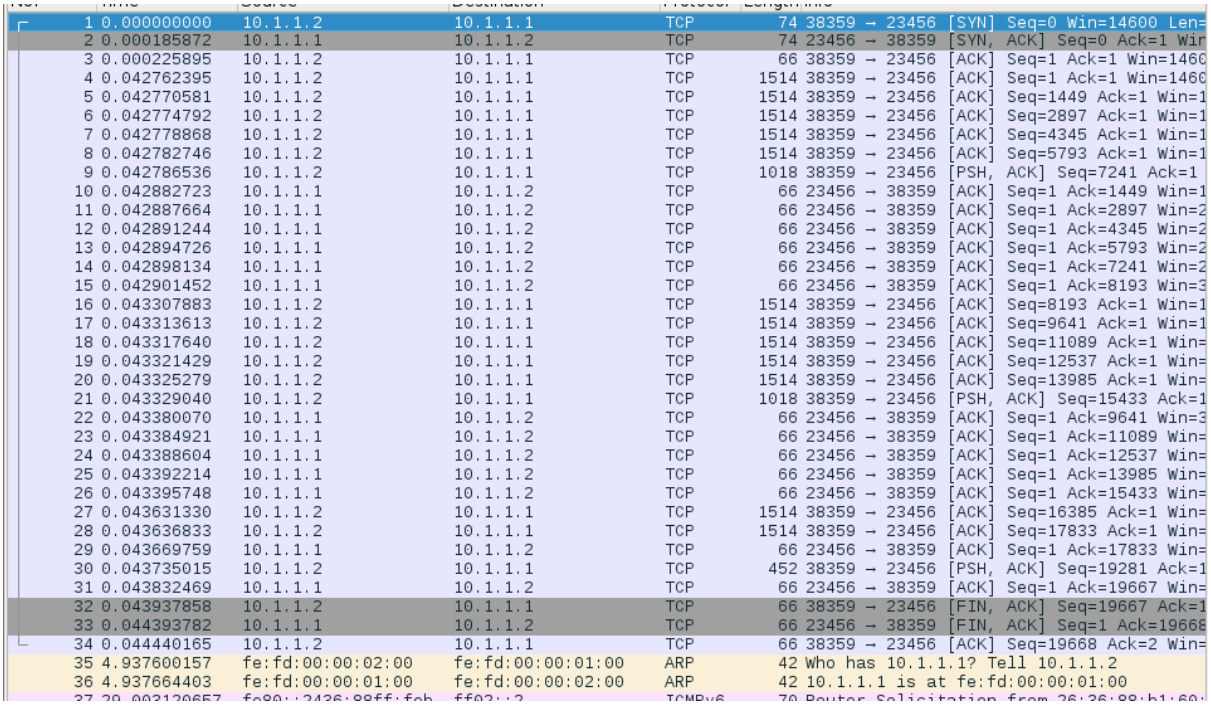
virt2-> ACK->virt1



1	0.000000000	10.1.1.2	10.1.1.1	TCP	74	38356 → 23456 [SYN] Seq=0 Win=14600 Len=
2	0.000064645	10.1.1.1	10.1.1.2	TCP	74	23456 → 38356 [SYN, ACK] Seq=0 Ack=1 Wir
3	0.000113805	10.1.1.2	10.1.1.1	TCP	66	38356 → 23456 [ACK] Seq=1 Ack=1 Win=1460
4	0.044350546	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=1 Ack=1 Win=1460
5	0.044358958	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=1449 Ack=1 Win=1
6	0.044363210	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=2897 Ack=1 Win=1
7	0.044367129	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=4345 Ack=1 Win=1
8	0.044370908	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=5793 Ack=1 Win=1
9	0.044374670	10.1.1.2	10.1.1.1	TCP	1018	38356 → 23456 [PSH, ACK] Seq=7241 Ack=1
10	0.044473162	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=1449 Win=1
11	0.044477977	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=2897 Win=2
12	0.044481535	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=4345 Win=2
13	0.044484986	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=5793 Win=2
14	0.044488397	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=7241 Win=2
15	0.044491784	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=8193 Win=3
16	0.044896333	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=8193 Ack=1 Win=1
17	0.044902022	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=9641 Ack=1 Win=1
18	0.044905951	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=11089 Ack=1 Win=
19	0.044909799	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=12537 Ack=1 Win=
20	0.044913630	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=13985 Ack=1 Win=
21	0.044917345	10.1.1.2	10.1.1.1	TCP	1018	38356 → 23456 [PSH, ACK] Seq=15433 Ack=1
22	0.044969673	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=9641 Win=3
23	0.044974429	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=11089 Win=
24	0.044978141	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=12537 Win=
25	0.044981742	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=13985 Win=
26	0.044985322	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=15433 Win=
27	0.044988860	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=16385 Win=
28	0.047237821	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=16385 Ack=1 Win=
29	0.047243292	10.1.1.2	10.1.1.1	TCP	1514	38356 → 23456 [ACK] Seq=17833 Ack=1 Win=
30	0.047246988	10.1.1.2	10.1.1.1	TCP	452	38356 → 23456 [PSH, ACK] Seq=19281 Ack=1
31	0.047285713	10.1.1.2	10.1.1.1	TCP	66	38356 → 23456 [FIN, ACK] Seq=19667 Ack=1
32	0.051672813	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=17833 Win=
33	0.051858493	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [ACK] Seq=1 Ack=19668 Win=
34	0.068512419	10.1.1.1	10.1.1.2	TCP	66	23456 → 38356 [FIN, ACK] Seq=1 Ack=19668
35	0.068579514	10.1.1.2	10.1.1.1	TCP	66	38356 → 23456 [ACK] Seq=19668 Ack=2 Win=
36	4.932826069	fe:fd:00:00:02:00	fe:fd:00:00:01:00	ARP	42	Who has 10.1.1.1? Tell 10.1.1.2
37	4.932902744	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42	10.1.1.1 is at fe:fd:00:00:01:00

root@virt1:~# nc -l -p 23456 > file.txt

root@virt2:~# cat /etc/services | nc 10.1.1.1 23456 -q0 > file.txt

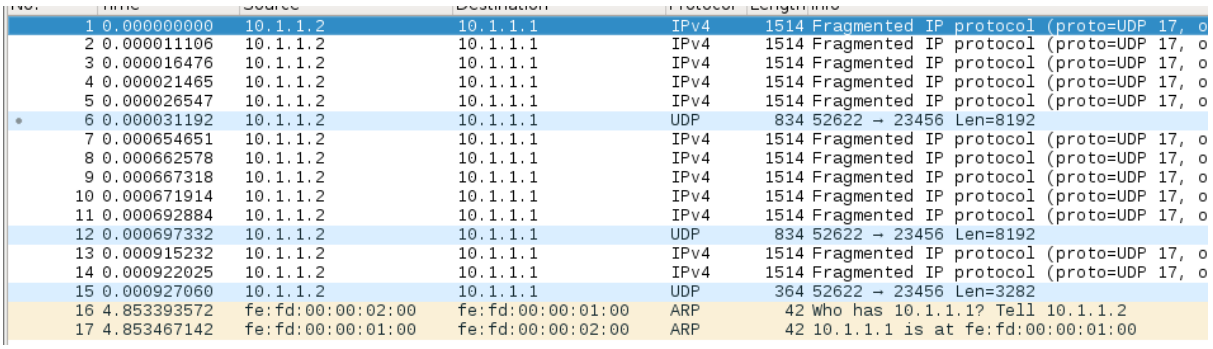


1	0.000000000	10.1.1.2	10.1.1.1	TCP	74	38359 → 23456 [SYN] Seq=0 Win=14600 Len=
2	0.000185872	10.1.1.1	10.1.1.2	TCP	74	23456 → 38359 [SYN, ACK] Seq=0 Ack=1 Wir
3	0.000225895	10.1.1.2	10.1.1.1	TCP	66	38359 → 23456 [ACK] Seq=1 Ack=1 Win=1460
4	0.042762395	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=1 Ack=1 Win=1460
5	0.042770581	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=1449 Ack=1 Win=1
6	0.042774792	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=2897 Ack=1 Win=1
7	0.042778868	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=4345 Ack=1 Win=1
8	0.042782746	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=5793 Ack=1 Win=1
9	0.042786536	10.1.1.2	10.1.1.1	TCP	1018	38359 → 23456 [PSH, ACK] Seq=7241 Ack=1
10	0.042882723	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=1449 Win=1
11	0.042887664	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=2897 Win=2
12	0.042891244	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=4345 Win=2
13	0.042894726	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=5793 Win=2
14	0.042898134	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=7241 Win=2
15	0.042901452	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=8193 Win=3
16	0.043307883	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=8193 Ack=1 Win=1
17	0.043313613	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=9641 Ack=1 Win=1
18	0.043317640	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=11089 Ack=1 Win=
19	0.043321429	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=12537 Ack=1 Win=
20	0.043325279	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=13985 Ack=1 Win=
21	0.043329040	10.1.1.2	10.1.1.1	TCP	1018	38359 → 23456 [PSH, ACK] Seq=15433 Ack=1
22	0.043380070	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=9641 Win=3
23	0.043384921	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=11089 Win=
24	0.043388604	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=12537 Win=
25	0.043392214	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=13985 Win=
26	0.043395748	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=15433 Win=
27	0.043631330	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=16385 Ack=1 Win=
28	0.043636833	10.1.1.2	10.1.1.1	TCP	1514	38359 → 23456 [ACK] Seq=17833 Ack=1 Win=
29	0.043669759	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=17833 Win=
30	0.043735015	10.1.1.2	10.1.1.1	TCP	452	38359 → 23456 [PSH, ACK] Seq=19281 Ack=1
31	0.043832469	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [ACK] Seq=1 Ack=19667 Win=
32	0.043937858	10.1.1.2	10.1.1.1	TCP	66	38359 → 23456 [FIN, ACK] Seq=19667 Ack=1
33	0.044393782	10.1.1.1	10.1.1.2	TCP	66	23456 → 38359 [FIN, ACK] Seq=1 Ack=19668
34	0.044440165	10.1.1.2	10.1.1.1	TCP	66	38359 → 23456 [ACK] Seq=19668 Ack=2 Win=
35	4.937600157	fe:fd:00:00:02:00	fe:fd:00:00:01:00	ARP	42	Who has 10.1.1.1? Tell 10.1.1.2
36	4.937664403	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42	10.1.1.1 is at fe:fd:00:00:01:00

EX 3.3

root@virt1:~# nc -l -p 23456 -u > file.txt

root@virt2:~# cat /etc/services | nc 10.1.1.1 23456 -u -q0 > file.txt



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
2	0.000011106	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
3	0.000016476	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
4	0.000021465	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
5	0.000026547	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
6	0.000031192	10.1.1.2	10.1.1.1	UDP	834	52622 → 23456 Len=8192
7	0.000654651	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
8	0.000662578	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
9	0.000667318	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
10	0.000671914	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
11	0.000692884	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
12	0.000697332	10.1.1.2	10.1.1.1	UDP	834	52622 → 23456 Len=8192
13	0.000915232	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
14	0.000922025	10.1.1.2	10.1.1.1	IPv4	1514	Fragmented IP protocol (proto=UDP 17, o
15	0.000927060	10.1.1.2	10.1.1.1	UDP	364	52622 → 23456 Len=3282
16	4.853393572	fe:fd:00:00:02:00	fe:fd:00:00:01:00	ARP	42	Who has 10.1.1.1? Tell 10.1.1.2
17	4.853467142	fe:fd:00:00:01:00	fe:fd:00:00:02:00	ARP	42	10.1.1.1 is at fe:fd:00:00:01:00

Main diff:
It is not needed ACK,
UDP uses all Bandwidth during all transmission

EX 3.4
host:~# sudo ifconfig SimNet0 10.1.1.3/24
virt1:~# ping –c1 10.1.1.3 -> It works!
host:~# date | nc.traditional –l –p 12345
virt1:~# nc 10.1.1.3 12345

```
root@virt1:~# nc 10.1.1.3 12345
Fri Mar 12 12:49:43 CET 2021
```

The service gives the date when the connection with the server takes place, though the client connects to the server later.

EX 3.5
root@virt1:~# df -h | nc -l -p 22333
root@virt2:~# nc 10.1.1.1 22333

EXERCISE 4
We need to create a file with writing and exec permissions.
New script /root/diskfree.sh:
#!/bin/bash
df -h
virt1:~# chmod u+x diskfree.sh
virt1:~# /etc/init.d/openbsd-inetd start
virt1:~# nano /etc/inetd.conf
Add: diskfree stream tcp nowait root /root/diskfree.sh
virt1:~# nano /etc/services
Add diskfree 22333/tcp
virt1:~# /etc/init.d/openbsd-inetd restart

```
root@virt2:~# nc 10.1.1.1 22333
S.ficheros            Size  Used Avail Use% Montado en
/dev/ubda             2,0G  1,6G  385M  81% /
tmpfs                  30M     0   30M   0% /lib/init/rw
udev                   10M   16K   10M   1% /dev
tmpfs                  30M     0   30M   0% /dev/shm
tmpfs                  30M  1,5M   28M   5% /tmp
tmpfs                  30M     0   30M   0% /var/tmp
/dev/ubdb             352K  352K     0 100% /mnt/vnuml
none                   37G  8,2G   27G  24% /mnt/hostfs
root@virt2:~#
```

La diferència és que el nestat s'utilitza quan es realitzen poques connexions a un port per un servei determinar, en cquest cas s'assigna temporalment un port al servei i un cop finalitzat es tanca. En canvi, amb el servei inetd s'utilitza per quan es realitzen moltes peticions d'un servei concret, en aquest cas, es dedica un port exclusiu per al servei, fent que sempre estigui escoltant.
virt1:~# /etc/init.d/openbsd-inetd stop

EXERCISE 5
EX 5.1

```
virt1.0# /etc/init.d/apache2 start 2> /dev/null
```

Apache listens on port 80.
virt1:~# netstat –tnlp | grep 80

```
root@virt1:~# /etc/init.d/apache2 start 2> /dev/null
Starting web server: apache2httpd (pid 1093) already running
.
root@virt1:~# netstat -tnlp | grep 80
tcp6       0      0 :::80                   :::*                    LISTEN      1093/apache2
```

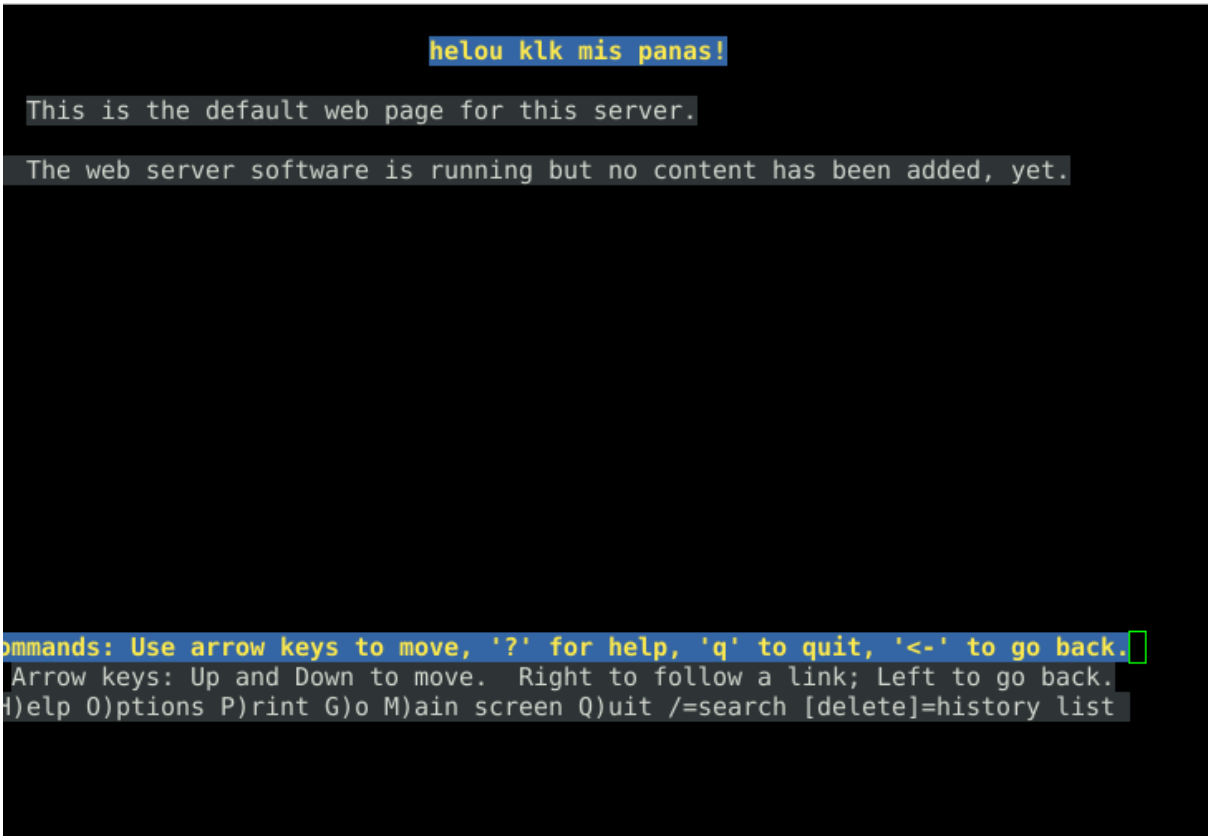
Debian-based distros store the Apache 2.0 configuration files in the directory /etc/apache2.
The PID is 1093.
npi

EX 5.2
Edit file /var/www/index.html:

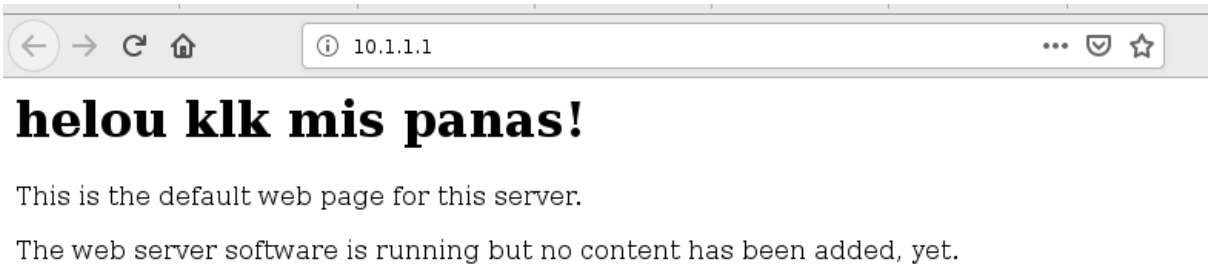
```
  GNU nano 2.2.4            Fichero: index.html

<html><body><h1>helou klk mis panas!</h1>
<p>This is the default web page for this server.</p>
<p>The web server software is running but no content has been added, yet.</p>
</body></html>
```

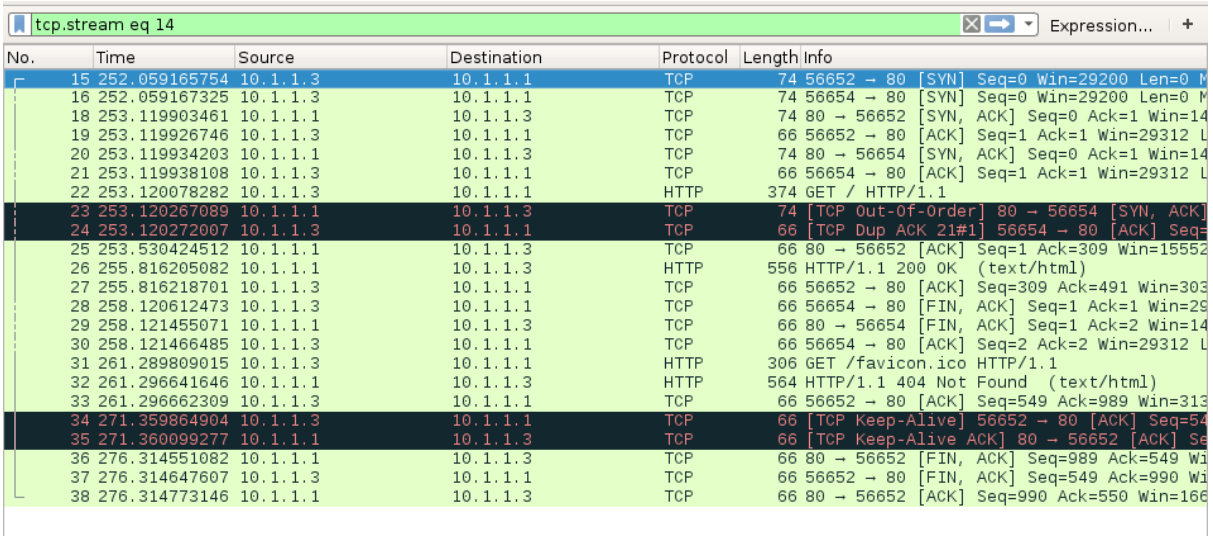
```
$ lynx http://10.1.1.1
```



EX 5.3
host:~$ sudo ifconfig SimNet0 10.1.1.3/24
host:~$ /usr/bin/firefox http://10.1.1.1
Espectacular



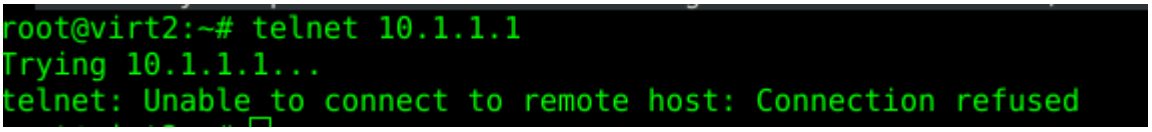
SimNet0:

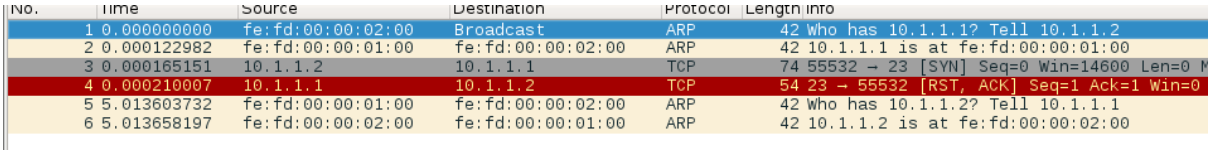


virt1:~# /etc/init.d/apache2 stop

EXERCISE 6

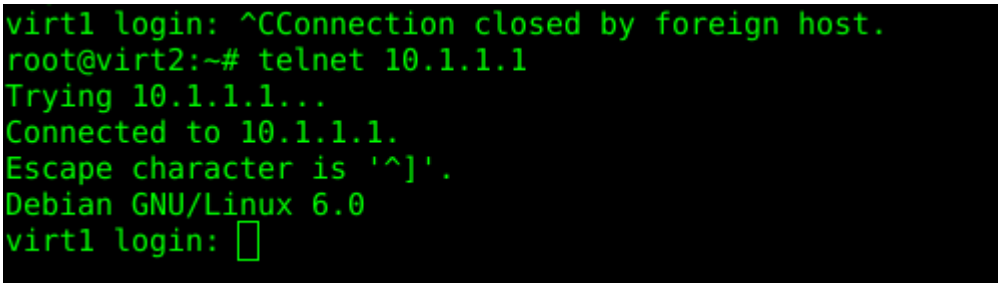
EX 6.1



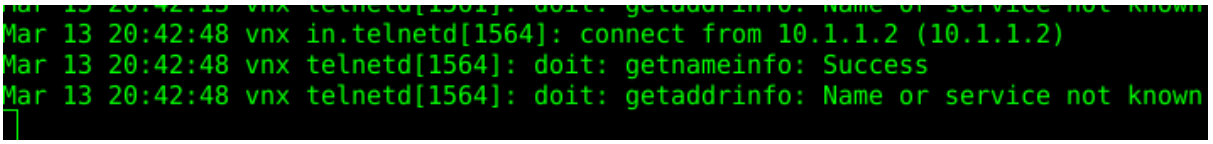


Unable cause we need to activate the server.

virt1:~# nano /etc/inetd.conf -> telnet
virt1:~# /etc/init.d/openbsd-inetd reload



virt1:~# tail –f /var/log/daemon.log



EX 6.2

virt1:~# nano /etc/securetty

With netstat we see the ports listening virt2 are diff and the commons use diff PIDs.

```
root@virt2:~# netstat -tnlp
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN      712/portmap
tcp        0      0 0.0.0.0:113             0.0.0.0:*               LISTEN      1299/inetd
tcp        0      0 0.0.0.0:47060           0.0.0.0:*               LISTEN      733/rpc.statd
tcp        0      0 0.0.0.0:21              0.0.0.0:*               LISTEN      1299/inetd
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      1328/sshd
tcp        0      0 0.0.0.0:23              0.0.0.0:*               LISTEN      1299/inetd
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1257/exim4
tcp6       0      0 :::80                   :::*                    LISTEN      895/apache2
tcp6       0      0 :::22                   :::*                    LISTEN      1328/sshd
tcp6       0      0 ::1:25                  :::*                    LISTEN      1257/exim4
root@virt2:~# netstat -tnlp | grep inetd
tcp        0      0 0.0.0.0:113             0.0.0.0:*               LISTEN      1299/inetd
tcp        0      0 0.0.0.0:21              0.0.0.0:*               LISTEN      1299/inetd
tcp        0      0 0.0.0.0:23              0.0.0.0:*               LISTEN      1299/inetd
```

EX 6.3

virt2:~# telnet 10.1.1.1

login: root

password: xxxx

```
root@virt1:~# netstat -tnlp
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:43566           0.0.0.0:*               LISTEN      801/rpc.statd
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN      785/portmap
tcp        0      0 0.0.0.0:113             0.0.0.0:*               LISTEN      1601/inetd
tcp        0      0 0.0.0.0:21              0.0.0.0:*               LISTEN      1601/inetd
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      1396/sshd
tcp        0      0 0.0.0.0:23              0.0.0.0:*               LISTEN      1601/inetd
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1325/exim4
tcp6       0      0 :::22                   :::*                    LISTEN      1396/sshd
tcp6       0      0 ::1:25                  :::*                    LISTEN      1325/exim4
```

EX 6.4

```
  GNU nano 2.2.4                Fichero: file.txt

hei im mireia from a remote connection in virt2 to virt1.
Hope u see this file.
kisses
xxxx
```

Done;)

EX 6.5

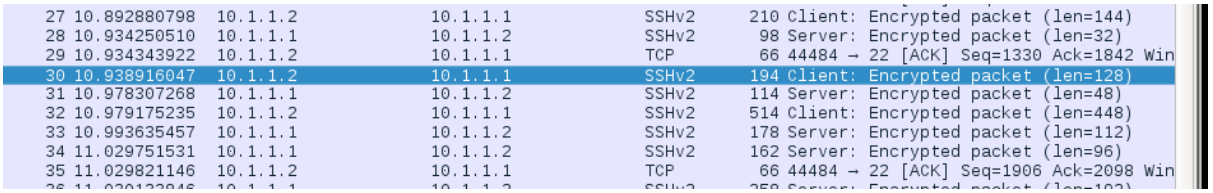
The data is tal cual, not encrypted, INCLUDING PASSWORDS. Such a rubbish the security.

EX 6.6

```
root@virt2:~# ssh 10.1.1.1
The authenticity of host '10.1.1.1 (10.1.1.1)' can't be established.
RSA key fingerprint is 6c:f3:c4:44:e8:1c:fd:3c:93:e5:9d:cc:50:58:cb:11.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.1.1.1' (RSA) to the list of known hosts.
root@10.1.1.1's password:
Linux vnx 3.3.8 #1 Sun Nov 6 04:59:42 MST 2016 i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sat Mar 13 21:02:05 2021
root@virt1:~#
```



27	10.892880798	10.1.1.2	10.1.1.1	SSHv2	210	Client: Encrypted packet (len=144)
28	10.934250510	10.1.1.1	10.1.1.2	SSHv2	98	Server: Encrypted packet (len=32)
29	10.934343922	10.1.1.2	10.1.1.1	TCP	66	44484 → 22 [ACK] Seq=1330 Ack=1842 Win
30	10.938916047	10.1.1.2	10.1.1.1	SSHv2	194	Client: Encrypted packet (len=128)
31	10.978307268	10.1.1.1	10.1.1.2	SSHv2	114	Server: Encrypted packet (len=48)
32	10.979175235	10.1.1.2	10.1.1.1	SSHv2	514	Client: Encrypted packet (len=448)
33	10.993635457	10.1.1.1	10.1.1.2	SSHv2	178	Server: Encrypted packet (len=112)
34	11.029751531	10.1.1.1	10.1.1.2	SSHv2	162	Server: Encrypted packet (len=96)
35	11.029821146	10.1.1.2	10.1.1.1	TCP	66	44484 → 22 [ACK] Seq=1906 Ack=2098 Win

The info is encrypted.

EXERCISE 7

EX 7.1

```
Connected to 10.1.1.1.
220 virt1 FTP server (Version 6.4/OpenBSD/Linux-ftpd-0.17) ready.
Name (10.1.1.1:root): root
331 Password required for root.
Password:
530 Login incorrect.
Login failed.
ftp>
```

SimNet0:

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	10.1.1.2	10.1.1.1	TCP	74	52971 → 21 [SYN] Seq=0 Win=14600 Len=0 M
2	0.000063880	10.1.1.1	10.1.1.2	TCP	74	21 → 52971 [SYN, ACK] Seq=0 Ack=1 Win=14
3	0.000109936	10.1.1.2	10.1.1.1	TCP	66	52971 → 21 [ACK] Seq=1 Ack=1 Win=14608 L
4	0.149404976	10.1.1.1	10.1.1.2	FTP	133	Response: 220 virt1 FTP server (Version
5	0.149546121	10.1.1.2	10.1.1.1	TCP	66	52971 → 21 [ACK] Seq=1 Ack=68 Win=14608
8	8.284565037	10.1.1.2	10.1.1.1	FTP	77	Request: USER root
9	8.284775430	10.1.1.1	10.1.1.2	TCP	66	21 → 52971 [ACK] Seq=68 Ack=12 Win=1448
10	8.331012388	10.1.1.1	10.1.1.2	FTP	99	Response: 331 Password required for root
11	8.331128407	10.1.1.2	10.1.1.1	TCP	66	52971 → 21 [ACK] Seq=12 Ack=101 Win=1460
12	11.876224311	10.1.1.2	10.1.1.1	FTP	77	Request: PASS xxxx
13	11.931798432	10.1.1.1	10.1.1.2	TCP	66	21 → 52971 [ACK] Seq=101 Ack=23 Win=1448
14	13.749301403	10.1.1.1	10.1.1.2	FTP	88	Response: 530 Login incorrect.
15	13.749414044	10.1.1.2	10.1.1.1	TCP	66	52971 → 21 [ACK] Seq=23 Ack=123 Win=1460
16	13.750271055	10.1.1.2	10.1.1.1	FTP	72	Request: SYST
17	13.750414498	10.1.1.1	10.1.1.2	TCP	66	21 → 52971 [ACK] Seq=123 Ack=29 Win=1448
18	13.750668472	10.1.1.1	10.1.1.2	FTP	104	Response: 530 Please login with USER and
19	13.784448400	10.1.1.2	10.1.1.1	TCP	66	52971 → 21 [ACK] Seq=29 Ack=161 Win=1460

After login, virt2 sends a SYST request and we receive an 503 error (“Please login with USER and …”)

EX 7.2

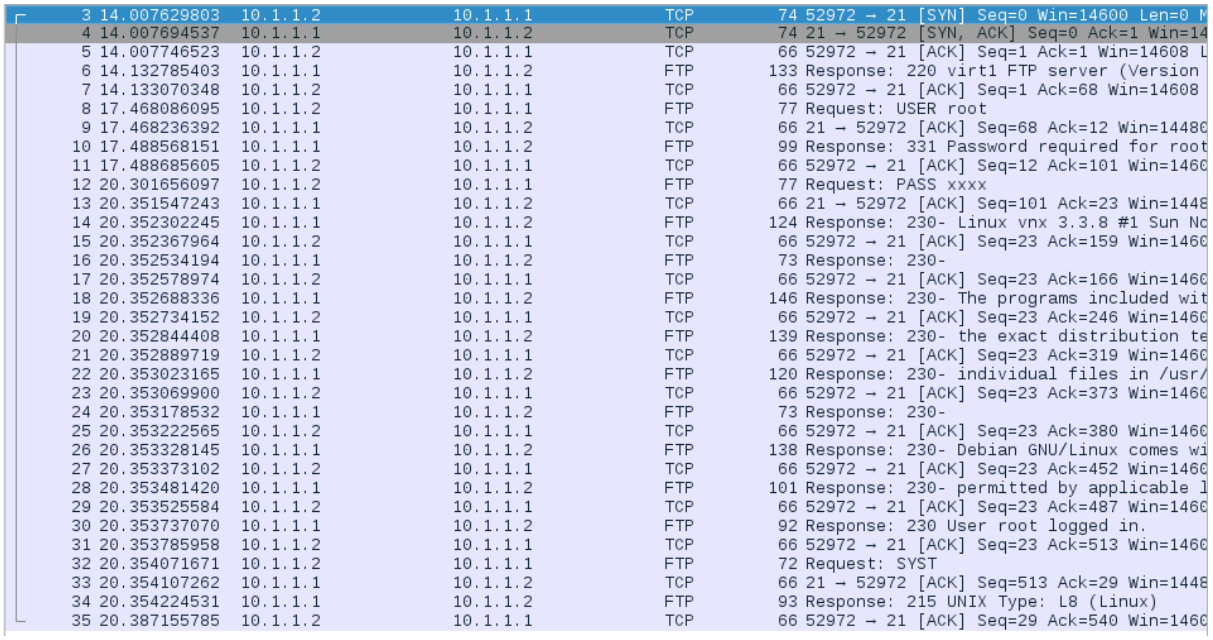
virt1.0:~# vi /etc/ftpusers → comentar amb un # el root (és la màquina que volem entrar)

EX 7.3

virt2.0:~# ftp 10.1.1.1

```
root@virt2:~# ftp 10.1.1.1
Connected to 10.1.1.1.
220 virt1 FTP server (Version 6.4/OpenBSD/Linux-ftpd-0.17) ready.
Name (10.1.1.1:root): root
331 Password required for root.
Password:
230- Linux vnx 3.3.8 #1 Sun Nov 6 04:59:42 MST 2016 i686
230-
230- The programs included with the Debian GNU/Linux system are free software;
230- the exact distribution terms for each program are described in the
230- individual files in /usr/share/doc/*/copyright.
230-
230- Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
230- permitted by applicable law.
230 User root logged in.
Remote system type is UNIX.
Using binary mode to transfer files.
```

SimNet0:



```
     3 14.007629803  10.1.1.2          10.1.1.1          TCP        74 52972 → 21 [SYN] Seq=0 Win=14600 Len=0 M
     4 14.007694537  10.1.1.1          10.1.1.2          TCP        74 21 → 52972 [SYN, ACK] Seq=0 Ack=1 Win=14
     5 14.007746523  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=1 Ack=1 Win=14608 L
     6 14.132785403  10.1.1.1          10.1.1.2          FTP       133 Response: 220 virt1 FTP server (Version
     7 14.133070348  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=1 Ack=68 Win=14608
     8 17.468086095  10.1.1.2          10.1.1.1          FTP        77 Request: USER root
     9 17.468236392  10.1.1.1          10.1.1.2          TCP        66 21 → 52972 [ACK] Seq=68 Ack=12 Win=1448C
    10 17.488568151  10.1.1.1          10.1.1.2          FTP        99 Response: 331 Password required for root
    11 17.488685605  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=12 Ack=101 Win=1460
    12 20.301656097  10.1.1.2          10.1.1.1          FTP        77 Request: PASS xxxx
    13 20.351547243  10.1.1.1          10.1.1.2          TCP        66 21 → 52972 [ACK] Seq=101 Ack=23 Win=1448
    14 20.352302245  10.1.1.1          10.1.1.2          FTP       124 Response: 230- Linux vnx 3.3.8 #1 Sun Nc
    15 20.352367964  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=159 Win=1460
    16 20.352534194  10.1.1.1          10.1.1.2          FTP        73 Response: 230-
    17 20.352578974  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=166 Win=1460
    18 20.352688336  10.1.1.1          10.1.1.2          FTP       146 Response: 230- The programs included wit
    19 20.352734152  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=246 Win=1460
    20 20.352844408  10.1.1.1          10.1.1.2          FTP       139 Response: 230- the exact distribution te
    21 20.352889719  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=319 Win=1460
    22 20.353023165  10.1.1.1          10.1.1.2          FTP       120 Response: 230- individual files in /usr/
    23 20.353069900  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=373 Win=1460
    24 20.353178532  10.1.1.1          10.1.1.2          FTP        73 Response: 230-
    25 20.353222565  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=380 Win=1460
    26 20.353328145  10.1.1.1          10.1.1.2          FTP       138 Response: 230- Debian GNU/Linux comes wi
    27 20.353373102  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=452 Win=1460
    28 20.353481420  10.1.1.1          10.1.1.2          FTP       101 Response: 230- permitted by applicable l
    29 20.353525584  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=487 Win=1460
    30 20.353737070  10.1.1.1          10.1.1.2          FTP        92 Response: 230 User root logged in.
    31 20.353785958  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=23 Ack=513 Win=1460
    32 20.354071671  10.1.1.2          10.1.1.1          FTP        72 Request: SYST
    33 20.354107262  10.1.1.1          10.1.1.2          TCP        66 21 → 52972 [ACK] Seq=513 Ack=29 Win=1448
    34 20.354224531  10.1.1.1          10.1.1.2          FTP        93 Response: 215 UNIX Type: L8 (Linux)
    35 20.387155785  10.1.1.2          10.1.1.1          TCP        66 52972 → 21 [ACK] Seq=29 Ack=540 Win=1460
```

virt2.1:~# netstat –tlnp | grep 21 (ftp) -> PID= 1299

virt1:~# netstat –tlnp | grep 21 (ftp) -> PID= 1601

virt2.1:~# lsof –a –p 1299 –d0-10 -> 4u

virt1:~# lsof –a –p 1601 –d0-10 -> 4u

```
root@virt2:~# netstat -tnlp |grep 21
tcp        0      0 0.0.0.0:21              0.0.0.0:*               LISTEN      1299/inetd
root@virt2:~# lsof -a -p 1299 -d0-10
COMMAND  PID USER   FD   TYPE DEVICE SIZE/OFF NODE NAME
inetd   1299 root    0u   CHR    1,3      0t0   41 /dev/null
inetd   1299 root    1u   CHR    1,3      0t0   41 /dev/null
inetd   1299 root    2u   CHR    1,3      0t0   41 /dev/null
inetd   1299 root    4u  IPv4   2277      0t0  TCP *:ftp (LISTEN)
inetd   1299 root    5u  IPv4   2280      0t0  TCP *:telnet (LISTEN)
inetd   1299 root    6u  IPv4   2283      0t0  TCP *:auth (LISTEN)
```

```
root@virt1:~# netstat -tnlp | grep 21
tcp        0      0 0.0.0.0:21              0.0.0.0:*               LISTEN      1601/inetd
root@virt1:~# lsof -a -p 1601 -d0-10
COMMAND  PID USER   FD   TYPE DEVICE SIZE/OFF NODE NAME
inetd   1601 root    0u   CHR    1,3      0t0   41 /dev/null
inetd   1601 root    1u   CHR    1,3      0t0   41 /dev/null
inetd   1601 root    2u   CHR    1,3      0t0   41 /dev/null
inetd   1601 root    4u  IPv4   2855      0t0  TCP *:ftp (LISTEN)
inetd   1601 root    5u  IPv4   2858      0t0  TCP *:telnet (LISTEN)
inetd   1601 root    6u  IPv4   2861      0t0  TCP *:auth (LISTEN)
```

EX 7.4

ftp> dir /usr/bin/z*

```
ftp> dir /usr/bin/z*
200 PORT command successful.
150 Opening ASCII mode data connection for '/bin/ls'.
-rwxr-xr-x 1 root root  13764 jun  8  2012 /usr/bin/zdump
-rwxr-xr-x 1 root root   2953 feb 21  2010 /usr/bin/zipgrep
-rwxr-xr-x 2 root root 145692 feb 21  2010 /usr/bin/zipinfo
-rwxr-xr-x 1 root root  95852 ene  3  2011 /usr/bin/zsoelim
226 Transfer complete.
```

The default data is in binary.

EX 7.5

```
117 688.181367965 10.1.1.2    10.1.1.1    FTP      89 Request: PORT 10,1,1,2,147,240
118 688.188743478 10.1.1.1    10.1.1.2    FTP      96 Response: 200 PORT command successful
119 688.188840413 10.1.1.2    10.1.1.1    TCP      66 52972 → 21 [ACK] Seq=95 Ack=708 Win=1
120 688.189000060 10.1.1.2    10.1.1.1    FTP      84 Request: LIST /usr/bin/z*
121 688.207052221 10.1.1.1    10.1.1.2    TCP      74 20 → 37872 [SYN] Seq=0 Win=14600 Len=
122 688.207215466 10.1.1.2    10.1.1.1    TCP      74 37872 → 20 [SYN, ACK] Seq=0 Ack=1 Win
123 688.217025889 10.1.1.1    10.1.1.2    TCP      66 20 → 37872 [ACK] Seq=1 Ack=1 Win=1460
124 688.217583181 10.1.1.1    10.1.1.2    FTP     121 Response: 150 Opening ASCII mode data
125 688.263312720 10.1.1.2    10.1.1.1    TCP      66 52972 → 21 [ACK] Seq=113 Ack=763 Win=
126 688.312954694 10.1.1.1    10.1.1.2    FTP-DA.. 308 FTP Data: 242 bytes (PORT) (LIST /usr
127 688.313119749 10.1.1.2    10.1.1.1    TCP      66 37872 → 20 [ACK] Seq=1 Ack=243 Win=15
128 688.313442585 10.1.1.1    10.1.1.2    FTP      90 Response: 226 Transfer complete.
129 688.313488388 10.1.1.2    10.1.1.1    TCP      66 52972 → 21 [ACK] Seq=113 Ack=787 Win=
130 688.313532876 10.1.1.1    10.1.1.2    TCP      66 20 → 37872 [FIN, ACK] Seq=243 Ack=1 W
131 688.313670564 10.1.1.2    10.1.1.1    TCP      66 37872 → 20 [FIN, ACK] Seq=1 Ack=244 W
132 688.313713087 10.1.1.1    10.1.1.2    TCP      66 20 → 37872 [ACK] Seq=244 Ack=2 Win=14
```

port on virt2: 37872

EX 7.6

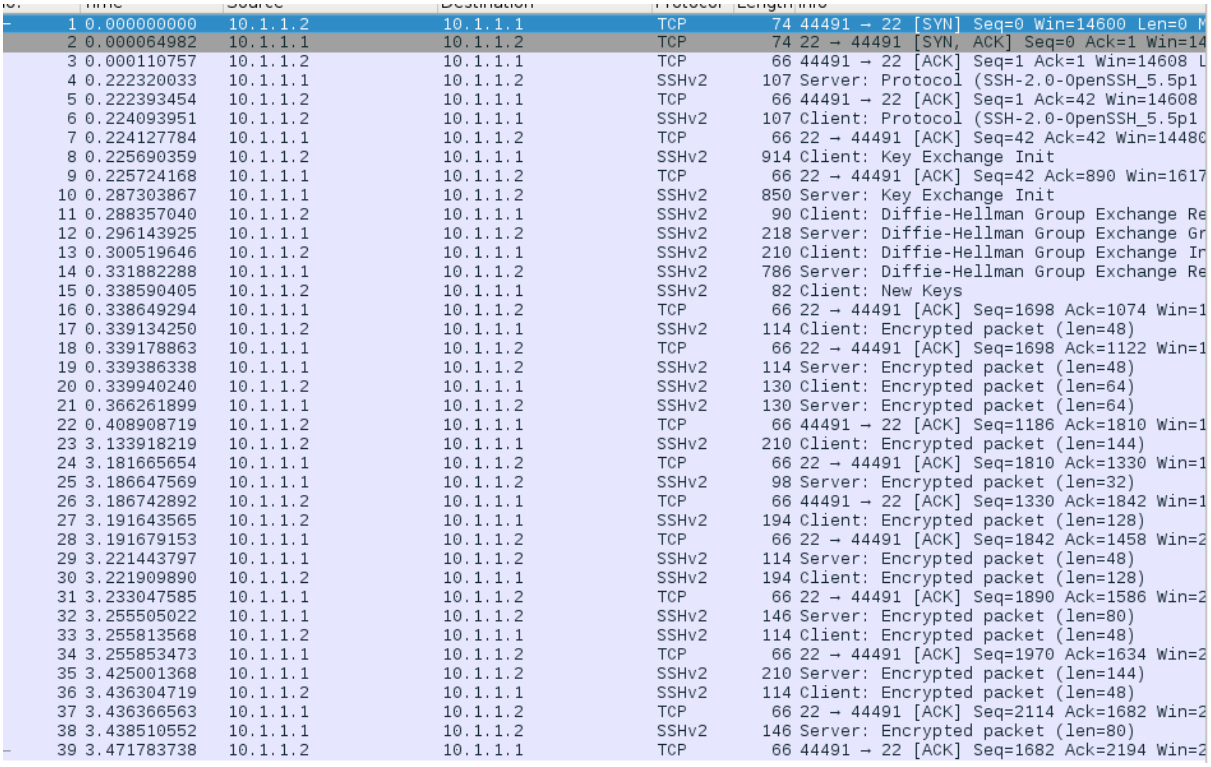
files on virt1:

```
-rwxr-xr-x 1 root   root      13764 jun  8  2012 zdump
-rwxr-xr-x 1 root   root       2953 feb 21  2010 zipgrep
-rwxr-xr-x 2 root   root     145692 feb 21  2010 zipinfo
-rwxr-xr-x 1 root   root      95852 ene  3  2011 zsoelim
```

files on virt2:

same?

EX 7.7



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	10.1.1.2	10.1.1.1	TCP	74	44491 → 22 [SYN] Seq=0 Win=14600 Len=0 M
2	0.000064982	10.1.1.1	10.1.1.2	TCP	74	22 → 44491 [SYN, ACK] Seq=0 Ack=1 Win=14
3	0.000110757	10.1.1.2	10.1.1.1	TCP	66	44491 → 22 [ACK] Seq=1 Ack=1 Win=14608 L
4	0.222320033	10.1.1.1	10.1.1.2	SSHv2	107	Server: Protocol (SSH-2.0-OpenSSH_5.5p1
5	0.222393454	10.1.1.2	10.1.1.1	TCP	66	44491 → 22 [ACK] Seq=1 Ack=42 Win=14608
6	0.224093951	10.1.1.2	10.1.1.1	SSHv2	107	Client: Protocol (SSH-2.0-OpenSSH_5.5p1
7	0.224127784	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=42 Ack=42 Win=1448C
8	0.225690359	10.1.1.2	10.1.1.1	SSHv2	914	Client: Key Exchange Init
9	0.225724168	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=42 Ack=890 Win=1617
10	0.287303867	10.1.1.1	10.1.1.2	SSHv2	850	Server: Key Exchange Init
11	0.288357040	10.1.1.2	10.1.1.1	SSHv2	90	Client: Diffie-Hellman Group Exchange Re
12	0.296143925	10.1.1.1	10.1.1.2	SSHv2	218	Server: Diffie-Hellman Group Exchange Gr
13	0.300519646	10.1.1.2	10.1.1.1	SSHv2	210	Client: Diffie-Hellman Group Exchange In
14	0.331882288	10.1.1.1	10.1.1.2	SSHv2	786	Server: Diffie-Hellman Group Exchange Re
15	0.338590405	10.1.1.2	10.1.1.1	SSHv2	82	Client: New Keys
16	0.338649294	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=1698 Ack=1074 Win=1
17	0.339134250	10.1.1.2	10.1.1.1	SSHv2	114	Client: Encrypted packet (len=48)
18	0.339178863	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=1698 Ack=1122 Win=1
19	0.339386338	10.1.1.1	10.1.1.2	SSHv2	114	Server: Encrypted packet (len=48)
20	0.339940240	10.1.1.2	10.1.1.1	SSHv2	130	Client: Encrypted packet (len=64)
21	0.366261899	10.1.1.1	10.1.1.2	SSHv2	130	Server: Encrypted packet (len=64)
22	0.408908719	10.1.1.2	10.1.1.1	TCP	66	44491 → 22 [ACK] Seq=1186 Ack=1810 Win=1
23	3.133918219	10.1.1.2	10.1.1.1	SSHv2	210	Client: Encrypted packet (len=144)
24	3.181665654	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=1810 Ack=1330 Win=1
25	3.186647569	10.1.1.1	10.1.1.2	SSHv2	98	Server: Encrypted packet (len=32)
26	3.186742892	10.1.1.2	10.1.1.1	TCP	66	44491 → 22 [ACK] Seq=1330 Ack=1842 Win=1
27	3.191643565	10.1.1.2	10.1.1.1	SSHv2	194	Client: Encrypted packet (len=128)
28	3.191679153	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=1842 Ack=1458 Win=2
29	3.221443797	10.1.1.1	10.1.1.2	SSHv2	114	Server: Encrypted packet (len=48)
30	3.221909890	10.1.1.2	10.1.1.1	SSHv2	194	Client: Encrypted packet (len=128)
31	3.233047585	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=1890 Ack=1586 Win=2
32	3.255505022	10.1.1.1	10.1.1.2	SSHv2	146	Server: Encrypted packet (len=80)
33	3.255813568	10.1.1.2	10.1.1.1	SSHv2	114	Client: Encrypted packet (len=48)
34	3.255853473	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=1970 Ack=1634 Win=2
35	3.425001368	10.1.1.1	10.1.1.2	SSHv2	210	Server: Encrypted packet (len=144)
36	3.436304719	10.1.1.2	10.1.1.1	SSHv2	114	Client: Encrypted packet (len=48)
37	3.436366563	10.1.1.1	10.1.1.2	TCP	66	22 → 44491 [ACK] Seq=2114 Ack=1682 Win=2
38	3.438510552	10.1.1.1	10.1.1.2	SSHv2	146	Server: Encrypted packet (len=80)
39	3.471783738	10.1.1.2	10.1.1.1	TCP	66	44491 → 22 [ACK] Seq=1682 Ack=2194 Win=2

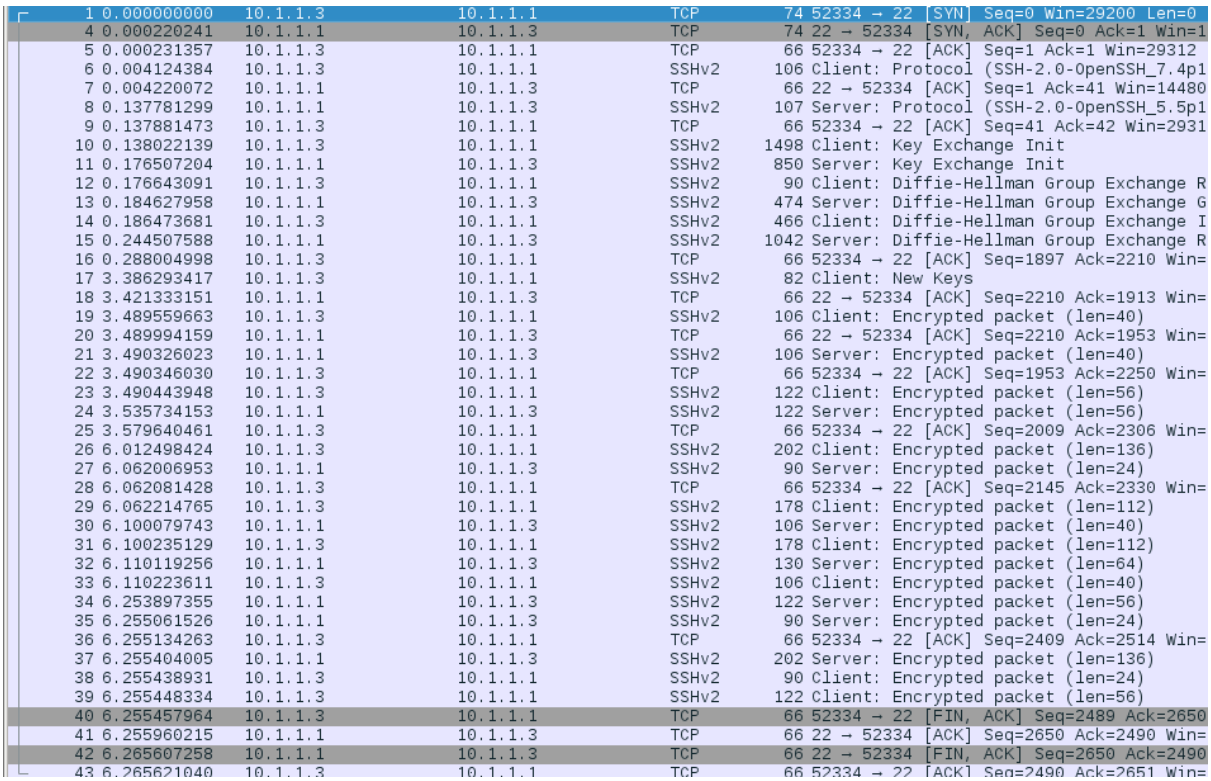
EX 7.8

host:~$ nano file.txt

host:~$ scp root@10.1.1.1: file.txt

**ERROR:

scp: .: not a regular file



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	10.1.1.3	10.1.1.1	TCP	74	52334 → 22 [SYN] Seq=0 Win=29200 Len=0
4	0.000220241	10.1.1.1	10.1.1.3	TCP	74	22 → 52334 [SYN, ACK] Seq=0 Ack=1 Win=1
5	0.000231357	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=1 Ack=1 Win=29312
6	0.004124384	10.1.1.3	10.1.1.1	SSHv2	106	Client: Protocol (SSH-2.0-OpenSSH_7.4p1
7	0.004220072	10.1.1.1	10.1.1.3	TCP	66	22 → 52334 [ACK] Seq=1 Ack=41 Win=14480
8	0.137781299	10.1.1.1	10.1.1.3	SSHv2	107	Server: Protocol (SSH-2.0-OpenSSH_5.5p1
9	0.137881473	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=41 Ack=42 Win=2931
10	0.138022139	10.1.1.3	10.1.1.1	SSHv2	1498	Client: Key Exchange Init
11	0.176507204	10.1.1.1	10.1.1.3	SSHv2	850	Server: Key Exchange Init
12	0.176643091	10.1.1.3	10.1.1.1	SSHv2	90	Client: Diffie-Hellman Group Exchange R
13	0.184627958	10.1.1.1	10.1.1.3	SSHv2	474	Server: Diffie-Hellman Group Exchange G
14	0.186473681	10.1.1.3	10.1.1.1	SSHv2	466	Client: Diffie-Hellman Group Exchange I
15	0.244507588	10.1.1.1	10.1.1.3	SSHv2	1042	Server: Diffie-Hellman Group Exchange R
16	0.288004998	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=1897 Ack=2210 Win=
17	3.386293417	10.1.1.3	10.1.1.1	SSHv2	82	Client: New Keys
18	3.421333151	10.1.1.1	10.1.1.3	TCP	66	22 → 52334 [ACK] Seq=2210 Ack=1913 Win=
19	3.489559663	10.1.1.3	10.1.1.1	SSHv2	106	Client: Encrypted packet (len=40)
20	3.489994159	10.1.1.1	10.1.1.3	TCP	66	22 → 52334 [ACK] Seq=2210 Ack=1953 Win=
21	3.490326023	10.1.1.1	10.1.1.3	SSHv2	106	Server: Encrypted packet (len=40)
22	3.490346030	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=1953 Ack=2250 Win=
23	3.490443948	10.1.1.3	10.1.1.1	SSHv2	122	Client: Encrypted packet (len=56)
24	3.535734153	10.1.1.1	10.1.1.3	SSHv2	122	Server: Encrypted packet (len=56)
25	3.579640461	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=2009 Ack=2306 Win=
26	6.012498424	10.1.1.3	10.1.1.1	SSHv2	202	Client: Encrypted packet (len=136)
27	6.062006953	10.1.1.1	10.1.1.3	SSHv2	90	Server: Encrypted packet (len=24)
28	6.062081428	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=2145 Ack=2330 Win=
29	6.062214765	10.1.1.3	10.1.1.1	SSHv2	178	Client: Encrypted packet (len=112)
30	6.100079743	10.1.1.1	10.1.1.3	SSHv2	106	Server: Encrypted packet (len=40)
31	6.100235129	10.1.1.3	10.1.1.1	SSHv2	178	Client: Encrypted packet (len=112)
32	6.110119256	10.1.1.1	10.1.1.3	SSHv2	130	Server: Encrypted packet (len=64)
33	6.110223611	10.1.1.3	10.1.1.1	SSHv2	106	Client: Encrypted packet (len=40)
34	6.253897355	10.1.1.1	10.1.1.3	SSHv2	122	Server: Encrypted packet (len=56)
35	6.255061526	10.1.1.1	10.1.1.3	SSHv2	90	Server: Encrypted packet (len=24)
36	6.255134263	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=2409 Ack=2514 Win=
37	6.255404005	10.1.1.1	10.1.1.3	SSHv2	202	Server: Encrypted packet (len=136)
38	6.255438931	10.1.1.3	10.1.1.1	SSHv2	90	Client: Encrypted packet (len=24)
39	6.255448334	10.1.1.3	10.1.1.1	SSHv2	122	Client: Encrypted packet (len=56)
40	6.255457964	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [FIN, ACK] Seq=2489 Ack=2650
41	6.255960215	10.1.1.1	10.1.1.3	TCP	66	22 → 52334 [ACK] Seq=2650 Ack=2490 Win=
42	6.265607258	10.1.1.1	10.1.1.3	TCP	66	22 → 52334 [FIN, ACK] Seq=2650 Ack=2490
43	6.265621040	10.1.1.3	10.1.1.1	TCP	66	52334 → 22 [ACK] Seq=2490 Ack=2651 Win=