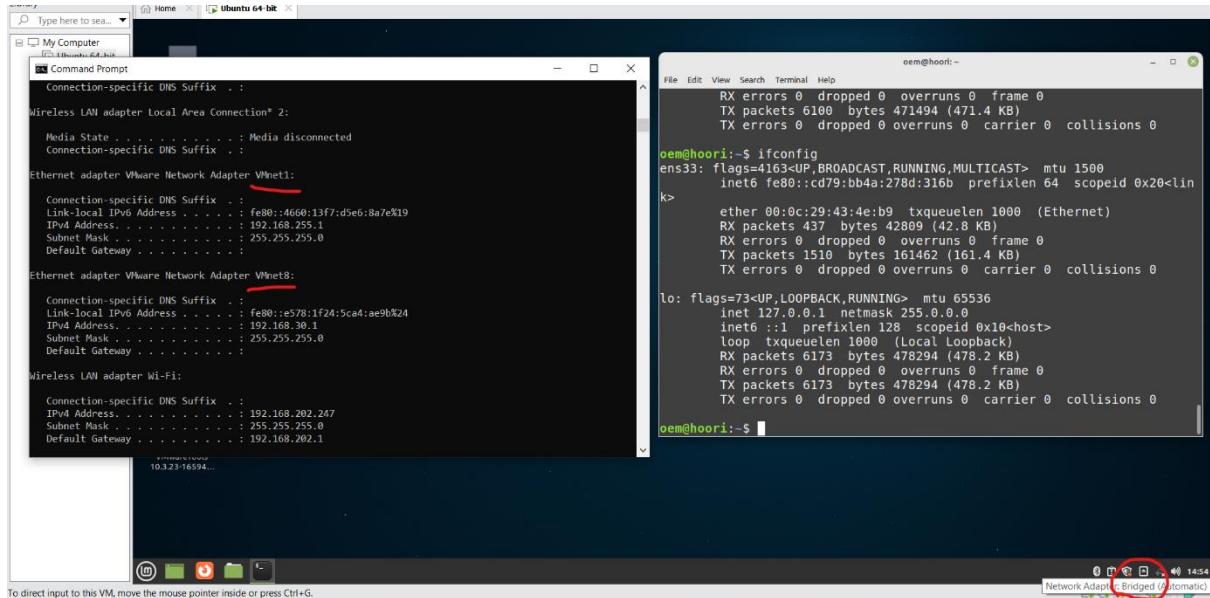


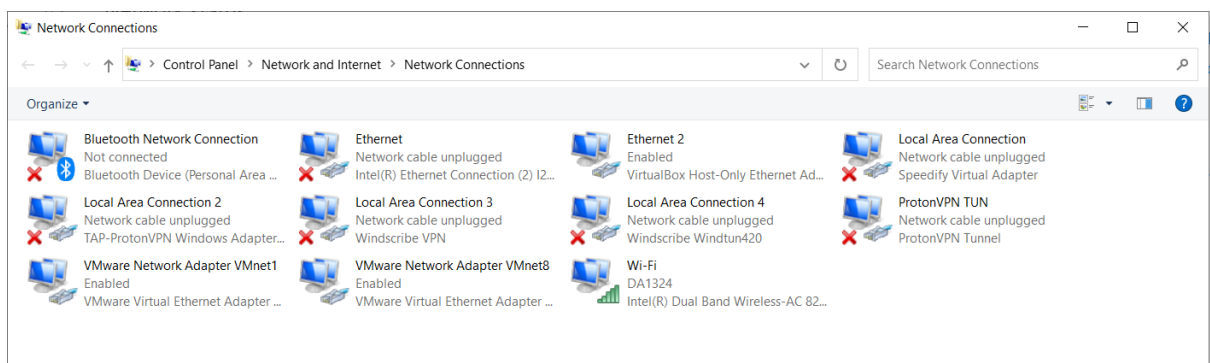
بخش اول

گام دوم:



روی حالت bridge قرار گرفته ولی کارت شبکه bridge رو روی سیستم ندارم به همین خاطر
نشانش نمیدهد

توی این شکل فقط کارت شبکه 1 و 8 را دارم



```

Command Prompt
Default Gateway . . . . . :
Ethernet adapter VMware Network Adapter VMnet8:

Connection-specific DNS Suffix  . :
Link-local IPv6 Address . . . . . : fe80::e578:1f24:5ca4:ae9b%24
IPv4 Address. . . . . : 192.168.30.1
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix  . :
IPv4 Address. . . . . : 192.168.202.247
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.202.1

Ethernet adapter Bluetooth Network Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix  . :

C:\Users\hoori>

oem@hoori:~$ sudo ufw enable
Firewall is active and enabled on system startup
oem@hoori:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.30.128 netmask 255.255.255.0 broadcast 192.168.30.255
    inet6 fe80::cd79:bb4a:278d:316b prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:43:4e:b9 txqueuelen 1000 (Ethernet)
    RX packets 114 bytes 12136 (12.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 1104 bytes 116051 (116.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 5998 bytes 462161 (462.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5998 bytes 462161 (462.1 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

C:\Users\hoori>ping 192.168.30.128

Pinging 192.168.30.128 with 32 bytes of data:

Reply from 192.168.30.128: bytes=32 time<1ms TTL=64

Reply from 192.168.30.128: bytes=32 time<1ms TTL=64

Reply from 192.168.30.128: bytes=32 time<1ms TTL=64

Reply from 192.168.30.128: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.30.128:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\hoori>

```

oem@hoori:~$ ping 192.168.30.1
PING 192.168.30.1 (192.168.30.1) 56(84) bytes of data.
64 bytes from 192.168.30.1: icmp_seq=1 ttl=128 time=0.472 ms
64 bytes from 192.168.30.1: icmp_seq=2 ttl=128 time=0.349 ms
64 bytes from 192.168.30.1: icmp_seq=3 ttl=128 time=0.426 ms
64 bytes from 192.168.30.1: icmp_seq=4 ttl=128 time=0.418 ms
64 bytes from 192.168.30.1: icmp_seq=5 ttl=128 time=0.362 ms
64 bytes from 192.168.30.1: icmp_seq=6 ttl=128 time=0.300 ms
64 bytes from 192.168.30.1: icmp_seq=7 ttl=128 time=0.308 ms
64 bytes from 192.168.30.1: icmp_seq=8 ttl=128 time=0.269 ms
64 bytes from 192.168.30.1: icmp_seq=9 ttl=128 time=0.285 ms
64 bytes from 192.168.30.1: icmp_seq=10 ttl=128 time=0.303 ms
64 bytes from 192.168.30.1: icmp_seq=11 ttl=128 time=0.299 ms
64 bytes from 192.168.30.1: icmp_seq=12 ttl=128 time=0.290 ms
64 bytes from 192.168.30.1: icmp_seq=13 ttl=128 time=0.260 ms
64 bytes from 192.168.30.1: icmp_seq=14 ttl=128 time=0.275 ms
64 bytes from 192.168.30.1: icmp_seq=15 ttl=128 time=0.308 ms
64 bytes from 192.168.30.1: icmp_seq=16 ttl=128 time=0.277 ms
64 bytes from 192.168.30.1: icmp_seq=17 ttl=128 time=0.267 ms
64 bytes from 192.168.30.1: icmp_seq=18 ttl=128 time=0.306 ms
^C

```

گام چهارم:

```

Command Prompt

Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::4660:13f7:d5e6:8a7e%19
    IPv4 Address. . . . . : 192.168.255.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::e578:1f24:5ca4:ae9b%24
    IPv4 Address. . . . . : 192.168.30.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . : 
    IPv4 Address. . . . . : 192.168.202.247
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.202.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 

C:\Users\hoori>

```

```

oem@hoori:~$ ping 192.168.30.1
ping: connect: Network is unreachable
oem@hoori:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.255.128 netmask 255.255.255.0 broadcast 192.168.255.255
    inet6 fe80::cd79:bb4a:278d:316b prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:43:4e:b9 txqueuelen 1000 (Ethernet)
    RX packets 403 bytes 39517 (39.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 1369 bytes 141084 (141.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 6070 bytes 468905 (468.9 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 6070 bytes 468905 (468.9 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

oem@hoori:~$

```

C:\Users\hoori>ping 192.168.255.128

```

Pinging 192.168.255.128 with 32 bytes of data:
Reply from 192.168.255.128: bytes=32 time<1ms TTL=64
Reply from 192.168.255.128: bytes=32 time<1ms TTL=64
Reply from 192.168.255.128: bytes=32 time<1ms TTL=64
Reply from 192.168.255.128: bytes=32 time<1ms TTL=64

```

Ping statistics for 192.168.255.128:

```

    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

C:\Users\hoori>

```

oem@hoori:~$ ping 192.168.255.1
PING 192.168.255.1 (192.168.255.1) 56(84) bytes of data.
64 bytes from 192.168.255.1: icmp_seq=1 ttl=128 time=0.372 ms
64 bytes from 192.168.255.1: icmp_seq=2 ttl=128 time=0.372 ms
64 bytes from 192.168.255.1: icmp_seq=3 ttl=128 time=0.367 ms
64 bytes from 192.168.255.1: icmp_seq=4 ttl=128 time=0.381 ms
64 bytes from 192.168.255.1: icmp_seq=5 ttl=128 time=0.291 ms
64 bytes from 192.168.255.1: icmp_seq=6 ttl=128 time=0.406 ms
64 bytes from 192.168.255.1: icmp_seq=7 ttl=128 time=0.302 ms
64 bytes from 192.168.255.1: icmp_seq=8 ttl=128 time=0.284 ms
64 bytes from 192.168.255.1: icmp_seq=9 ttl=128 time=0.342 ms
^C
--- 192.168.255.1 ping statistics ---
9 packets transmitted, 9 received, 0% packet loss, time 8193ms
rtt min/avg/max/mdev = 0.284/0.346/0.406/0.041 ms
oem@hoori:~$

```

گام پنجم:

در حالت bridge کارت شبکه سیستم مجازی به کارت شبکه فیزیکی سیستم اصلی متصل شده و چون دقیقاً مانند یک ماشین مستقل عمل میکند از طریق اتصال به کارت شبکه فیزیکی مستقل به اینترنت دسترسی پیدا میکند (اگر سیستم اصلی به اینترنت متصل باشد) و از DHCP ادرس ip میگیرد ولی شرط اینکه از طریق کارت شبکه فیزیکی بتواند ادرس بگیرد این است که ادرس شبکه مجازی و سیستم اصلی در یک رنج باشد تا ارتباط اولیه به درستی صورت گیرد.

در حالت NAT ادرس شبکه مجازی و شبکه سیستم اصلی در یک رنج نیست زیرا ادرس شبکه مجازی در محدوده ای است که در قسمت virtual network editor به vmnet8 اختصاص داده شده است (این رنج ادرس به صورت دستی قابل تغییر است) اما با وجود متفاوت بودن رنج ادرس ها چون ترجمه ادرس صورت می گیرد از دو رنج مختلف شبکه مجازی باز هم از طریق سیستم اصلی می تواند به اینترنت متصل شود.

در حالت Host only ارتباط با دنیای بیرون از شبکه مجازی قطع است زیرا شبکه مجازی ایزوله است و ادرس خود را از همان رنج ادرسی میگیرد که به vmnet1 در تنظیمات virtual network editor این محدوده مشخص شده است.

گام ششم: (امتیازی)

```
File Edit View Search Terminal Help
oem@hoori:~$ sudo apt install openssh-server
[sudo] password for oem:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-client openssh-sftp-server ssh-import-id
Suggested packages:
  keychain libpam-ssh monkeysphere ssh-askpass molly-guard
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
The following packages will be upgraded:
  openssh-client
Processing triggers for man-db (2.7.5-1) ...
Processing triggers for ufw (0.36-6ubuntu1) ..
oem@hoori:~$ sudo systemctl start ssh
oem@hoori:~$
```

```
C:\Users\hoori>ssh oem@192.168.30.128
The authenticity of host '192.168.30.128 (192.168.30.128)' can't be established.
ECDSA key fingerprint is SHA256:e7nccBGJy3kxkz0z1jE054k0u2lri3Ruq+LTc683cbs.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.30.128' (ECDSA) to the list of known hosts.
oem@192.168.30.128's password:
oem@hoori:~$
```

بخش دوم

گام اول:

```
oem@hoori: ~  
File Edit View Search Terminal Help  
RX packets 6173 bytes 478294 (478.2 KB)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 6173 bytes 478294 (478.2 KB)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
oem@hoori:~$ sudo adduser hoori-9821413  
[sudo] password for oem:  
Adding user `hoori-9821413' ...  
Adding new group `hoori-9821413' (1002) ...  
Adding new user `hoori-9821413' (1002) with group `hoori-9821413' ...  
Creating home directory `/home/hoori-9821413' ...  
Copying files from `/etc/skel' ...  
New password:  
Retype new password:  
passwd: password updated successfully  
Changing the user information for hoori-9821413  
Enter the new value, or press ENTER for the default  
Full Name []:  
Room Number []:  
Work Phone []:  
Home Phone []:  
Other []:  
Is the information correct? [Y/n] y  
oem@hoori:~$
```

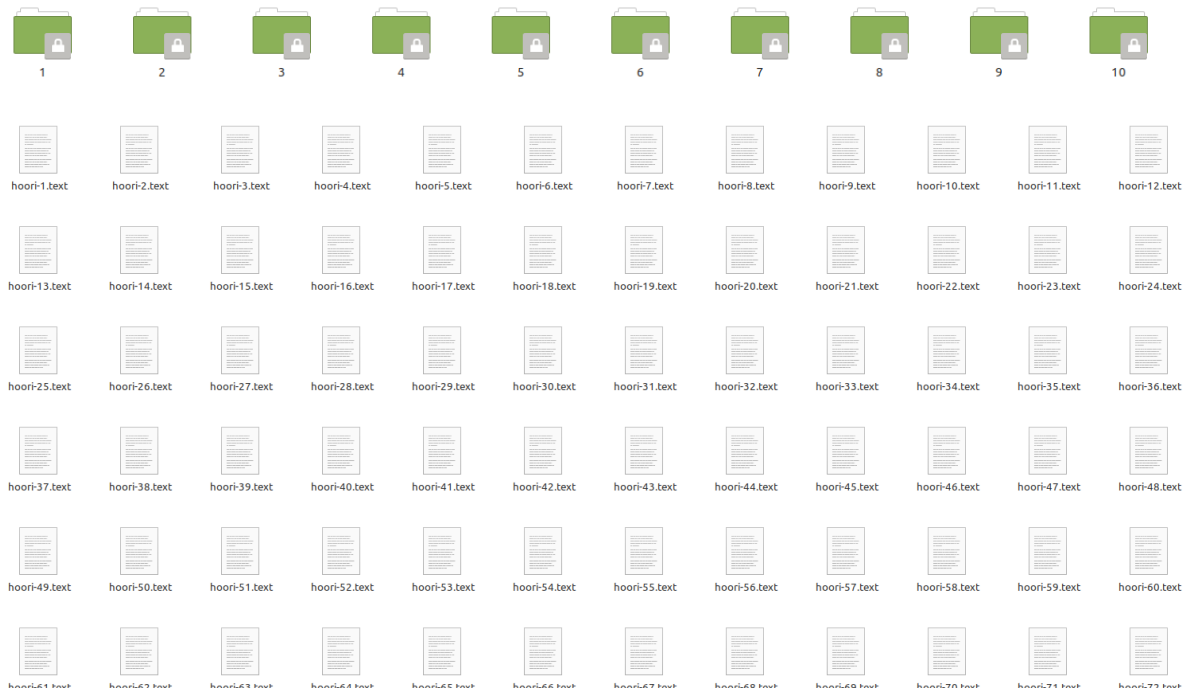
```
oem@hoori:~$ sudo adduser hoori-9821413 sudo  
Adding user `hoori-9821413' to group `sudo' ...  
Adding user hoori-9821413 to group sudo  
Done.  
oem@hoori:~$
```

گام دوم:

```
oem@hoori:~$ sudo su - hoori-9821413  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
hoori-9821413@hoori:~$ date  
Sun 19 Feb 2023 03:07:53 PM +0330  
hoori-9821413@hoori:~$ hostname  
hoori  
hoori-9821413@hoori:~$ hostnamectl  
Static hostname: hoori  
Icon name: computer-vm  
Chassis: vm  
Machine ID: 09143d0261be487380a9ec9bf41d5922  
Boot ID: 04ba882d92404f269ffca351d6255c47  
Virtualization: vmware  
Operating System: Linux Mint 20.3  
Kernel: Linux 5.4.0-91-generic  
Architecture: x86-64  
hoori-9821413@hoori:~$ whoami  
hoori-9821413  
hoori-9821413@hoori:~$
```


گام سوم:

```
oem@hoori:~$ cd Desktop/  
oem@hoori:~/Desktop$ mkdir az2  
oem@hoori:~/Desktop$ cd az2  
oem@hoori:~/Desktop/az2$ sudo mkdir {1..10}  
[sudo] password for oem:  
oem@hoori:~/Desktop/az2$ for i in {1..10}; do for j in {1..100}; do sudo touch $i/hoori-$j.text; done done  
oem@hoori:~/Desktop/az2$
```



گام چهارم: (امتیازی)

```
File Edit View Search Terminal Help  
oem@hoori:~$ cd Desktop/  
oem@hoori:~/Desktop$ cd az2  
oem@hoori:~/Desktop/az2$ touch Step4.sh  
oem@hoori:~/Desktop/az2$ vim Step4.sh
```

```
#!/bin/bash  
  
#for i in {1..10}  
for ((i=1;i<11;i++))  
do  
    if ((i%2==0));then  
        chmod 755 $i  
    fi  
    if ((i%2==1));then  
        chmod 700 $i  
    fi  
    cd $i  
    for ((j=1;j<=100;j++))  
    do  
        if ((j%2==1));then  
            chmod 750 hoori-$j.text  
        fi  
        if ((j%2==0));then  
            chmod 705 hoori-$j.text  
        fi  
    done  
    cd /home/oem/Desktop/az2  
done
```

```
oem@hoori:~/Desktop/az2$ ls -l
total 44
drwx----- 2 root root 4096 Feb 19 20:38 1
drwxr-xr-x 2 root root 4096 Feb 19 20:38 10
drwxr-xr-x 2 root root 4096 Feb 19 20:38 2
drwx----- 2 root root 4096 Feb 19 20:38 3
drwxr-xr-x 2 root root 4096 Feb 19 20:38 4
drwx----- 2 root root 4096 Feb 19 20:38 5
drwxr-xr-x 2 root root 4096 Feb 19 20:38 6
drwx----- 2 root root 4096 Feb 19 20:38 7
drwxr-xr-x 2 root root 4096 Feb 19 20:38 8
drwx----- 2 root root 4096 Feb 19 20:38 9
-rwxrwxrwx 1 oem oem 313 Feb 20 20:08 Step4.sh
```



گام پنجم:

```
oem@hoori:~$ sudo ifconfig ens33 192.168.58.2
oem@hoori:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.58.2 netmask 255.255.255.0 broadcast 192.168.58.255
    inet6 fe80::cd79:bb4a:278d:316b prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:43:4e:b9 txqueuelen 1000 (Ethernet)
    RX packets 13997 bytes 14612386 (14.6 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5375 bytes 396872 (396.8 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 472 bytes 43618 (43.6 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 472 bytes 43618 (43.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

گام ششم:

```
oem@hoori:~$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
oem@hoori:~$

oem@hoori:~$ sudo route add default gw 192.168.30.130
oem@hoori:~$ route -n
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 192.168.30.130 0.0.0.0 UG 0 0 0 ens33
0.0.0.0 192.168.30.2 0.0.0.0 UG 20100 0 0 ens33
169.254.0.0 0.0.0.0 255.255.0.0 U 1000 0 0 ens33
192.168.30.0 0.0.0.0 255.255.255.0 U 100 0 0 ens33
oem@hoori:~$

oem@hoori:~$ sudo route add -net 192.168.51.207 netmask 255.255.255.255 reject
oem@hoori:~$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
192.168.51.207 - 255.255.255.255 !H 0 - 0 -
oem@hoori:~$
```