



دانشگاه صنعتی اصفهان

دانشکده مهندسی برق و کامپیوتر

عنوان: تکلیف سوم آزمایشگاه شبکه‌های کامپیوتری

نام و نام خانوادگی: علیرضا ابره فروش

شماره دانشجویی: ۹۸۱۶۶۰۳

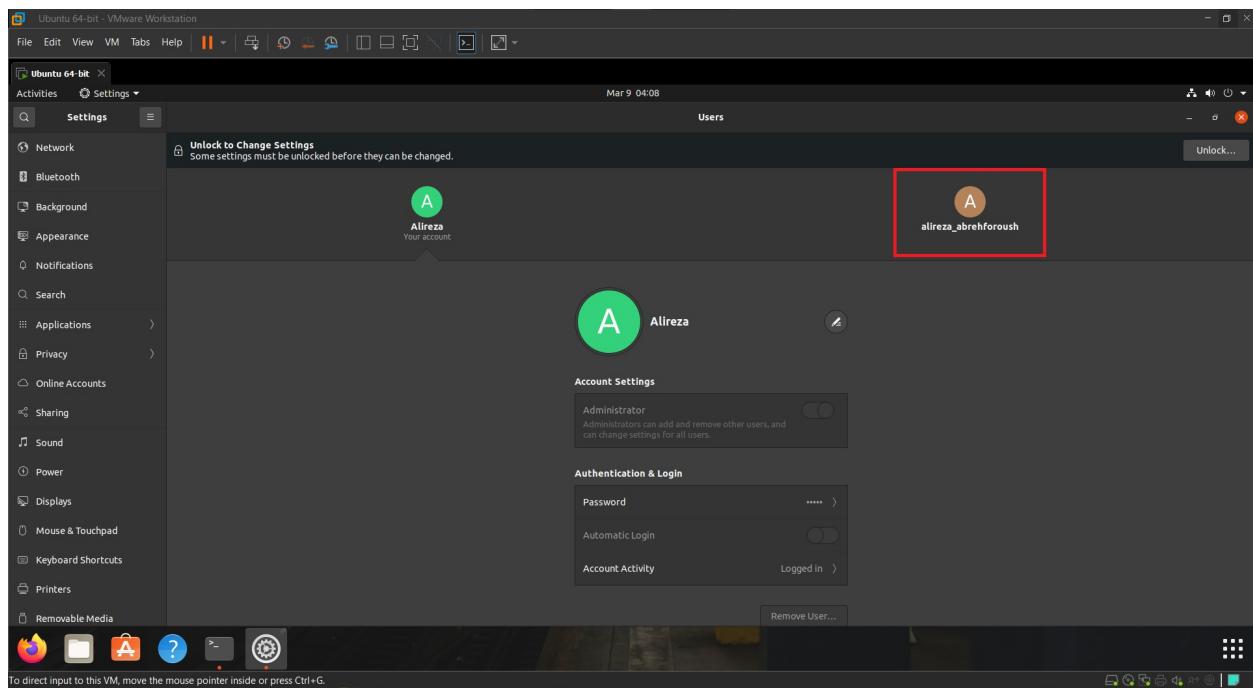
نیم سال تحصیلی: بهار ۱۴۰۰/۱۴۰۱

```

Ubuntu 64-bit - VMware Workstation
File Edit View VM Tabs Help Mar 9 04:07
Activities Terminal alireza@ubuntu:~-
alireza@ubuntu:~$ sudo adduser alireza_abrehforoush
[sudo] password for alireza:
Adding user 'alireza_abrehforoush' ...
Adding new group `alireza_abrehforoush' (1001) ...
Adding new user 'alireza_abrehforoush' (1001) with group `alireza_abrehforoush' ...
Creating home directory '/home/alireza_abrehforoush' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for alireza_abrehforoush
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
alireza@ubuntu:~$ 

```

sudo adduser alireza_abrehforoush :۱

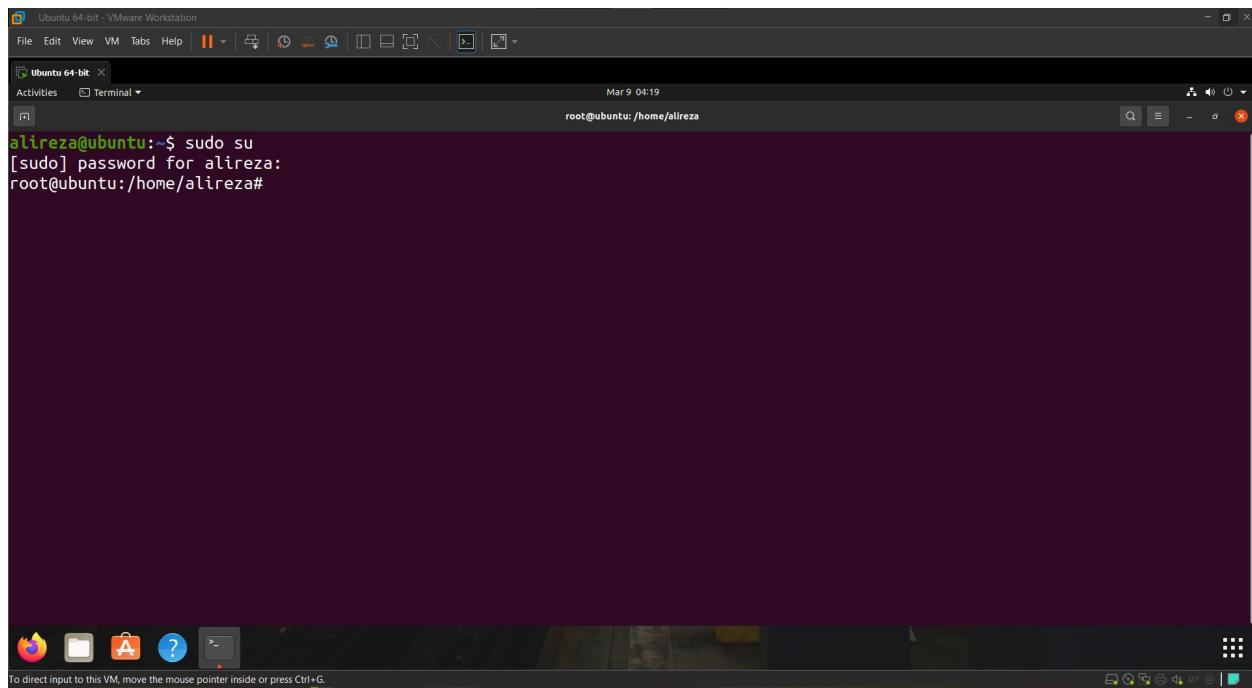


Settings/Users :۲

همانطور که در تصویر می بینیم، حساب کاربری ایجاد شد.

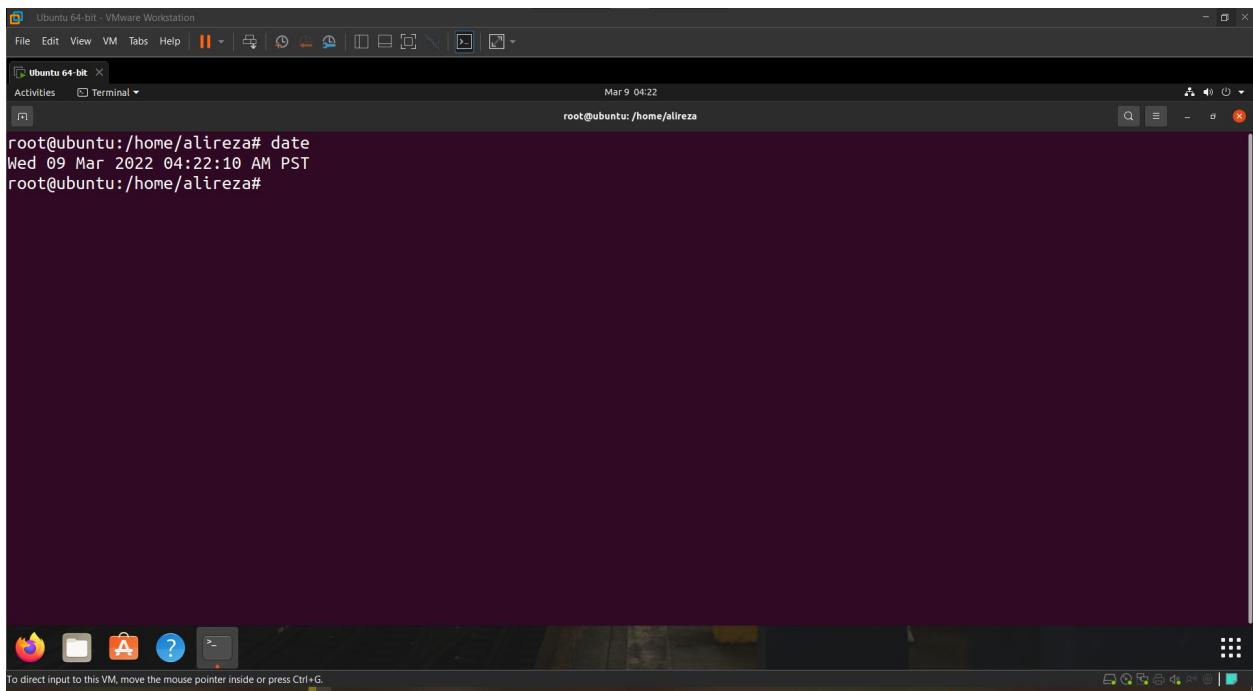
۲

با وارد کردن دستور sudo su وارد حالت ریشه می شویم.



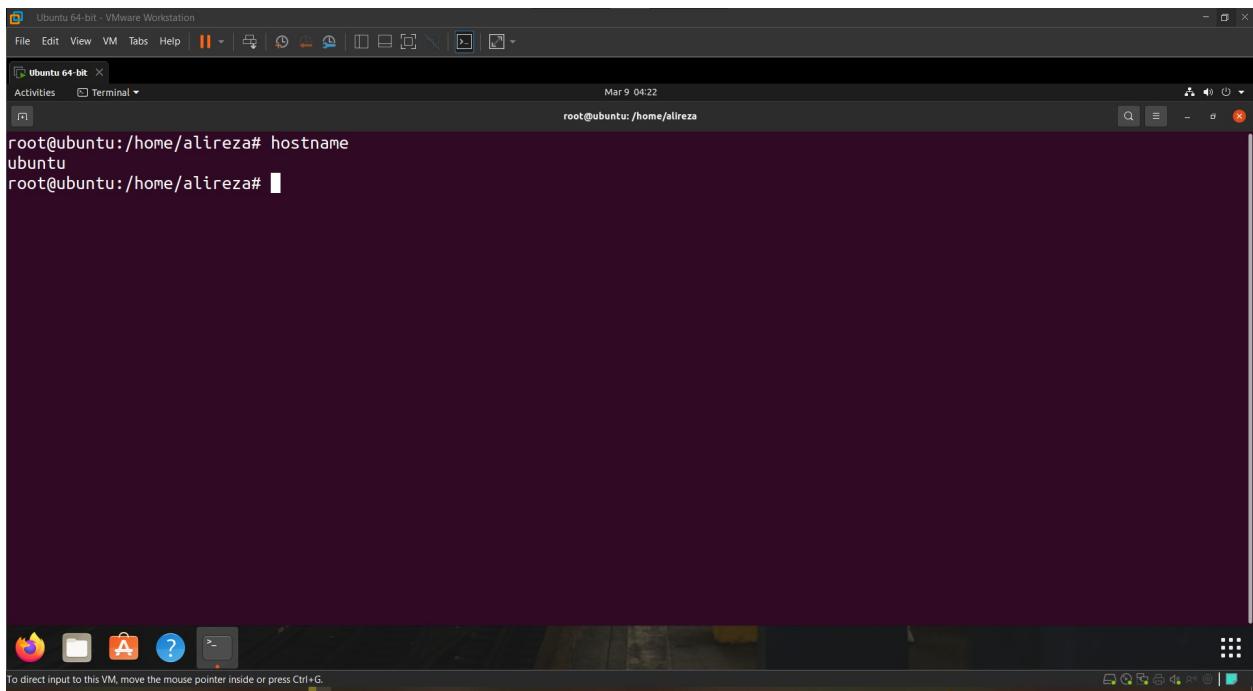
شکل ۳ sudo su :

۱.۲ تاریخ سیستم



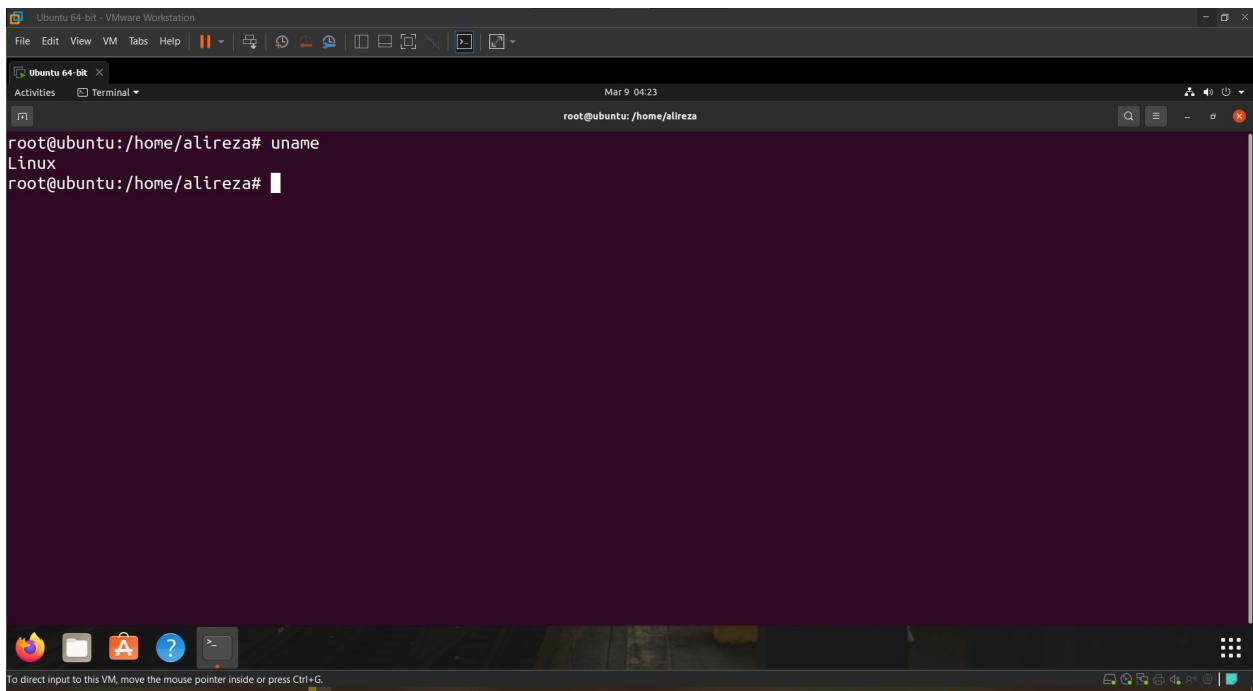
شكل :۴ date :

۲.۲ نام سیستم



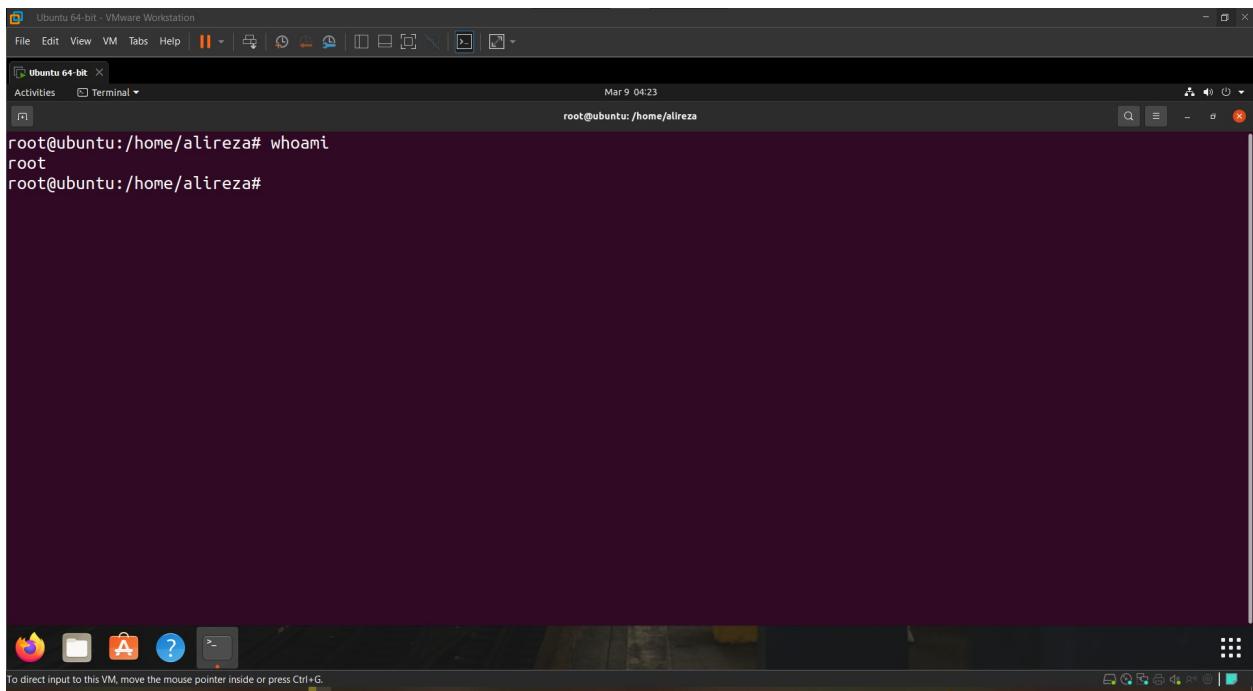
شکل ۵ *hostname*

۳.۲ نام سیستم عامل



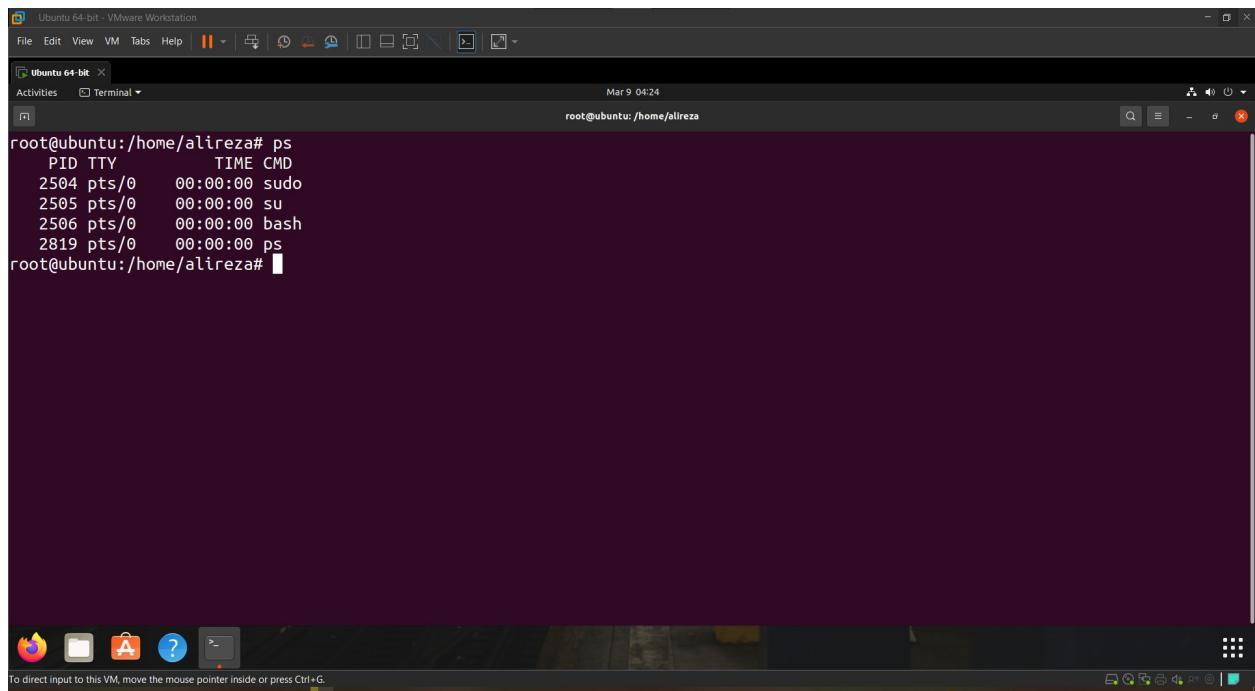
شکل ۶: *uname*

۴.۲ نام کاربر فعلی



شکل ۷ *whoami* :

۵.۲ پروسه های در حال اجرا



The screenshot shows a terminal window titled "Ubuntu 64-bit" running on a VMware Workstation interface. The terminal window has a dark purple background and displays the following command and its output:

```
root@ubuntu:/home/alireza# ps
 PID TTY      TIME CMD
 2504 pts/0    00:00:00 sudo
 2505 pts/0    00:00:00 su
 2506 pts/0    00:00:00 bash
 2819 pts/0    00:00:00 ps
root@ubuntu:/home/alireza#
```

The terminal window includes standard Linux navigation keys like arrow keys, home, end, and delete. The VMware interface at the bottom shows icons for file operations and a message: "To direct input to this VM, move the mouse pointer inside or press Ctrl+G."

شکل ۸ ps :

PID: Every process is assigned a PID (Process Identifier) which is a unique identifier that is associated with a running process in the system.

TTY: Controlling terminal associated with the process.

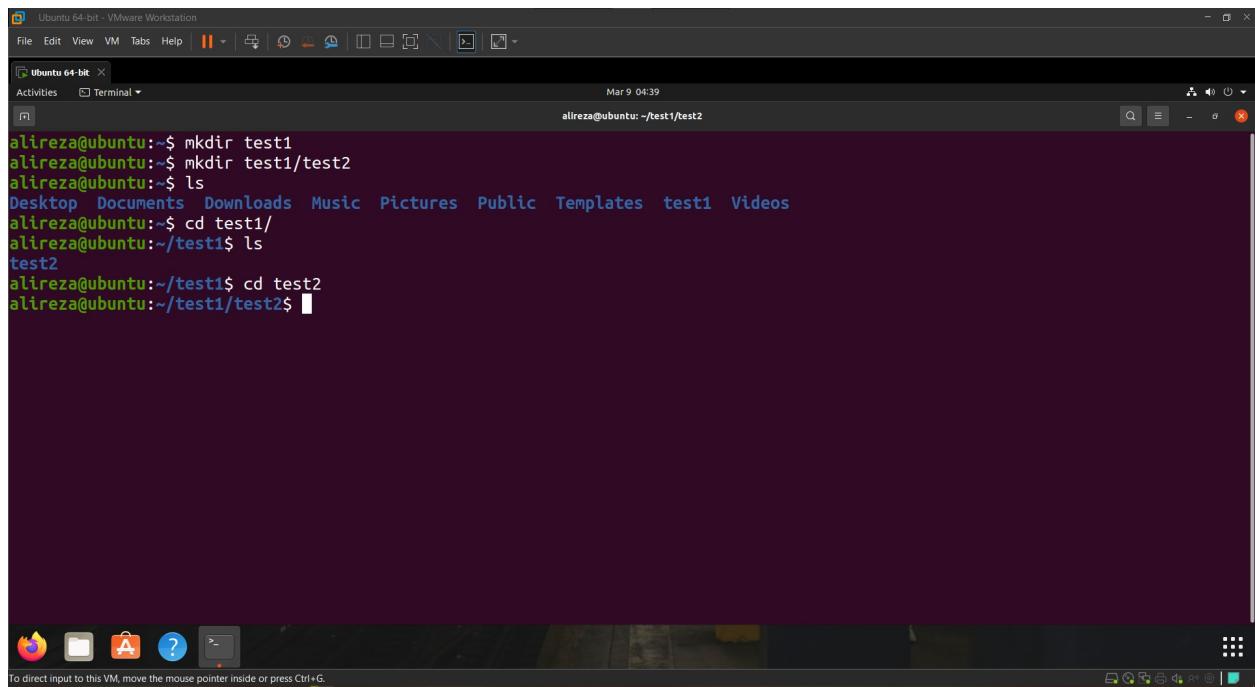
STAT: Process State Code

TIME: Total time of CPU Usage

CMD: The command that is executed by the process.

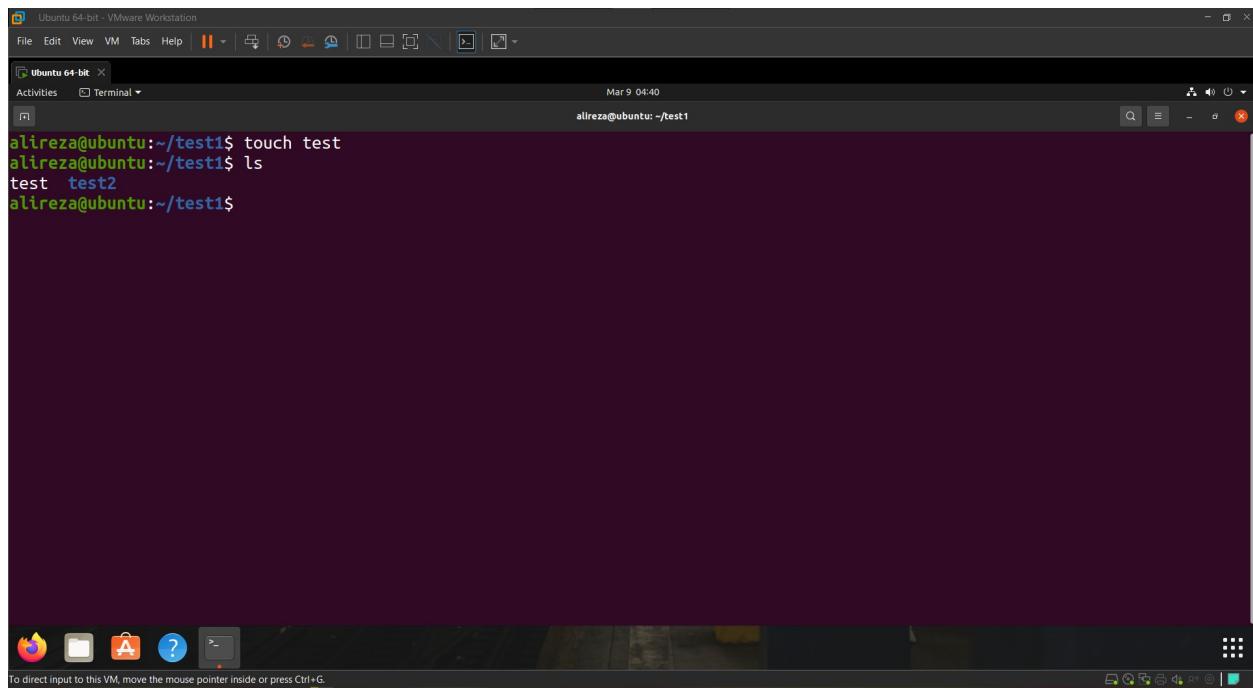
۳ کار با دایرکتوری ها

۱.۳



```
Ubuntu 64-bit - VMware Workstation
File Edit View VM Tabs Help Mar 9 04:39
Activities Terminal alireza@ubuntu: ~/test1/test2
alireza@ubuntu:~$ mkdir test1
alireza@ubuntu:~$ mkdir test1/test2
alireza@ubuntu:~$ ls
Desktop Documents Downloads Music Pictures Public Templates test1 Videos
alireza@ubuntu:~$ cd test1/
alireza@ubuntu:~/test1$ ls
test2
alireza@ubuntu:~/test1$ cd test2
alireza@ubuntu:~/test1/test2$
```

شکل ۹ a :



شکل ۱۰ : b

```
alireza@ubuntu:~/test1$ cp test test2/cp-test
alireza@ubuntu:~/test1$ cd test2/
alireza@ubuntu:~/test1/test2$ ls
cp-test
alireza@ubuntu:~/test1/test2$
```

شکل ۱۱

The screenshot shows a terminal window titled "Ubuntu 64-bit" running on an Ubuntu 64-bit system in VMware Workstation. The terminal session starts with the command "ls", which lists the files "cp-test" and "cp-test1". Then, the user runs "mv cp-test cp-test1", renaming the first file. Finally, "ls" is run again, showing only the renamed file "cp-test1". The terminal window has a dark background with light-colored text. The title bar includes standard window controls (minimize, maximize, close) and the application name. The bottom of the screen shows the Unity desktop interface with icons for various applications like a browser, file manager, and terminal.

```
alireza@ubuntu:~/test1/test2$ ls
cp-test
alireza@ubuntu:~/test1/test2$ mv cp-test cp-test1
alireza@ubuntu:~/test1/test2$ ls
cp-test1
alireza@ubuntu:~/test1/test2$
```

شکل ۱۲ : d

۵.۳

```
alireza@ubuntu:~/test1/test2$ cat > cp-test1
hello world
this is a test for netlab hw3
^C
alireza@ubuntu:~/test1/test2$ cat cp-test1
hello world
this is a test for netlab hw3
alireza@ubuntu:~/test1/test2$
```

شکل ۱۳

```

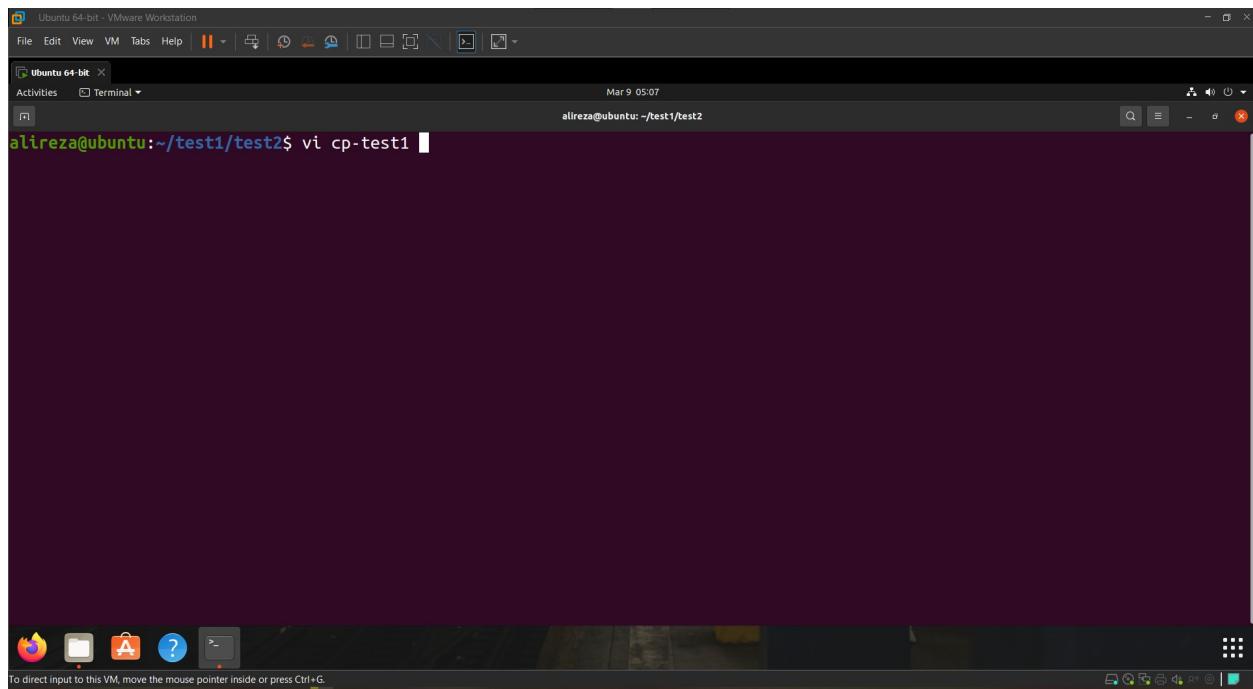
alireza@ubuntu:~/test1/test2$ find / -name test
find: '/sys/kernel/tracing': Permission denied
find: '/sys/kernel/debug': Permission denied
find: '/sys/fs/pstore': Permission denied
find: '/sys/fs/bpf': Permission denied
find: '/sys/fs/fuse/connections/49': Permission denied
find: '/root': Permission denied
find: '/snap/core18/2284/etc/ssl/private': Permission denied
find: '/snap/core18/2284/root': Permission denied
/snap/core18/2284/usr/bin/test
/snap/core18/2284/usr/lib/python3.6/test
find: '/snap/core18/2284/var/cache/ldconfig': Permission denied
find: '/snap/core18/2284/var/lib/private': Permission denied
find: '/snap/core18/2128/etc/ssl/private': Permission denied
find: '/snap/core18/2128/root': Permission denied
/snap/core18/2128/usr/bin/test
/snap/core18/2128/usr/lib/python3.6/test
find: '/snap/core18/2128/var/cache/ldconfig': Permission denied
find: '/snap/core18/2128/var/lib/private': Permission denied
/snap/gnome-3-34-1804/77/usr/lib/python2.7/test
/snap/gnome-3-34-1804/77/usr/lib/python3.6/test
/snap/gnome-3-34-1804/72/usr/lib/python2.7/test
/snap/gnome-3-34-1804/72/usr/lib/python3.6/test
find: '/snap/core20/1361/etc/ssl/private': Permission denied

```

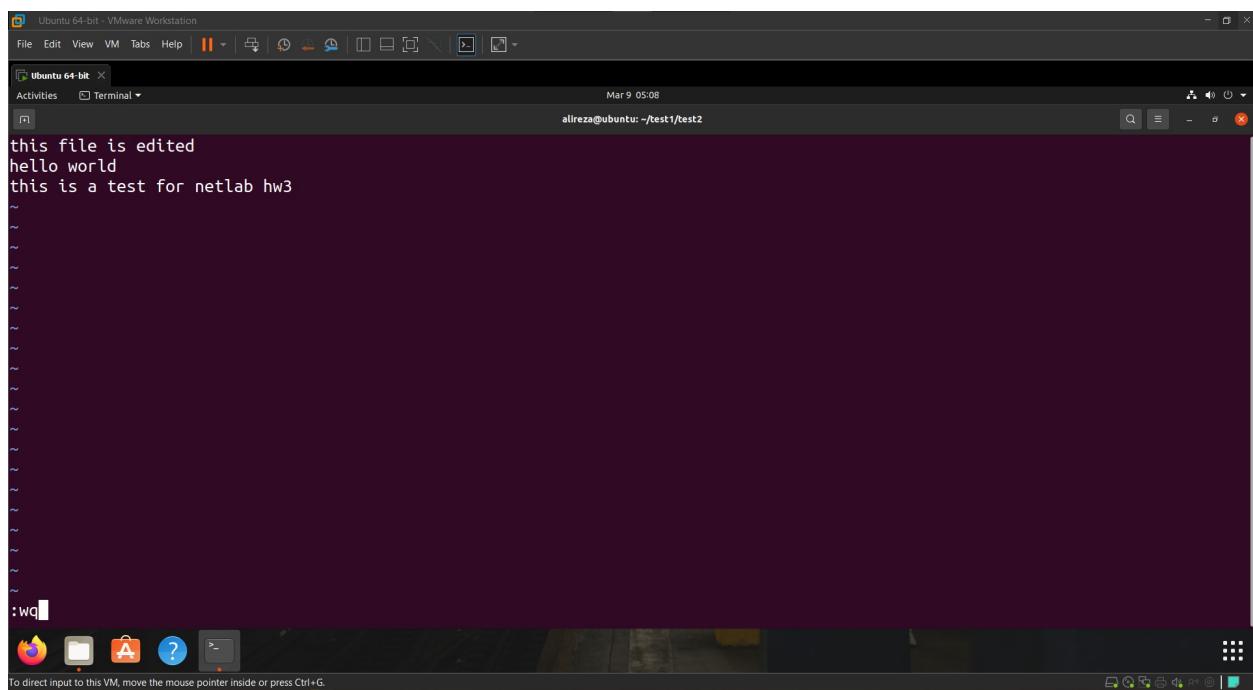
To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

شکل ۱۴

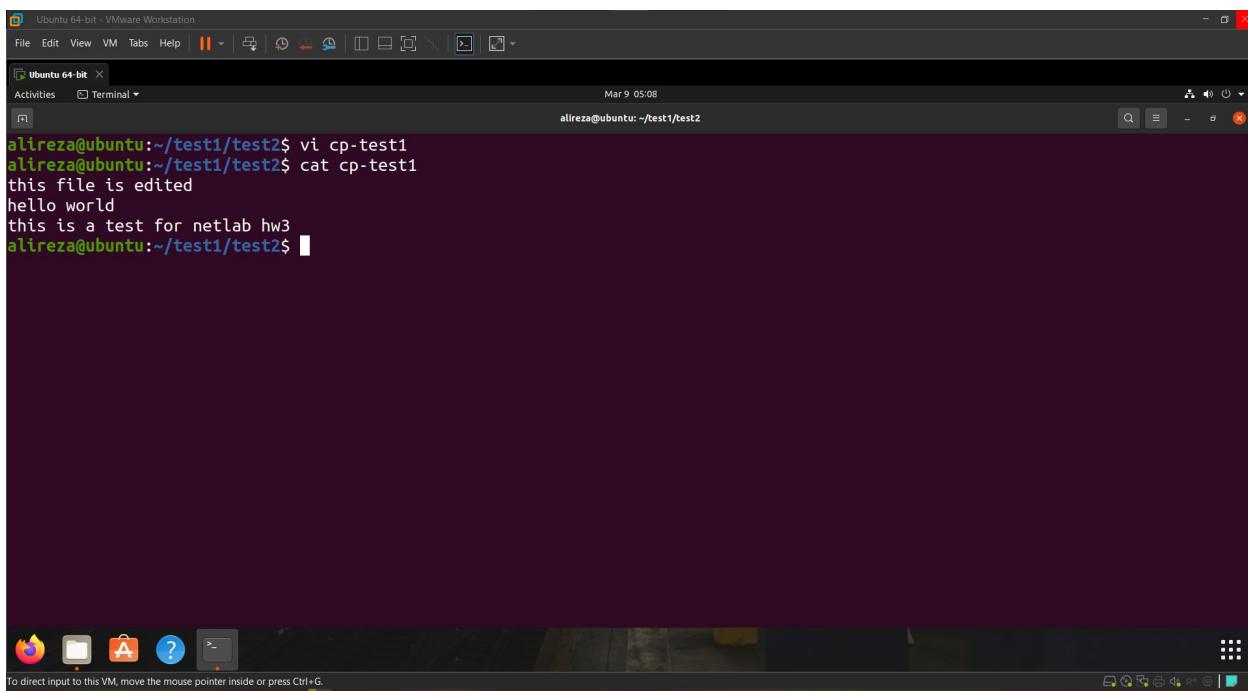
۴ کار با ویرایشگر vi



شکل ۱۵: بازکردن فایل برای ویرایش



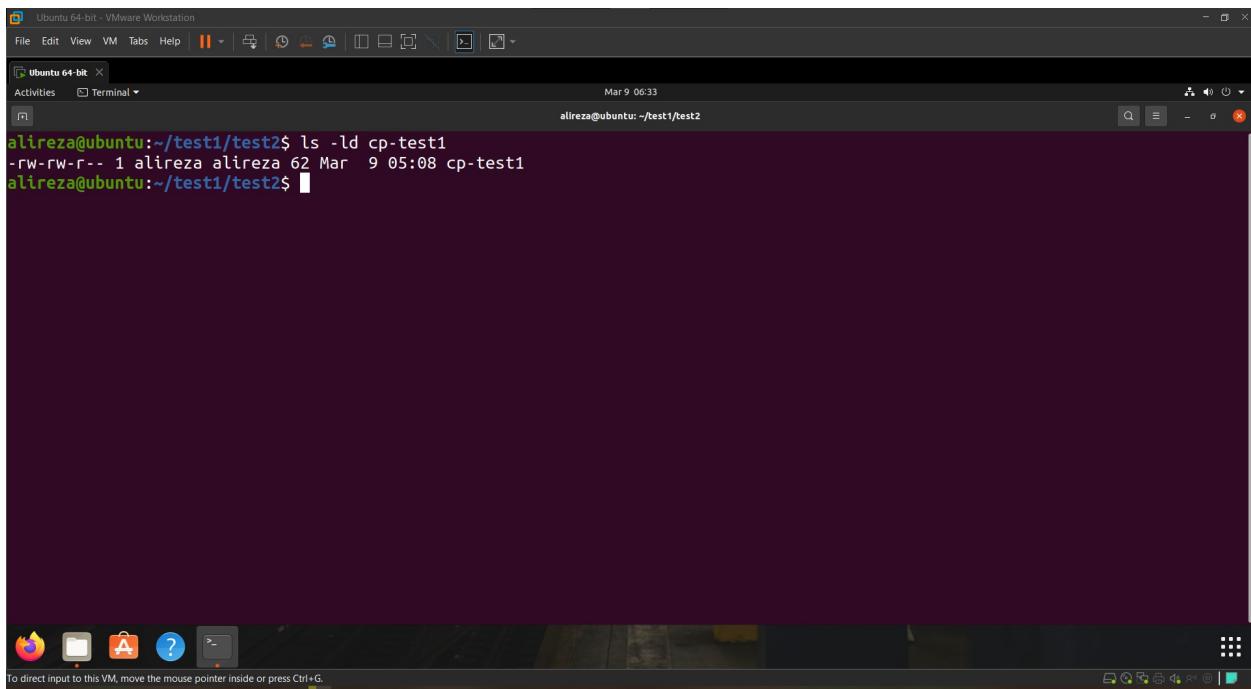
شکل ۱۶: ویرایش فایل



شکل ۱۷: خروجی فایل ویرایش شده

۵ تغییر نوع دسترسی به فایل

۱.۵



شکل ۱۸

```
alireza@ubuntu:~$ ls -ld test1
drwxrwxr-x 3 alireza alireza 4096 Mar  9 04:39 test1
alireza@ubuntu:~$ chmod -R 700 test1
alireza@ubuntu:~$ ls -ld test1
drwx----- 3 alireza alireza 4096 Mar  9 04:39 test1
alireza@ubuntu:~$
```

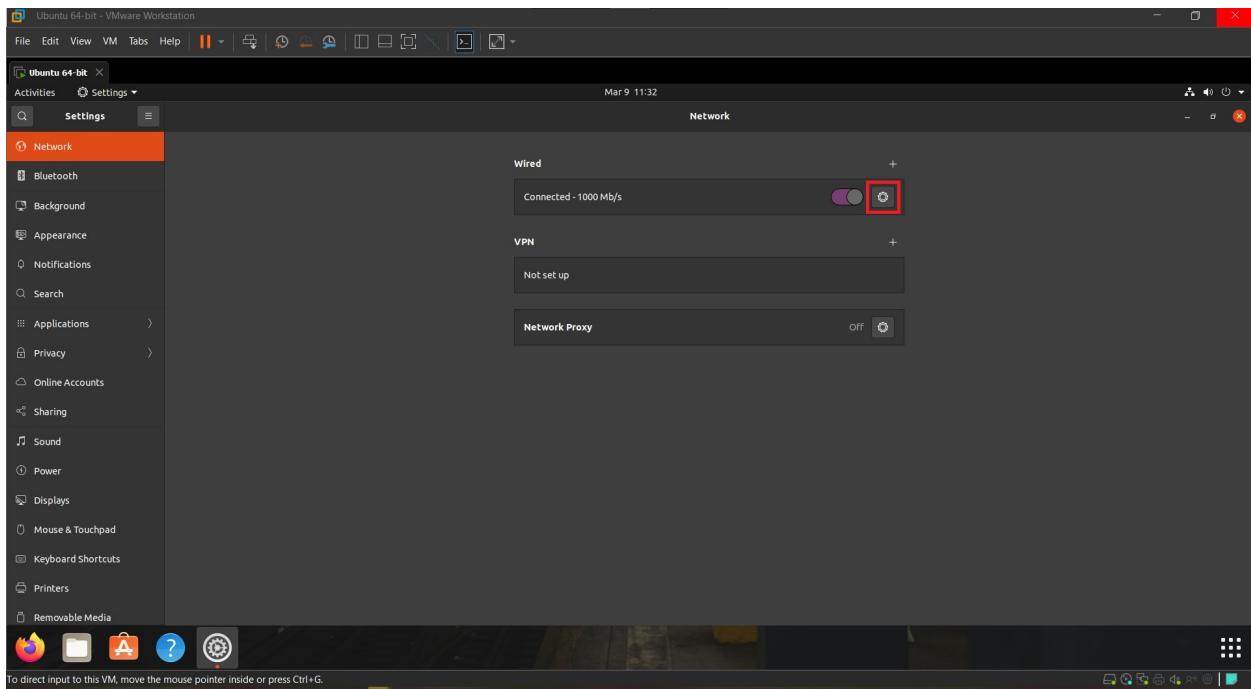
شکل ۱۹ b :

```

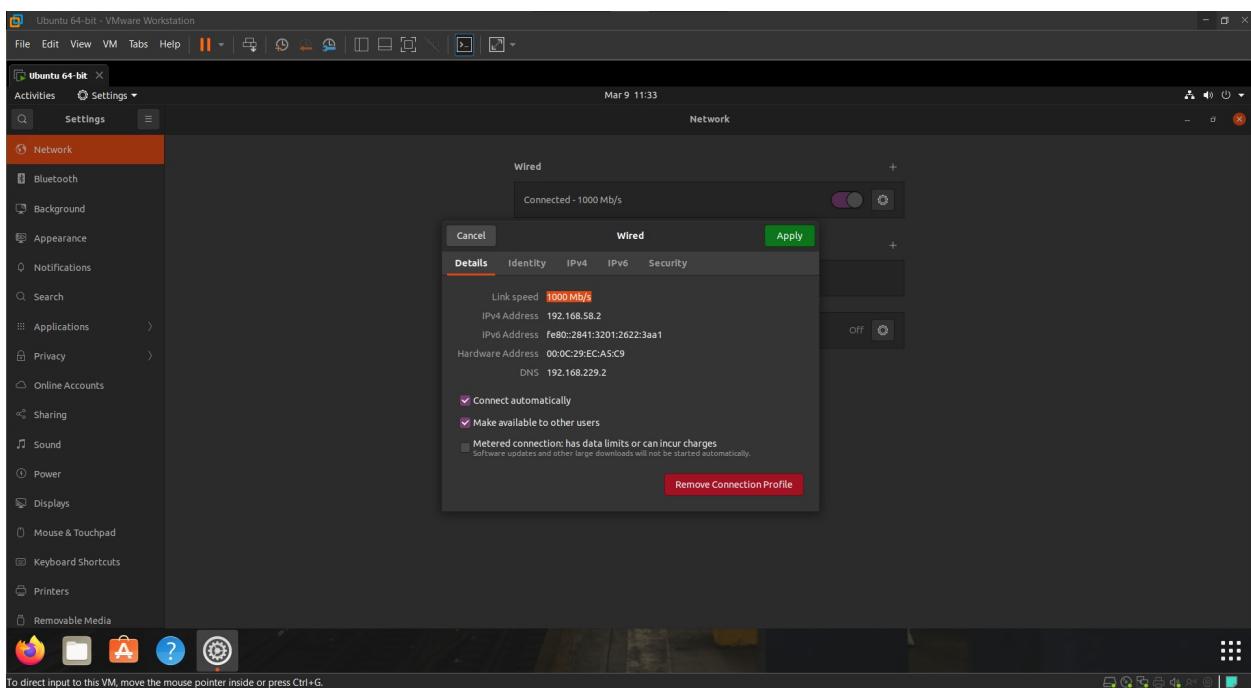
alireza@ubuntu:~/test1$ ls -ld test2
drwxrwxr-x 2 alireza alireza 4096 Mar  9 05:08 test2
alireza@ubuntu:~/test1$ cd test2/
alireza@ubuntu:~/test1/test2$ ls -ld cp-test1
-rwx----- 1 alireza alireza 62 Mar  9 05:08 cp-test1
alireza@ubuntu:~/test1/test2$
```

شکل : ۲۰

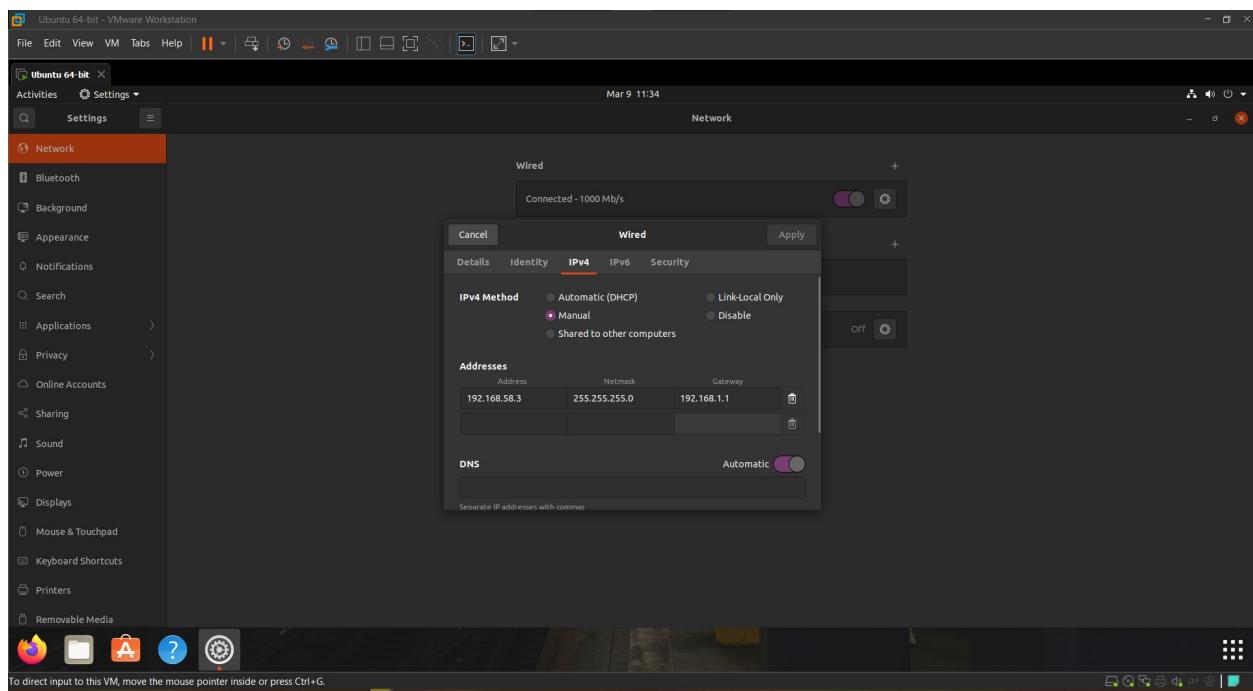
۶ کار با محیط گرافیکی



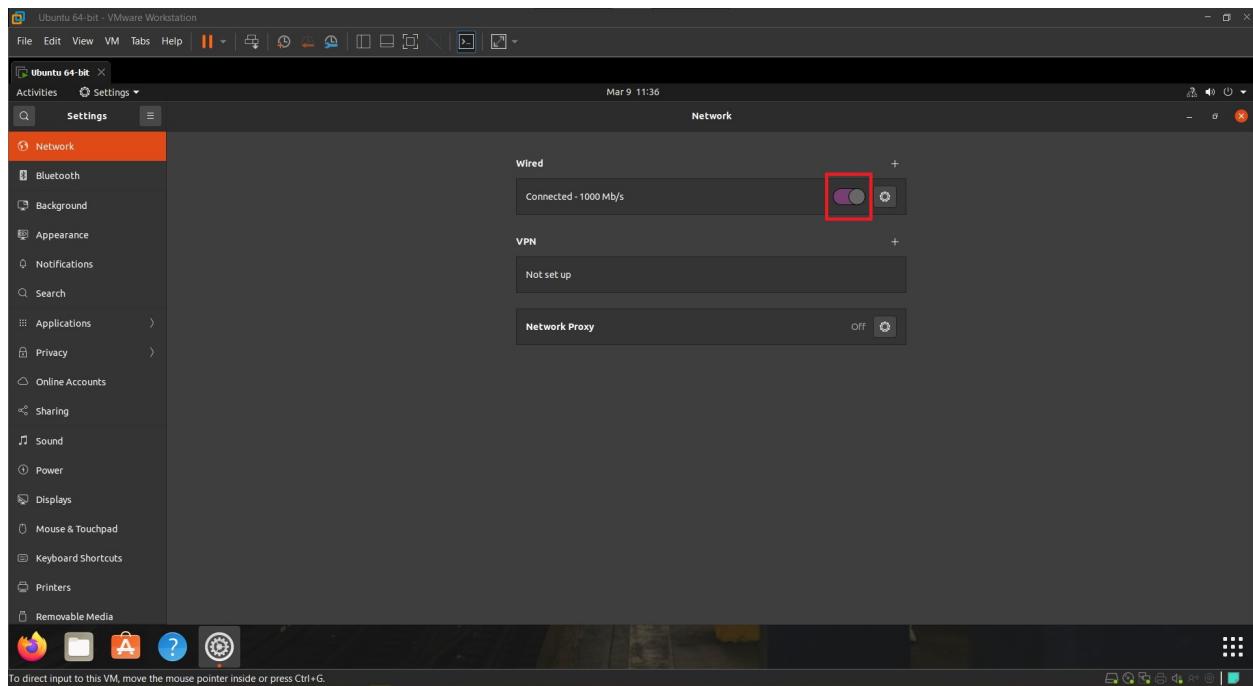
شکل ۲۱: ورود به تنظیمات شبکه



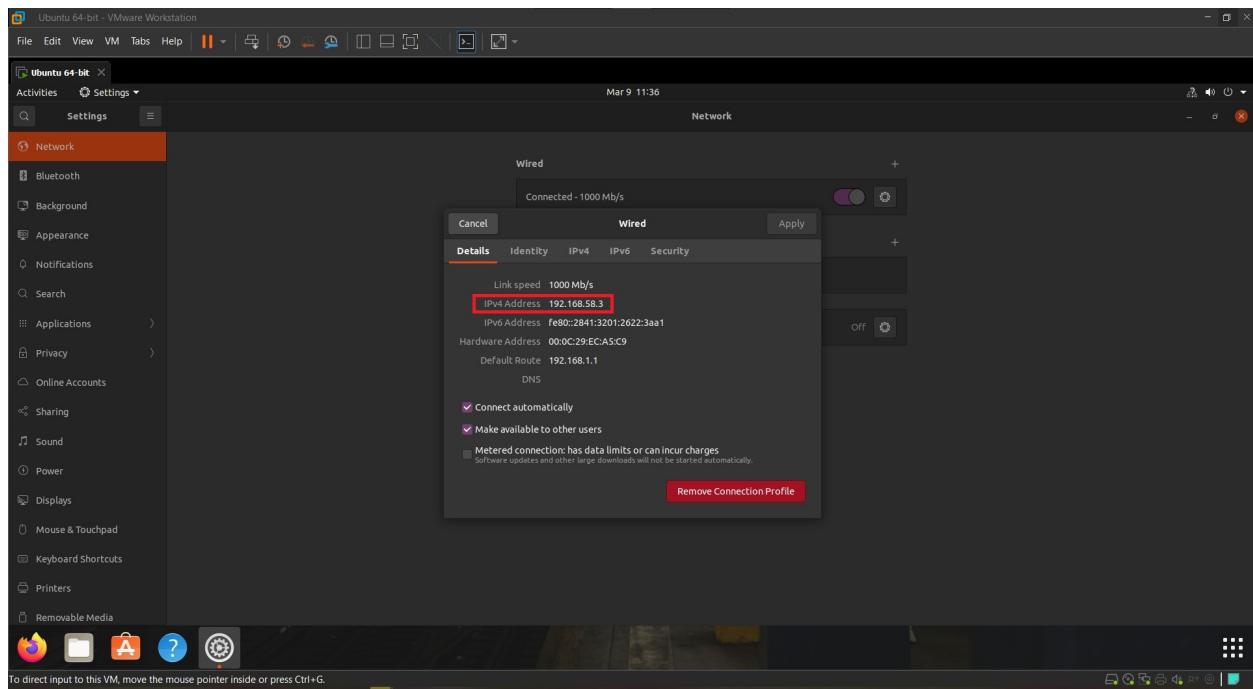
شکل ۲۲: آدرس آی‌پی فعلی



شکل ۲۳: تغییر دستی آدرس آی‌پی



شکل ۲۴: یک دور On/Off می‌کنیم.



شکل ۲۵: آدرس آی‌پی تغییر کرده است.

۷ تغییر آدرس آی‌پی از طریق خط فرمان

```

root@ubuntu:/# ifconfig
ens3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 192.168.229.128 netmask 255.255.255.0 broadcast 192.168.229.255
        inet6 fe80::2841:3201:2622:3aa1 prefixlen 64 scopeid 0x20<link>
          ether 00:0c:29:e0:a5:c9 txqueuelen 1000 (Ethernet)
            RX packets 381 bytes 273646 (273.6 KB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 312 bytes 35100 (35.1 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 200 bytes 16775 (16.7 KB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 200 bytes 16775 (16.7 KB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

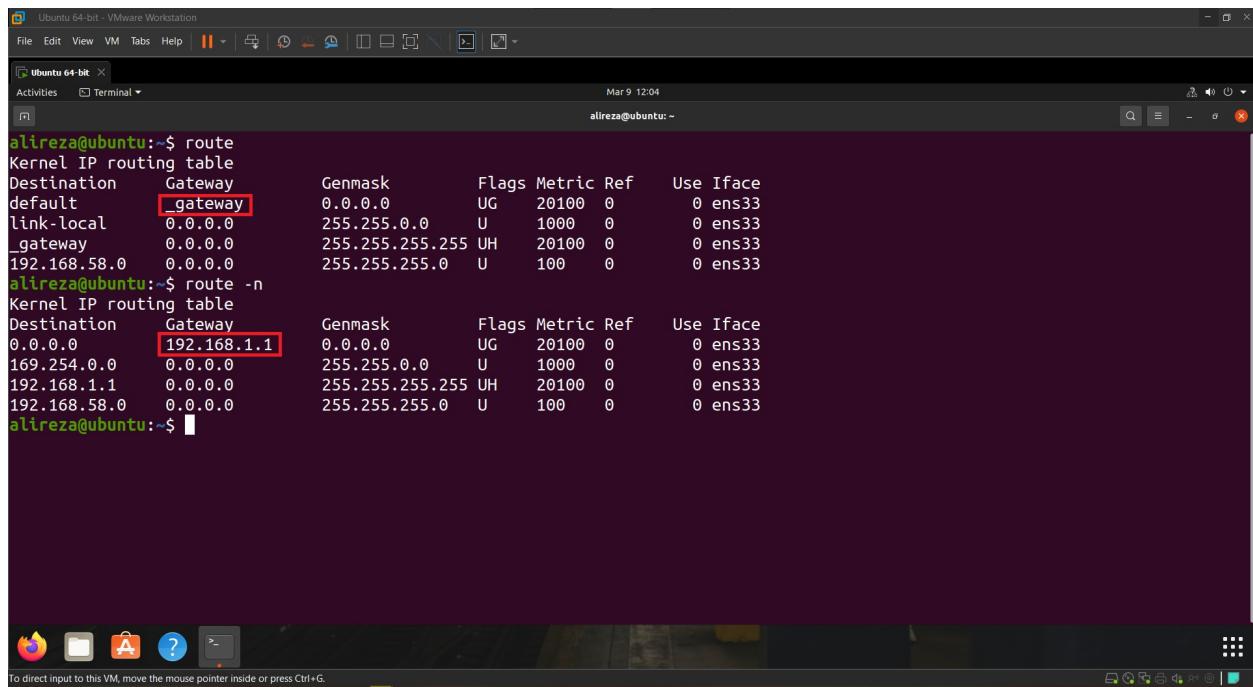
root@ubuntu:/# ifconfig ens3 192.168.58.2
root@ubuntu:/# ifconfig
ens3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 192.168.58.2 netmask 255.255.255.0 broadcast 192.168.58.255
        inet6 fe80::2841:3201:2622:3aa1 prefixlen 64 scopeid 0x20<link>
          ether 00:0c:29:e0:a5:c9 txqueuelen 1000 (Ethernet)
            RX packets 389 bytes 275116 (275.1 KB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 322 bytes 36690 (36.6 KB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

شکل ۲۶: تغییر آی‌پی به 192.168.58.2

۸ کار با دستور route

۱.۸



```

Ubuntu 64-bit - VMware Workstation
File Edit View VM Tabs Help Mar 9 12:04
Activities Terminal alireza@ubuntu: ~

alireza@ubuntu:~$ route
Kernel IP routing table
Destination     Gateway         Genmask        Flags Metric Ref Use Iface
default         _gateway       0.0.0.0        UG    20100   0   0 ens33
link-local      0.0.0.0        255.255.0.0   U     1000    0   0 ens33
_gateway        0.0.0.0        255.255.255.255 UH   20100   0   0 ens33
192.168.58.0   0.0.0.0        255.255.255.0   U     100    0   0 ens33
alireza@ubuntu:~$ route -n
Kernel IP routing table
Destination     Gateway         Genmask        Flags Metric Ref Use Iface
0.0.0.0         192.168.1.1   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
192.168.1.1    0.0.0.0        255.255.255.255 UH   20100   0   0 ens33
192.168.58.0   0.0.0.0        255.255.255.0   U     100    0   0 ens33
alireza@ubuntu:~$ 

```

Default Gateway :۲۷

Ubuntu 64-bit - VMware Workstation

File Edit View VM Tabs Help || | | | | | | | | | |

Ubuntu 64-bit Activities Terminal Mar 9 12:48 root@ubuntu:/home/alireza

```
root@ubuntu:/home/alireza# route
Kernel IP routing table
Destination     Gateway         Genmask        Flags Metric Ref  Use Iface
default         _gateway       0.0.0.0        UG    20100   0      0 ens33
link-local      0.0.0.0        255.255.0.0   U     1000    0      0 ens33
_gateway        0.0.0.0        255.255.255.255 UH   20100   0      0 ens33
192.168.58.0   0.0.0.0        255.255.255.0   U     100    0      0 ens33
root@ubuntu:/home/alireza# route -n
Kernel IP routing table
Destination     Gateway         Genmask        Flags Metric Ref  Use Iface
0.0.0.0         192.168.1.1   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
192.168.1.1    0.0.0.0        255.255.255.255 UH   20100   0      0 ens33
192.168.58.0   0.0.0.0        255.255.255.0   U     100    0      0 ens33
root@ubuntu:/home/alireza# route add default gw 192.168.58.10
root@ubuntu:/home/alireza# route -n
Kernel IP routing table
Destination     Gateway         Genmask        Flags Metric Ref  Use Iface
default         _gateway       0.0.0.0        UG    0      0      0 ens33
default         _gateway       0.0.0.0        UG    20100   0      0 ens33
link-local      0.0.0.0        255.255.0.0   U     1000    0      0 ens33
_gateway        0.0.0.0        255.255.255.255 UH   20100   0      0 ens33
192.168.58.0   0.0.0.0        255.255.255.0   U     100    0      0 ens33
root@ubuntu:/home/alireza# route -n
Kernel IP routing table
Destination     Gateway         Genmask        Flags Metric Ref  Use Iface
0.0.0.0         192.168.58.10  0.0.0.0        UG    0      0      0 ens33
0.0.0.0         192.168.1.1   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
```

شكل ٢٨: تغيير Default Gateway

۳.۸

شکل ۲۹: اطلاعات مسیریابی کش شده در سیستم

۴.۸

اگر سیستم B را در سیستم A ریجکت کنیم، پینگ از دو طرف مسدود می‌شود. چون پینگ یک ارتباط دو طرفه است.

منابع