



گزارش آزمایش سوم

مریم سعیدمهر
شماره دانشجویی: ۹۶۲۹۳۷۳

فهرست مطالب

۲	۱ آشنایی با مفهوم حساب کاربری
۳	۲ کار با دایرکتوری‌ها
۶	۳ کار با ویرایشگر vi
۷	۴ تغییر نوع دسترسی به فایل
۸	۵ کار با محیط گرافیکی
۱۱	۶ تنظیمات شبکه سیستم با پسته فرمان
۱۲	۷ کار با دستور route

۱ آشنایی با مفهوم حساب کاربری

```
root@NetLab: /home/maryam
File Edit View Search Terminal Help
> sudo su
[sudo] password for maryam:
root@NetLab:/home/maryam# adduser netlab3
Adding user `netlab3' ...
Adding new group `netlab3' (1001) ...
Adding new user `netlab3' (1001) with group `netlab3' ...
Creating home directory `/home/netlab3' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for netlab3
Enter the new value, or press ENTER for the default
    Full Name []: Maryam Saeedmehr
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []: 9629373
Is the information correct? [Y/n] y
root@NetLab:/home/maryam# ls /home/
maryam netlab3
root@NetLab:/home/maryam# |
```

شکل ۱: ایجاد حساب کاربری

```
root@NetLab: /home/maryam
File Edit View Search Terminal Help
> sudo su
[sudo] password for maryam:
root@NetLab:/home/maryam# date
Sat Apr 10 16:02:04 +0430 2021
root@NetLab:/home/maryam# uname
Linux
root@NetLab:/home/maryam# hostname
NetLab
root@NetLab:/home/maryam# whoami
root
root@NetLab:/home/maryam# ps
    PID TTY          TIME CMD
 31793 pts/0        00:00:00 sudo
 31794 pts/0        00:00:00 su
 31807 pts/0        00:00:00 bash
 31995 pts/0        00:00:00 ps
root@NetLab:/home/maryam# |
```

شکل ۲: استخراج تاریخ و نام سیستم و نام سیستم عامل و نام کاربر و پروسه های در حال اجرا

۲ کار با دایرکتوری ها

A terminal window titled 'maryam@NetLab:~/test1' showing the following commands and output:

```
maryam@NetLab:~/test1
> mkdir test1
> ls
Desktop  Downloads  Lab3  Pictures  snap  test1
Documents examples.desktop Music  Public  Templates Videos
> cd test1
> ls
It is empty now !
> mkdir test2
> ls
test2
```

Annotations: Red boxes highlight 'mkdir test1', 'ls', 'cd test1', 'ls', 'mkdir test2', and 'ls'. A red arrow points to 'test1' in the directory listing. A blue arrow points to the 'It is empty now !' message. A green arrow points to 'test2' in the final 'ls' output.

شکل ۳: ایجاد دایرکتوری *test1* و دایرکتوری *test2* در آن

A terminal window titled 'maryam@NetLab:~/test1' showing the following commands and output:

```
maryam@NetLab:~/test1
> ls
test2
> cat > test
Hi my name is Maryam Saeedmehr
My student number is : 9629373
> ls
test  test2
> cat test
Hi my name is Maryam Saeedmehr
My student number is : 9629373
```

Annotations: Red boxes highlight 'ls', 'cat > test', 'ls', and 'cat test'. A green arrow points to 'test' in the 'ls' output. A green arrow points to the output of 'cat test'.

شکل ۴: ایجاد فایل *test* در دایرکتوری *test1*

```
maryam@NetLab:~/test1
File Edit View Search Terminal Help
[ ] ~/test1 16:20:16
> ls test2
It is Empty
[ ] ~/test1 16:45:36
> cp test test2/cp-test
[ ] ~/test1 16:46:08
> ls test2
cp-test
[ ] ~/test1 16:46:14
> cat test2/cp-test
Hi my name is Maryam Saeedmehr
My student number is : 9629373
[ ] ~/test1 16:48:54
> |
```

شکل ۵: ایجاد یک کپی از روی فایل test در دایرکتوری test2 به اسم cp-test

```
maryam@NetLab:~/test1/test2
File Edit View Search Terminal Help
[ ] ~/test1/test2 16:51:51
> ls
cp-test
[ ] ~/test1/test2 16:51:54
> mv cp-test cp-test1
[ ] ~/test1/test2 16:52:01
> ls
cp-test1
[ ] ~/test1/test2 16:52:03
> cat cp-test1
Hi my name is Maryam Saeedmehr
My student number is : 9629373
[ ] ~/test1/test2 16:52:09
> |
```

شکل ۶: تغییر نام cp-test به cp-test1

```
maryam@NetLab:~/test1/test2
File Edit View Search Terminal Help
[?] ~/test1/test2 19:34:22
> ls
cp-test1

[?] ~/test1/test2 19:34:24
> cat cp-test1
Hi my name is Maryam Saeedmehr
My student number is : 9629373

[?] ~/test1/test2 19:34:36
> cat > cp-test1
File Content Has Changed :)

[?] ~/test1/test2 16s 19:35:26
> cat cp-test1
File Content Has Changed :)

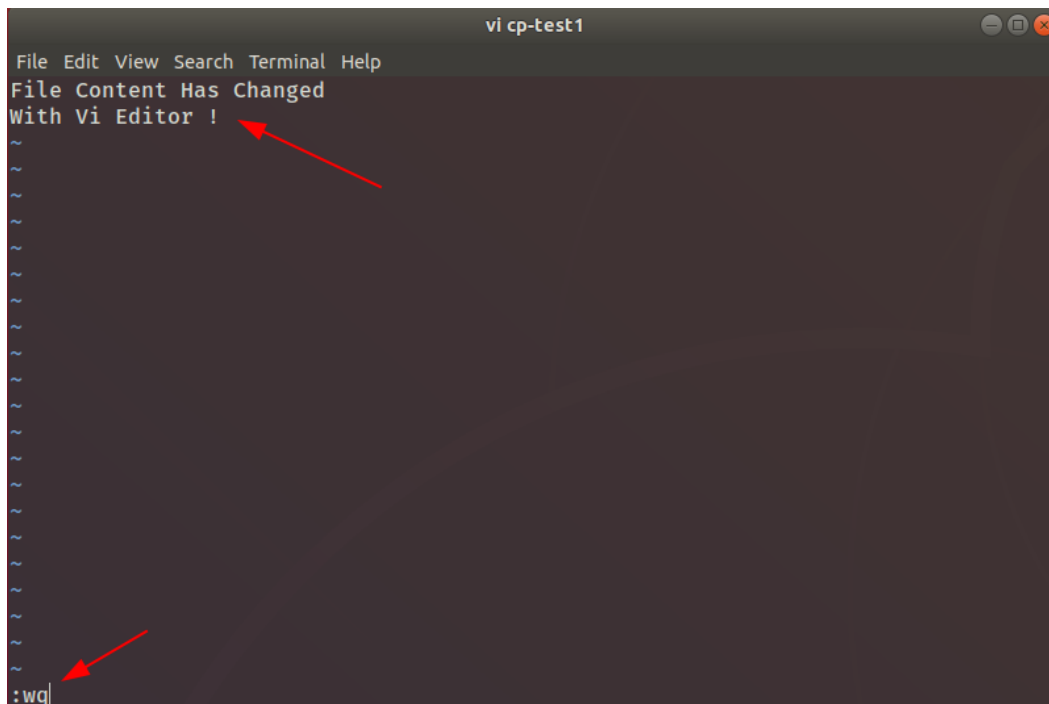
[?] ~/test1/test2 19:35:33
> |
```

شکل ۷: تغییر محتوای `cp - test1` با دستور `cat`

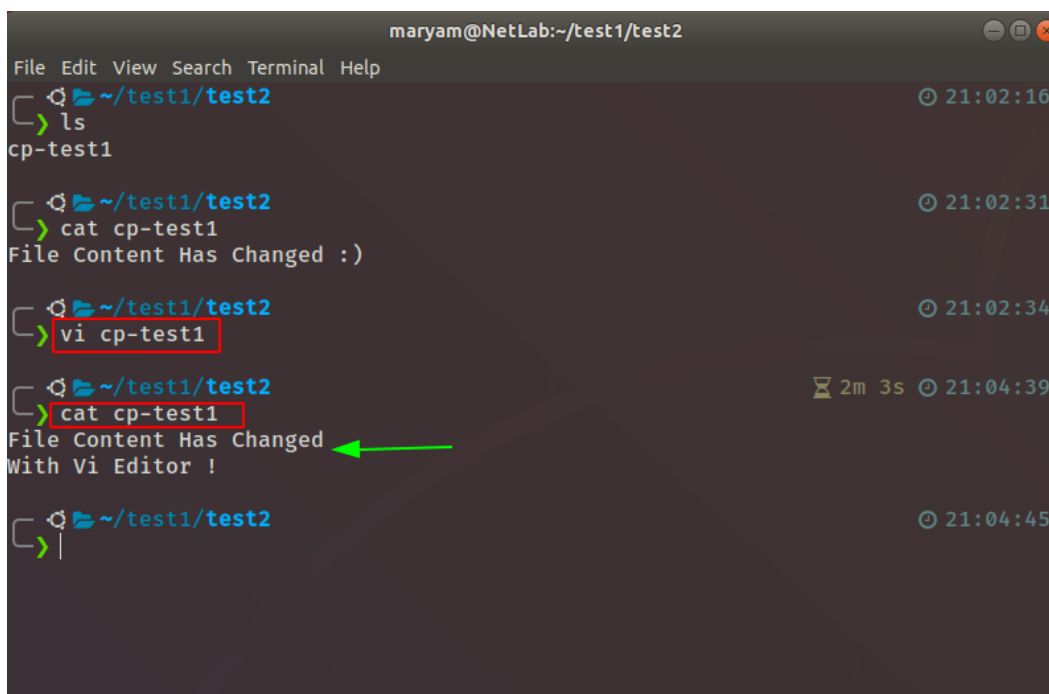
```
maryam@NetLab:~/test1/test2
File Edit View Search Terminal Help
[?] ~/test1/test2 19:42:42
> sudo find / -name test
/usr/share/zsh/help/test
/usr/share/alsa/init/test
/usr/src/linux-headers-4.15.0-140/tools/testing/nvdimmm/test
/usr/src/linux-headers-4.15.0-140/lib/raid6/test
/usr/src/linux-headers-4.15.0-140/drivers/base/test
/usr/src/linux-headers-4.15.0-140/drivers/firmware/efi/test
/usr/src/linux-headers-4.15.0-140/drivers/ntb/test
/usr/src/linux-headers-5.4.0-66-generic/include/config/pkcs7/test
/usr/src/linux-headers-5.4.0-66-generic/include/config/v4l/test
/usr/src/linux-headers-5.4.0-66-generic/include/config/usb/ehset/test
/usr/src/linux-headers-5.4.0-66-generic/include/config/test
/usr/src/linux-headers-5.4.0-70-generic/include/config/pkcs7/test
/usr/src/linux-headers-5.4.0-70-generic/include/config/v4l/test
/usr/src/linux-headers-5.4.0-70-generic/include/config/usb/ehset/test
/usr/src/linux-headers-5.4.0-70-generic/include/config/test
/usr/src/linux-hwe-5.4-headers-5.4.0-66/tools/testing/nvdimmm/test
/usr/src/linux-hwe-5.4-headers-5.4.0-66/lib/raid6/test
/usr/src/linux-hwe-5.4-headers-5.4.0-66/drivers/base/test
/usr/src/linux-hwe-5.4-headers-5.4.0-66/drivers/firmware/efi/test
/usr/src/linux-hwe-5.4-headers-5.4.0-66/drivers/ntb/test
/usr/src/linux-hwe-5.4-headers-5.4.0-70/tools/testing/nvdimmm/test
/usr/src/linux-hwe-5.4-headers-5.4.0-70/lib/raid6/test
/usr/src/linux-hwe-5.4-headers-5.4.0-70/drivers/base/test
/usr/src/linux-hwe-5.4-headers-5.4.0-70/drivers/firmware/efi/test
/usr/src/linux-hwe-5.4-headers-5.4.0-70/drivers/ntb/test
/usr/src/linux-headers-4.15.0-140-generic/include/config/pkcs7/test
/usr/src/linux-headers-4.15.0-140-generic/include/config/v4l/test
/usr/src/linux-headers-4.15.0-140-generic/include/config/usb/ehset/test
/usr/src/linux-headers-4.15.0-140-generic/include/config/test
/usr/lib/python2.7/test
/usr/lib/python3.6/test
/usr/lib/python3/dist-packages/systemd/test
/usr/bin/test
/home/maryam/test1/test
/snap/gnome-3-34-1804/66/usr/lib/python2.7/test
/snap/gnome-3-34-1804/66/usr/lib/python3.6/test
/snap/core/10958/usr/bin/test
/snap/core/10958/usr/lib/python3.5/test
/snap/core/10859/usr/bin/test
/snap/core/10859/usr/lib/python3.5/test
/snap/gnome-3-26-1604/74/usr/lib/python3.5/test
/snap/gnome-3-26-1604/100/usr/lib/python3.5/test
/snap/core18/1997/usr/bin/test
/snap/core18/1997/usr/lib/python3.6/test
/snap/core18/1988/usr/bin/test
/snap/core18/1988/usr/lib/python3.6/test
```

شکل ۸: یافتن مسیر فایل `test`

۳ کار با ویرایشگر vi



شکل ۹: تغییر محتوای $cp - test1$ با ویرایشگر vi



شکل ۱۰: بررسی فایل ویرایش شده.

۴ تغییر نوع دسترسی به فایل

```
maryam@NetLab:~/test1/test2
File Edit View Search Terminal Help
> ls -l
total 4
-rw-r--r-- 1 maryam maryam 43 Apr 10 21:04 cp-test1
>
```

شکل ۱۱: مشاهده مجوز دسترسی فایل `cp-test1`

```
maryam@NetLab:~/test1
File Edit View Search Terminal Help
> ls -l
total 4
-rw-r--r-- 1 maryam maryam 43 Apr 10 21:04 cp-test1
> cd ../../
> chmod -R 700 test1
> ls -l
total 56
drwxr-xr-x 2 maryam maryam 4096 Apr 10 14:07 Desktop
drwxr-xr-x 2 maryam maryam 4096 Mar 8 16:20 Documents
drwxr-xr-x 2 maryam maryam 4096 Apr 10 13:25 Downloads
-rw-r--r-- 1 maryam maryam 8980 Mar 8 15:26 examples.desktop
drwxr-xr-x 2 maryam maryam 4096 Apr 10 14:07 Lab3
drwxr-xr-x 2 maryam maryam 4096 Mar 8 16:20 Music
drwxr-xr-x 2 maryam maryam 4096 Apr 10 21:07 Pictures
drwxr-xr-x 2 maryam maryam 4096 Mar 8 16:20 Public
drwxr-xr-x 5 maryam maryam 4096 Apr 10 13:22 snap
drwxr-xr-x 2 maryam maryam 4096 Mar 8 16:20 Templates
drwx----- 3 maryam maryam 4096 Apr 10 16:19 test1
drwxr-xr-x 2 maryam maryam 4096 Mar 8 16:20 Videos
> cd test1
> ls -l
total 8
-rwx----- 1 maryam maryam 62 Apr 10 16:19 test
drwx----- 2 maryam maryam 4096 Apr 10 21:04 test2
> ls -l test2
total 4
-rwx----- 1 maryam maryam 43 Apr 10 21:04 cp-test1
>
```

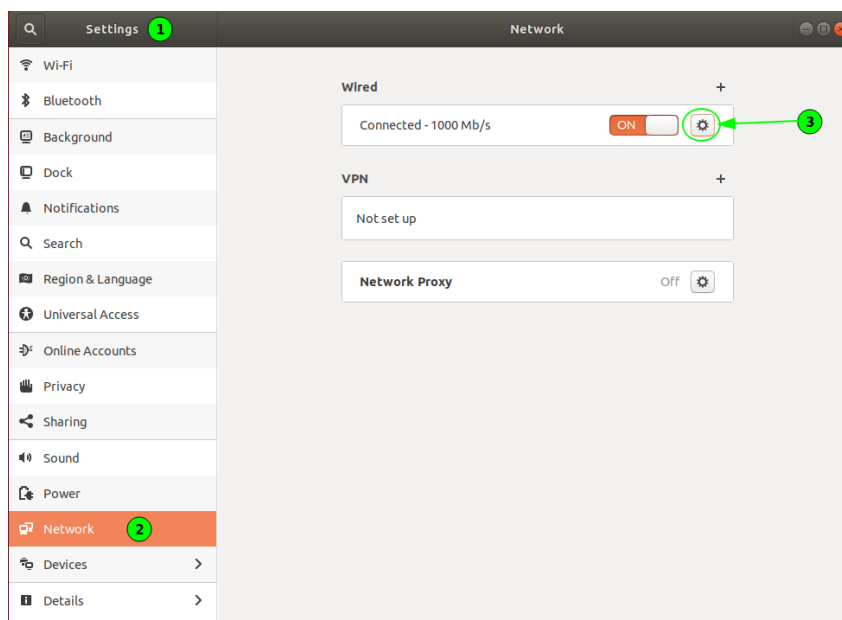
شکل ۱۲: تغییر دسترسی کل دایرکتوری `test1` و دسترسی کامل فقط و فقط به مالک و مشاهده تغییرات

۵ کار با محیط گرافیکی

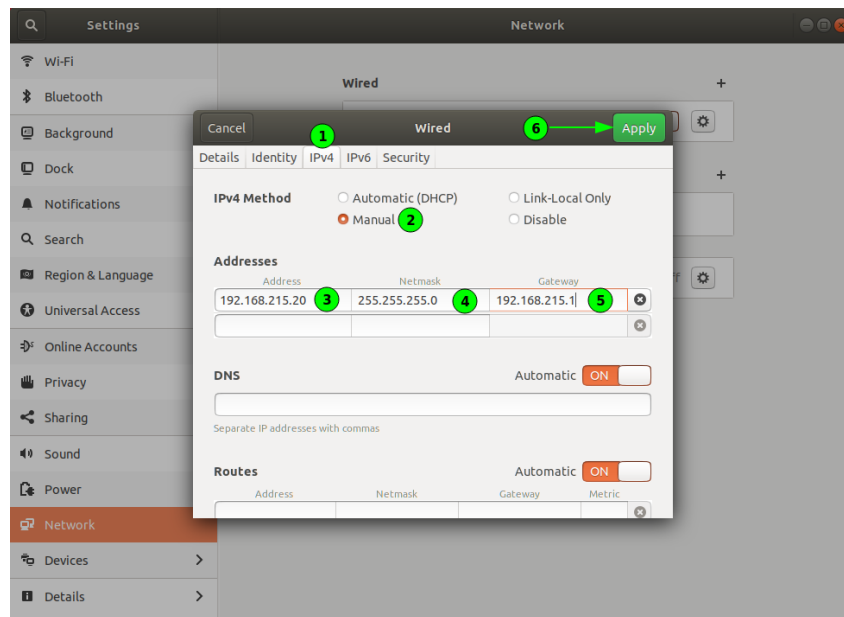
```
maryam@NetLab:~
File Edit View Search Terminal Help
~
> ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.215.135 netmask 255.255.255.0 broadcast 192.168.215.255
    inet6 fe80::c134:e267:a900:222 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:04:3e:9e txqueuelen 1000 (Ethernet)
    RX packets 185779 bytes 246871761 (246.8 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 92843 bytes 6693206 (6.6 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
    device interrupt 18 memory 0xfd4a0000-fd4c0000

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 3373 bytes 352010 (352.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 3373 bytes 352010 (352.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

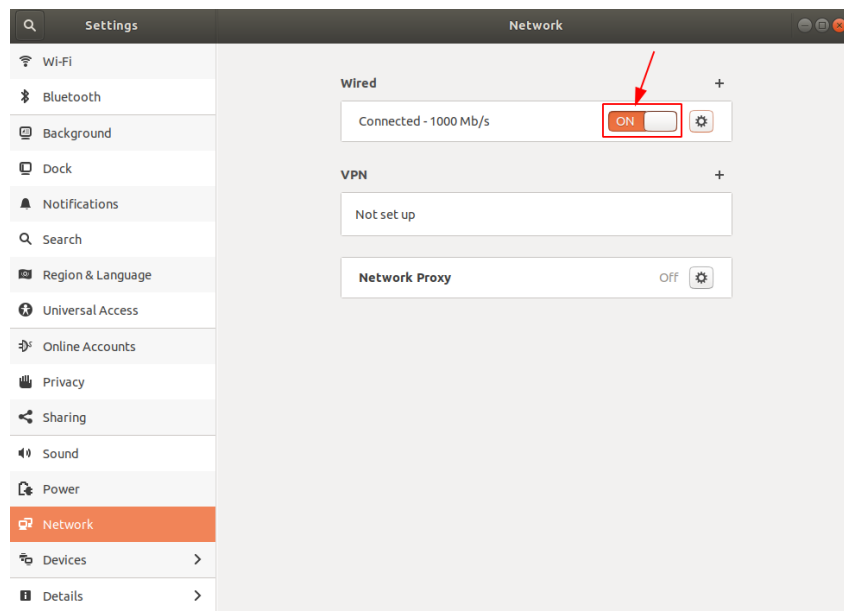
شکل ۱۳: خروجی دستور ifconfig



شکل ۱۴: تنظیمات شبکه با محیط گرافیکی



شکل ۱۵: تنظیمات شبکه با محیط گرافیکی



شکل ۱۶: خاموش روشن کردن شبکه به منظور اعمال تغییرات

```
maryam@NetLab:~  
File Edit View Search Terminal Help  
~  
> ifconfig  
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.215.135 netmask 255.255.255.0 broadcast 192.168.215.255  
    inet6 fe80::c134:e267:a900:222 prefixlen 64 scopeid 0x20<link>  
    ether 00:0c:29:04:3e:9e txqueuelen 1000 (Ethernet)  
    RX packets 185787 bytes 246873094 (246.8 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 92853 bytes 6694202 (6.6 MB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
    device interrupt 18 memory 0xfd4a0000-fd4c0000  
  
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 3377 bytes 352402 (352.4 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 3377 bytes 352402 (352.4 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
~  
> ifconfig  
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.215.20 netmask 255.255.255.0 broadcast 192.168.215.255  
    inet6 fe80::c134:e267:a900:222 prefixlen 64 scopeid 0x20<link>  
    ether 00:0c:29:04:3e:9e txqueuelen 1000 (Ethernet)  
    RX packets 185790 bytes 246873776 (246.8 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 92882 bytes 6698406 (6.6 MB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
    device interrupt 18 memory 0xfd4a0000-fd4c0000  
  
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 3393 bytes 353450 (353.4 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 3393 bytes 353450 (353.4 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
~
```

شکل ۱۷: بررسی انجام شدن یا نشدن تغییرات

```

maryam@NetLab:~
File Edit View Search Terminal Help
~
> ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.215.135 netmask 255.255.255.0 broadcast 192.168.215.255
    inet6 fe80::c134:e267:a900:222 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:04:3e:9e txqueuelen 1000 (Ethernet)
    RX packets 185820 bytes 246879134 (246.8 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 92991 bytes 6715049 (6.7 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
    device interrupt 18 memory 0xfd4a0000-fd4c0000

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 3429 bytes 355938 (355.9 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 3429 bytes 355938 (355.9 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

~
> sudo ifconfig ens160 192.168.58.2
~
> ifconfig
ens160: 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::c134:e267:a900:222 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:04:3e:9e txqueuelen 1000 (Ethernet)
    RX packets 185825 bytes 246880306 (246.8 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 93012 bytes 6718798 (6.7 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
    device interrupt 18 memory 0xfd4a0000-fd4c0000

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 3429 bytes 355938 (355.9 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 3429 bytes 355938 (355.9 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

~
>

```

شکل ۱۸: تنظیمات شبکه با ترمینال

۷ کار با دستور route

```
maryam@NetLab:~
File Edit View Search Terminal Help
> route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default _gateway 0.0.0.0 UG 20100 0 0 ens160
link-local 0.0.0.0 255.255.0.0 U 1000 0 0 ens160
192.168.215.0 0.0.0.0 255.255.255.0 U 100 0 0 ens160

> route -n
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 192.168.215.2 0.0.0.0 UG 20100 0 0 ens160
169.254.0.0 0.0.0.0 255.255.0.0 U 1000 0 0 ens160
192.168.215.0 0.0.0.0 255.255.255.0 U 100 0 0 ens160
```

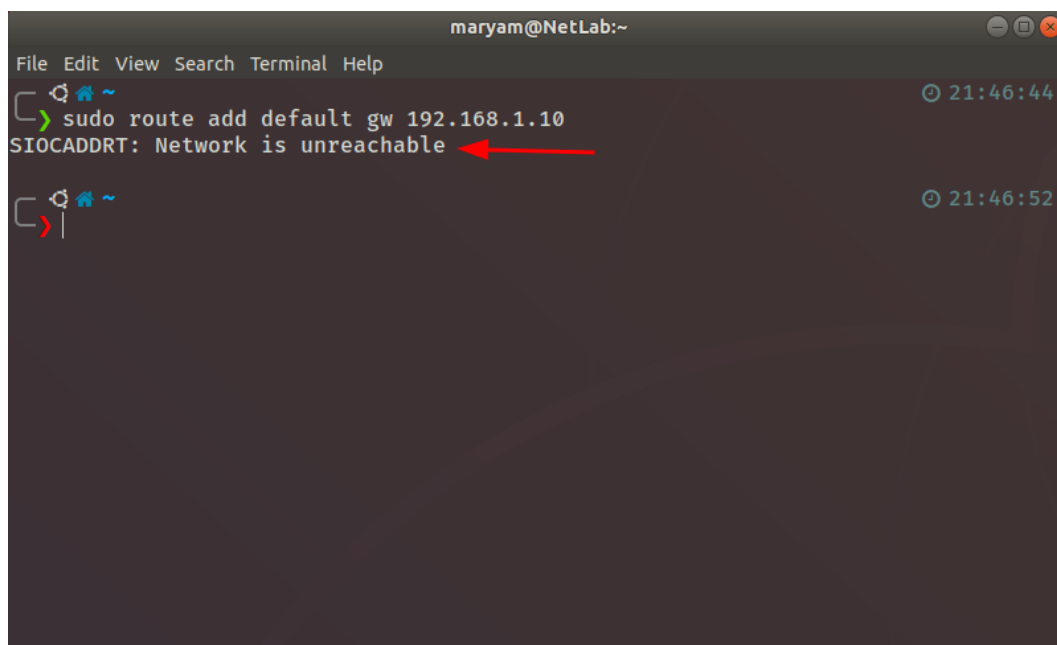
شکل ۱۹: جدول مسیریابی سیستم

```
maryam@NetLab:~
File Edit View Search Terminal Help
> route -n
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 192.168.215.2 0.0.0.0 UG 20100 0 0 ens160
169.254.0.0 0.0.0.0 255.255.0.0 U 1000 0 0 ens160
192.168.215.0 0.0.0.0 255.255.255.0 U 100 0 0 ens160

> sudo route add default gw 192.168.215.10

> route -n
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
0.0.0.0 192.168.215.10 0.0.0.0 UG 0 0 0 ens160
0.0.0.0 192.168.215.2 0.0.0.0 UG 20100 0 0 ens160
169.254.0.0 0.0.0.0 255.255.0.0 U 1000 0 0 ens160
192.168.215.0 0.0.0.0 255.255.255.0 U 100 0 0 ens160
```

شکل ۲۰: ایجاد default gateway جدید در نت‌ماسک شبکه خودم



A terminal window titled 'maryam@NetLab:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows a command prompt with a user icon and tilde. The command 'sudo route add default gw 192.168.1.10' is entered. The output is 'SIOCADDRT: Network is unreachable', with a red arrow pointing to it. The prompt is shown again on the next line. On the right side, there are two timestamps: '21:46:44' and '21:46:52'.

```
maryam@NetLab:~  
File Edit View Search Terminal Help  
[~] 21:46:44  
> sudo route add default gw 192.168.1.10  
SIOCADDRT: Network is unreachable  
[~] 21:46:52  
> |
```

شکل ۲۱: ایجاد default gateway جدید 192.168.1.10

```
maryam@NetLab:~  
File Edit View Search Terminal Help  
~  
[> route -n  
Kernel IP routing table  
Destination Gateway Genmask Flags Metric Ref Use Iface  
0.0.0.0 192.168.215.2 0.0.0.0 UG 20100 0 0 ens160  
169.254.0.0 0.0.0.0 255.255.0.0 U 1000 0 0 ens160  
192.168.215.0 0.0.0.0 255.255.255.0 U 100 0 0 ens160  
~  
[> ping www.google.com  
PING www.google.com (172.217.169.228) 56(84) bytes of data.  
64 bytes from mct01s10-in-f4.1e100.net (172.217.169.228): icmp_seq=1 ttl=128 time=74.0 ms  
64 bytes from mct01s10-in-f4.1e100.net (172.217.169.228): icmp_seq=2 ttl=128 time=71.8 ms  
64 bytes from mct01s10-in-f4.1e100.net (172.217.169.228): icmp_seq=3 ttl=128 time=74.1 ms  
64 bytes from mct01s10-in-f4.1e100.net (172.217.169.228): icmp_seq=4 ttl=128 time=73.1 ms  
^C  
--- www.google.com ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3006ms  
rtt min/avg/max/mdev = 71.866/73.287/74.127/0.914 ms  
~  
[> sudo route add default gw 192.168.215.10  
~  
[> route -n  
Kernel IP routing table  
Destination Gateway Genmask Flags Metric Ref Use Iface  
0.0.0.0 192.168.215.10 0.0.0.0 UG 0 0 0 ens160  
0.0.0.0 192.168.215.2 0.0.0.0 UG 20100 0 0 ens160  
169.254.0.0 0.0.0.0 255.255.0.0 U 1000 0 0 ens160  
192.168.215.0 0.0.0.0 255.255.255.0 U 100 0 0 ens160  
~  
[> ping www.google.com  
PING www.google.com (172.217.169.228) 56(84) bytes of data.  
From NetLab (192.168.215.135) icmp_seq=1 Destination Host Unreachable  
From NetLab (192.168.215.135) icmp_seq=2 Destination Host Unreachable  
From NetLab (192.168.215.135) icmp_seq=3 Destination Host Unreachable  
From NetLab (192.168.215.135) icmp_seq=4 Destination Host Unreachable  
From NetLab (192.168.215.135) icmp_seq=5 Destination Host Unreachable  
From NetLab (192.168.215.135) icmp_seq=6 Destination Host Unreachable  
From NetLab (192.168.215.135) icmp_seq=7 Destination Host Unreachable  
^C  
--- www.google.com ping statistics ---  
7 packets transmitted, 0 received, +7 errors, 100% packet loss, time 6097ms  
pipe 4  
~
```

شکل ۲۲: بررسی وضعیت اتصال به اینترنت قبل و بعد از افزودن default gateway جدید

```
maryam@NetLab:~  
File Edit View Search Terminal Help  
[~] 22:09:03  
> route -Cn  
Kernel IP routing cache  
Source          Destination      Gateway          Flags Metric Ref    Use Iface  
[~] 22:09:05  
> |
```

شکل ۲۳: بررسی اطلاعات کش شده سیستم