

# Лабораторная работа 12

## Настройки сети в Linux

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## Цель работы

Получить навыки настройки сетевых параметров системы.

1. Использование утилиты **ip**
2. Использование утилиты **nmcli**
3. Работа с **nmtui**

# Информация о сетевых интерфейсах

```
Activities Terminal Sep 9 12:17 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
su: Authentication failure
[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# ip -s link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    RX:  bytes packets errors dropped missed mcast
         2195      19      0      0      0      0
    TX:  bytes packets errors dropped carrier collsns
         2195      19      0      0      0      0
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    RX:  bytes packets errors dropped missed mcast
         14332650    14678      0      0      0      7
    TX:  bytes packets errors dropped carrier collsns
         2713548     7518      0      0      0      0
[root@ndbaranov ~]# ip route show
default via 10.0.2.2 dev enp0s3 proto dhcp src 10.0.2.15 metric 100
10.0.2.0/24 dev enp0s3 proto kernel scope link src 10.0.2.15 metric 100
[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84615sec preferred_lft 84615sec
    inet6 fe80::208:27ff:fe2a:f035/64 scope global dynamic noprefixroute
        valid_lft 85971sec preferred_lft 13971sec
    inet6 fe80::208:27ff:fe2a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# ping -c 4 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=255 time=53.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=50.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=44.4 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=65.3 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3011ms
rtt min/avg/max/mdev = 44.446/53.341/65.283/7.576 ms
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev ^C
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev enp0s3
[root@ndbaranov ~]#
```

# Таблица маршрутизации

```
Activities Terminal Sep 9 12:17 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
su: Authentication failure
[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# ip -s link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    RX:  bytes packets errors dropped missed mcast
         2195      19      0      0      0      0
    TX:  bytes packets errors dropped carrier collsns
         2195      19      0      0      0      0
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    RX:  bytes packets errors dropped missed mcast
         14332650    14678      0      0      0      7
    TX:  bytes packets errors dropped carrier collsns
         2713548     7518      0      0      0      0
[root@ndbaranov ~]# ip route show
default via 10.0.2.2 dev enp0s3 proto dhcp src 10.0.2.15 metric 100
10.0.2.0/24 dev enp0s3 proto kernel scope link src 10.0.2.15 metric 100
[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84615sec preferred_lft 84615sec
    inet6 fe80::208:2a00:c7ff:fe2a1515/64 scope global dynamic noprefixroute
        valid_lft 85971sec preferred_lft 13971sec
    inet6 fe09::a00::272:f035:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# ping -c 4 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=255 time=53.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=50.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=44.4 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=65.3 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3011ms
rtt min/avg/max/mdev = 44.446/53.341/65.283/7.576 ms
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev ^C
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev enp0s3
[root@ndbaranov ~]#
```

# Назначенные IP-адреса

```
Activities Terminal Sep 9 12:19 en [Icons] [Menu] [Close]
root@ndbaranov:~

[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84297sec preferred_lft 84297sec
    inet 10.0.0.10/24 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035/64 scope global dynamic noprefixroute
        valid_lft 86092sec preferred_lft 14002sec
    inet6 fe80::a00:27ff:fe2a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

[root@ndbaranov ~]# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:2a:f0:35 txqueuelen 1000 (Ethernet)
    RX packets 25558 bytes 28268020 (26.9 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 11301 bytes 2954918 (2.8 MiB)
    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 19 bytes 2195 (2.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 19 bytes 2195 (2.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@ndbaranov ~]# ss -tul

Netid      State     Recv-Q      Send-Q      Local Address:Port      Peer Address:Port
udp        UNCONN     0            0          127.0.0.1:323           0.0.0.0:*
udp        UNCONN     0            0          0.0.0.0:mdns           0.0.0.0:*
udp        UNCONN     0            0          [::1]:323              [::]:*
udp        UNCONN     0            0          [::]:mdns              [::]:*
tcp        LISTEN     0            4096       127.0.0.1:ipp          0.0.0.0:*
tcp        LISTEN     0            128       0.0.0.0:ssh            0.0.0.0:*
tcp        LISTEN     0            511       *:http                 *:*
tcp        LISTEN     0            32        *:ftp                  *:*
tcp        LISTEN     0            128       [::]:ssh               [::]:*
tcp        LISTEN     0            4096       [::]:ipp               [::]:*
```

# Проверка соединения (ping)

```
Activities Terminal Sep 9 12:17 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
su: Authentication failure
[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# ip -s link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    RX:  bytes packets errors dropped missed mcast
         2195      19      0      0      0      0
    TX:  bytes packets errors dropped carrier collsns
         2195      19      0      0      0      0
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    RX:  bytes packets errors dropped missed mcast
         14332650    14678      0      0      0      7
    TX:  bytes packets errors dropped carrier collsns
         2713548     7518      0      0      0      0
[root@ndbaranov ~]# ip route show
default via 10.0.2.2 dev enp0s3 proto dhcp src 10.0.2.15 metric 100
10.0.2.0/24 dev enp0s3 proto kernel scope link src 10.0.2.15 metric 100
[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84615sec preferred_lft 84615sec
    inet6 fe80::a00:27ff:fe2a:f035/64 scope global dynamic noprefixroute
        valid_lft 85971sec preferred_lft 13971sec
    inet6 fe80::a00:27ff:fe2a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# ping -c 4 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=255 time=53.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=50.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=44.4 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=65.3 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3011ms
rtt min/avg/max/mdev = 44.446/53.341/65.283/7.576 ms
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev ^C
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev enp0s3
[root@ndbaranov ~]#
```



# Добавление IP-адреса

```
Activities Terminal Sep 9 12:17 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
su: Authentication failure
[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# ip -s link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    RX:  bytes packets errors dropped missed mcast
         2195      19      0      0      0      0
    TX:  bytes packets errors dropped carrier collsns
         2195      19      0      0      0      0
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    RX:  bytes packets errors dropped missed mcast
         14332650    14678      0      0      0      7
    TX:  bytes packets errors dropped carrier collsns
         2713548     7518      0      0      0      0
[root@ndbaranov ~]# ip route show
default via 10.0.2.2 dev enp0s3 proto dhcp src 10.0.2.15 metric 100
10.0.2.0/24 dev enp0s3 proto kernel scope link src 10.0.2.15 metric 100
[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84615sec preferred_lft 84615sec
    inet6 fe80::a00:27ff:fe3a:f035/64 scope global dynamic noprefixroute
        valid_lft 85971sec preferred_lft 13971sec
    inet6 fe09::a00:27ff:fe3a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# ping -c 4 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=255 time=53.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=50.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=44.4 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=65.3 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3011ms
rtt min/avg/max/mdev = 44.446/53.341/65.283/7.576 ms
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev ^C
[root@ndbaranov ~]# ip addr add 10.0.0.10/24 dev enp0s3
[root@ndbaranov ~]#
```

# Проверка добавленного адреса

```
Activities Terminal Sep 9 12:19 en [Icons] [Menu] [Close]
root@ndbaranov:~

[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84297sec preferred_lft 84297sec
    inet 10.0.0.10/24 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035/64 scope global dynamic noprefixroute
        valid_lft 86092sec preferred_lft 14002sec
    inet6 fe80::a00:27ff:fe2a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

[root@ndbaranov ~]# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:2a:f0:35 txqueuelen 1000 (Ethernet)
    RX packets 25558 bytes 28268020 (26.9 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 11301 bytes 2954918 (2.8 MiB)
    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 19 bytes 2195 (2.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 19 bytes 2195 (2.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@ndbaranov ~]# ss -tul

Netid      State     Recv-Q      Send-Q      Local Address:Port      Peer Address:Port
udp        UNCONN     0            0            127.0.0.1:323           0.0.0.0:*
udp        UNCONN     0            0            0.0.0.0:mdns            0.0.0.0:*
udp        UNCONN     0            0            [::1]:323              [::]:*
udp        UNCONN     0            0            [::]:mdns               [::]:*
tcp        LISTEN     0            4096         127.0.0.1:ipp           0.0.0.0:*
tcp        LISTEN     0            128         0.0.0.0:ssh             0.0.0.0:*
tcp        LISTEN     0            511         *:http                  *:
tcp        LISTEN     0            32          *:ftp                   *:
tcp        LISTEN     0            128         [::]:ssh                [::]:*
tcp        LISTEN     0            4096         [::]:ipp                [::]:*
```

# Сравнение ip и ifconfig

```
Activities Terminal Sep 9 12:19 en [Icons] [Menu] [Close]
root@ndbaranov:~

[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84297sec preferred_lft 84297sec
    inet 10.0.0.10/24 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035/64 scope global dynamic noprefixroute
        valid_lft 86092sec preferred_lft 14002sec
    inet6 fe80::a00:27ff:fe2a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

[root@ndbaranov ~]# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:2a:f0:35 txqueuelen 1000 (Ethernet)
    RX packets 25558 bytes 28268020 (26.9 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 11301 bytes 2954918 (2.8 MiB)
    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 19 bytes 2195 (2.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 19 bytes 2195 (2.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@ndbaranov ~]# ss -tul

Netid      State     Recv-Q      Send-Q      Local Address:Port      Peer Address:Port
udp        UNCONN     0            0            127.0.0.1:323            0.0.0.0:*
udp        UNCONN     0            0            0.0.0.0:mdns             0.0.0.0:*
udp        UNCONN     0            0            [::1]:323                [::]:*
udp        UNCONN     0            0            [::]:mdns                [::]:*
tcp        LISTEN     0            4096         127.0.0.1:ipp            0.0.0.0:*
tcp        LISTEN     0            128         0.0.0.0:ssh              0.0.0.0:*
tcp        LISTEN     0            511         *:http                   *:*
tcp        LISTEN     0            32          *:ftp                    *:*
tcp        LISTEN     0            128         [::]:ssh                 [::]:*
tcp        LISTEN     0            4096         [::]:ipp                 [::]:*
```

# Список открытых портов

```
Activities Terminal Sep 9 12:19 en
root@ndbaranov:~

[root@ndbaranov ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 84297sec preferred_lft 84297sec
    inet 10.0.0.10/24 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035/64 scope global dynamic noprefixroute
        valid_lft 86092sec preferred_lft 14002sec
    inet6 fe80::a00:27ff:fe2a:f035/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

[root@ndbaranov ~]# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:fe2a:f035 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:2a:f0:35 txqueuelen 1000 (Ethernet)
    RX packets 25558 bytes 28268020 (26.9 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 11301 bytes 2954918 (2.8 MiB)
    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 19 bytes 2195 (2.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 19 bytes 2195 (2.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@ndbaranov ~]# ss -tul

Netid      State     Recv-Q      Send-Q      Local Address:Port      Peer Address:Port
udp        UNCONN     0            0            127.0.0.1:323           0.0.0.0:*
udp        UNCONN     0            0            0.0.0.0:mdns            0.0.0.0:*
udp        UNCONN     0            0            [::1]:323              [::]:*
udp        UNCONN     0            0            [::]:mdns               [::]:*
tcp        LISTEN     0            4096         127.0.0.1:ipp           0.0.0.0:*
tcp        LISTEN     0            128         0.0.0.0:ssh             0.0.0.0:*
tcp        LISTEN     0            511         *:http                  *:
tcp        LISTEN     0            32          *:ftp                   *:
tcp        LISTEN     0            128         [::]:ssh                [::]:*
tcp        LISTEN     0            4096         [::]:ipp                [::]:*
```

# Текущие соединения (nmcli)

```
Activities Terminal Sep 9 12:23 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313ddc58 loopback lo

[root@ndbaranov ~]# nmcli connection add con-name "dhcp" type ethernet ifname enp0s3
Connection 'dhcp' (80ca548e-96a2-4498-abfb-9e4647dfaf87) successfully added.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3
Error: 'type' argument is required.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3 autoconnect no type ethernet ip4 10.0.0.10/24 gw4 10.0.0.1 ifname enp0s3
Connection 'static' (374fe9a3-d317-4964-b758-fad561edd8b6) successfully added.
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313ddc58 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfaf87 ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313ddc58 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfaf87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.10/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a19:ca71:a7b:90d1/64 scope global dynamic noprefixroute
        valid_lft 86365sec preferred_lft 14365sec
    inet6 fe80::a19:ca71:a7b:90d1/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmcli connection up "dhcp"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
dhcp 80ca548e-96a2-4498-abfb-9e4647dfaf87 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313ddc58 loopback lo
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
```

# Создание соединения DHCP

```
Activities Terminal Sep 9 12:23 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo

[root@ndbaranov ~]# nmcli connection add con-name "dhcp" type ethernet ifname enp0s3
Connection 'dhcp' (80ca548e-96a2-4498-abfb-9e4647dfa87) successfully added.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3
Error: 'type' argument is required.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3 autoconnect no type ethernet ip4 10.0.0.10/24 gw4 10.0.0.1 ifname enp0s3
Connection 'static' (374fe9a3-d317-4964-b758-fad561edd8b6) successfully added.
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.10/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a19:ca71:a7b:90d1/64 scope global dynamic noprefixroute
        valid_lft 86365sec preferred_lft 14365sec
    inet6 fe80::a19:ca71:a7b:90d1/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmcli connection up "dhcp"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
```

# Создание статического соединения

```
Activities Terminal Sep 9 12:23 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo

[root@ndbaranov ~]# nmcli connection add con-name "dhcp" type ethernet ifname enp0s3
Connection 'dhcp' (80ca548e-96a2-4498-abfb-9e4647dfaf87) successfully added.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3
Error: 'type' argument is required.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3 autoconnect no type ethernet ip4 10.0.0.10/24 gw4 10.0.0.1 ifname enp0s3
Connection 'static' (374fe9a3-d317-4964-b758-fad561edd8b6) successfully added.
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfaf87 ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfaf87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.10/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a13:ec71:a7b5:90a1/64 scope global dynamic noprefixroute
        valid_lft 86365sec preferred_lft 14365sec
    inet6 fe80::a13:ec71:a7b5:90a1/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmcli connection up "dhcp"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
dhcp 80ca548e-96a2-4498-abfb-9e4647dfaf87 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
```

# Активация статического соединения

```
Activities Terminal Sep 9 12:23 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 9966a8c7-ec8d-40e1-0113-2538313addc8 loopback lo

[root@ndbaranov ~]# nmcli connection add con-name "dhcp" type ethernet ifname enp0s3
Connection 'dhcp' (80ca548e-96a2-4498-abfb-9e4647dfa87) successfully added.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3
Error: 'type' argument is required.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3 autoconnect no type ethernet ip4 10.0.0.10/24 gw4 10.0.0.1 ifname enp0s3
Connection 'static' (374fe9a3-d317-4964-b758-fad561edd8b6) successfully added.
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 9966a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet enp0s3
lo 9966a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.10/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a13:ac97:4297:59e6/64 scope global dynamic noprefixroute
        valid_lft 86365sec preferred_lft 14365sec
    inet6 fe80::a13:ac97:4297:59e6/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmcli connection up "dhcp"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet enp0s3
lo 9966a8c7-ec8d-40e1-0113-2538313addc8 loopback lo
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
```



# Возврат к DHCP соединению

```
Activities Terminal Sep 9 12:23 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-25303130dc58 loopback lo

[root@ndbaranov ~]# nmcli connection add con-name "dhcp" type ethernet ifname enp0s3
Connection 'dhcp' (80ca548e-96a2-4498-abfb-9e4647dfa87) successfully added.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3
Error: 'type' argument is required.
[root@ndbaranov ~]# nmcli connection add con-name "static" ifname enp0s3 autoconnect no type ethernet ip4 10.0.0.10/24 gw4 10.0.0.1 ifname enp0s3
Connection 'static' (374fe9a3-d317-4964-b758-fad561edd8b6) successfully added.
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-25303130dc58 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-25303130dc58 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.10/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a19:ca71:a67b:90d1/64 scope global dynamic noprefixroute
        valid_lft 86365sec preferred_lft 14365sec
    inet6 fe80::a19:ca71:a67b:90d1/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmcli connection up "dhcp"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
[root@ndbaranov ~]# nmcli connection show
NAME UUID TYPE DEVICE
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet enp0s3
lo 8066a8c7-ec8d-40e1-0113-25303130dc58 loopback lo
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
static 374fe9a3-d317-4964-b758-fad561edd8b6 ethernet --
```

# Настройка DNS и автоподключения

```
Activities Terminal Sep 9 12:26 en root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection modify "static" connection.autoconnect no
[root@ndbaranov ~]# nmcli connection modify "static" ipv4.dns 10.0.0.10
[root@ndbaranov ~]# nmcli connection modify "static" +ipv4.dns 8.8.8.8
[root@ndbaranov ~]# nmcli connection modify "static" ipv4.addresses 10.0.0.20/24
[root@ndbaranov ~]# nmcli connection modify "static" +ipv4.addresses 10.20.30.40/16
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/5)
[root@ndbaranov ~]# nmcli con show
NAME      UUID                                  TYPE      DEVICE
static    374fe9a3-d317-4954-b758-fad561edd8b6 ethernet  enp0s3
lo        995669c7-ec8d-49e1-9111-2530313edc58 loopback   lo
dhcp     80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet  --
enp0s3    323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet  --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.20/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet 10.20.30.40/16 brd 10.20.255.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a319:6390:4372:a7b1:eb81/64 scope global dynamic noprefixroute
        valid_lft 86367sec preferred_lft 14367sec
    inet6 fe80::a319:6390:4372:a7b1:eb81/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmtui
[root@ndbaranov ~]#
```

# Изменение IP-адресов

```
Activities Terminal Sep 9 12:26 en
root@ndbaranov:~

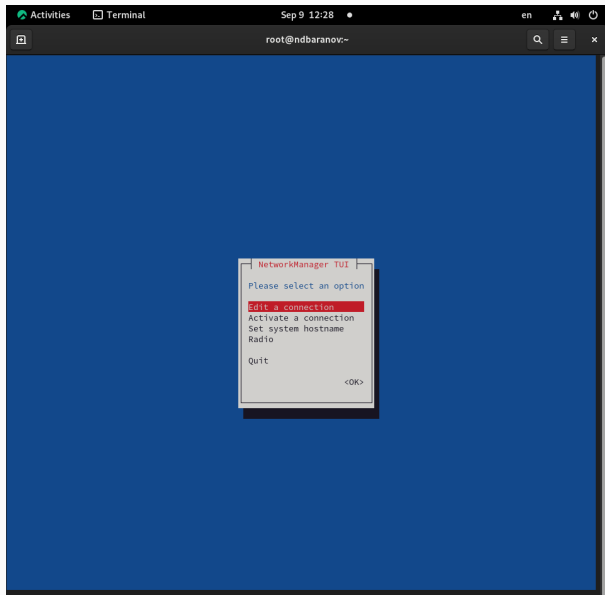
[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection modify "static" connection.autoconnect no
[root@ndbaranov ~]# nmcli connection modify "static" ipv4.dns 10.0.0.10
[root@ndbaranov ~]# nmcli connection modify "static" +ipv4.dns 8.8.8.8
[root@ndbaranov ~]# nmcli connection modify "static" ipv4.addresses 10.0.0.20/24
[root@ndbaranov ~]# nmcli connection modify "static" +ipv4.addresses 10.20.30.40/16
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/5)
[root@ndbaranov ~]# nmcli con show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4954-b758-fad561edd8b6 ethernet enp0s3
lo 960ee8c7-ec8d-49e1-9111-2530313edc58 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.20/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet 10.20.30.40/16 brd 10.20.255.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::e319:6372:21a727:1901:1ba1:64 scope global dynamic noprefixroute
        valid_lft 86367sec preferred_lft 14367sec
    inet6 fe80::e319:6372:21a727:1901:1ba1:64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmtui
[root@ndbaranov ~]#
```

# Активация измененного соединения

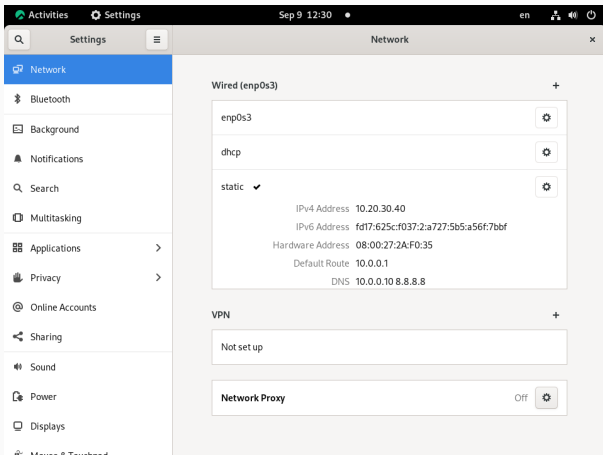
```
Activities Terminal Sep 9 12:26 en
root@ndbaranov:~

[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection modify "static" connection.autoconnect no
[root@ndbaranov ~]# nmcli connection modify "static" ipv4.dns 10.0.0.10
[root@ndbaranov ~]# nmcli connection modify "static" +ipv4.dns 8.8.8.8
[root@ndbaranov ~]# nmcli connection modify "static" ipv4.addresses 10.0.0.20/24
[root@ndbaranov ~]# nmcli connection modify "static" +ipv4.addresses 10.20.30.40/16
[root@ndbaranov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/5)
[root@ndbaranov ~]# nmcli con show
NAME UUID TYPE DEVICE
static 374fe9a3-d317-4954-b758-fad561edd8b6 ethernet enp0s3
lo 9686a8c7-ec8d-49e1-9111-2530313edc58 loopback lo
dhcp 80ca548e-96a2-4498-abfb-9e4647dfa87 ethernet --
enp0s3 323019fe-6482-30d5-b2d5-9adf9f40a75d ethernet --
[root@ndbaranov ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2a:f0:35 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.20/24 brd 10.0.0.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet 10.20.30.40/16 brd 10.20.255.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a379:21a7:271:90a5:1ba:64 scope global dynamic noprefixroute
        valid_lft 86367sec preferred_lft 14367sec
    inet6 fe80::a379:21a7:271:90a5:1ba:64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmtui
[root@ndbaranov ~]#
```

# Интерфейс nmtui

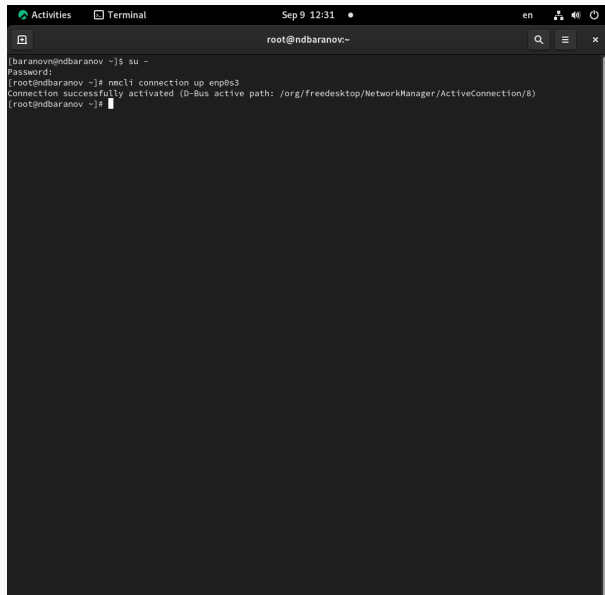


# Графические настройки сети



```
valid_lft 86400sec preferred_lft 14400sec
inet6 fe80::e3f9:a371:a7b:ab61/64 scope link noprefixroute
valid_lft forever preferred_lft forever
[root@ndbaranov ~]# nmcli
[root@ndbaranov ~]# nmcli
[root@ndbaranov ~]#
```

# Возврат к первоначальному соединению



```
Activities Terminal Sep 9 12:31 en [system icons]
root@ndbaranov:~
[baranov@ndbaranov ~]$ su -
Password:
[root@ndbaranov ~]# nmcli connection up enp0s3
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/8)
[root@ndbaranov ~]#
```

- Получены навыки работы с утилитой **ip**
- Освоена настройка сетевых параметров через **nmcli**
- Изучена работа с **nmtui**