

Лабораторная работа №12

Презентация

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Информация

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Элементы презентации

Цели и задачи

Целью данной лабораторной работы является получение навыков настройки сетевых параметров системы.

Выполнение лабораторной работы

Проверка конфигурации сети

```
[ermimash@ermimash ~]$ su -
Password:
[root@ermimash ~]# 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
            2130     18      0      0      0      0
        TX: bytes packets errors dropped carrier collsns
            2130     18      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:c9:00:ae brd ff:ff:ff:ff:ff:ff
        RX: bytes packets errors dropped missed mcast
            65335802   54887      0      0      0      9
        TX: bytes packets errors dropped carrier collsns
            4557951   40149      0      0      0      0
[root@ermimash ~]# 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@ermimash ~]# 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:c9:00:ae 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 83193sec preferred_lft 83193sec
    inet6 fe17:625c:037:2:a0:27ff:fe00:9ae/64 scope global dynamic noprefixroute
        valid_lft 14203sec preferred_lft 14203sec
    inet6 fe80::a0:27ff:fe00:9ae/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ermimash ~]# 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=53.0 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=255 time=44.4 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=255 time=35.8 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=255 time=37.9 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3006ms
rtt min/avg/max/mdev = 35.809/42.765/52.971/6.689 ms
[root@ermimash ~]# ip addr add 10.0.0.10/24 dev enp0s3
[root@ermimash ~]# 
```

Добавление доп. адреса

```
[root@ermimash ~]# ip addr add 10.0.0.10/24 dev enp0s3
[root@ermimash ~]# 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:c9:00:ae 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 83070sec preferred_lft 83070sec
        inet 10.0.0.10/24 scope global enp0s3
            valid_lft forever preferred_lft forever
        inet6 fd1c:025c:f037:21a0:027ff:fecc:ae:64 scope global dynamic noprefixroute
            valid_lft 86080sec preferred_lft 140880sec
        inet6 fe80::025c:f037:21a0:027ff:fecc:ae:64 scope link noprefixroute
            valid_lft forever preferred_lft forever
[root@ermimash ~]# 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 fd1c:025c:f037:21a0:027ff:fecc:ae:64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:fecc:ae prefixlen 64 scopeid 0x20<link>
        ether 08:00:27:c9:00:ae txqueuelen 1000 (Ethernet)
        RX packets 54875 bytes 65342235 (62.3 MiB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 40223 bytes 4564609 (4.3 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 18 bytes 2138 (2.0 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 18 bytes 2138 (2.0 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
I
[root@ermimash ~]# 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          [::]: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           4096       [::]:ipp      [::]:*
tcp        LISTEN      0           32          [::]:fto      [::]:*
```

Устранения неполадок

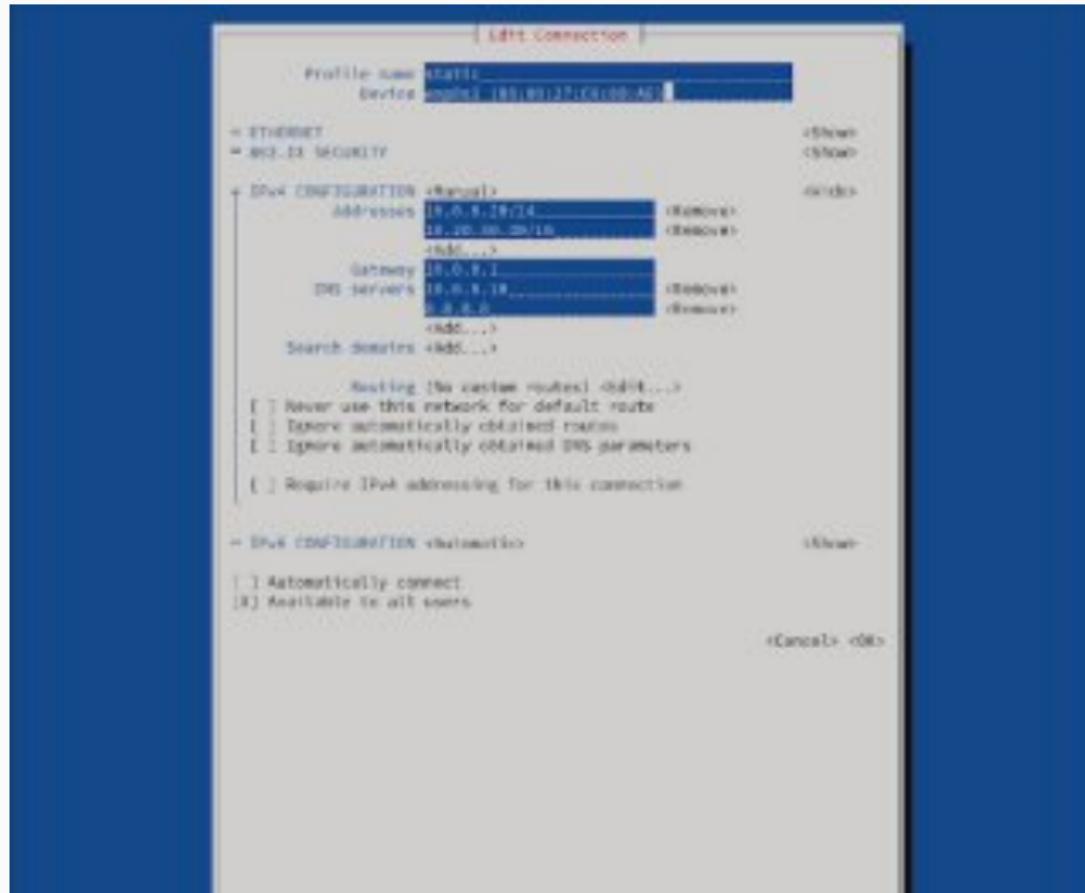
```
[root@benetbook ~]# su -
Password:
[root@benetbook ~]# radicall connection show
NAME      UUID                                         TYPE      DEVICE
wlan0     00000000-0000-0000-0000-000000000000  ethernet  wlp5s0
[radicall] [root@benetbook ~]# radicall connection add con-type "dhcp" type ethernet ifname wlp5s0
Connection 'dhcp' (59a072d0-14d9-4f69-938e-115932f55048) successfully added.
[radicall] [root@benetbook ~]# radicall connection add con-type "static" ifname wlp5s0
Error: "type" argument is required.
[radicall] [root@benetbook ~]# radicall connection add con-type "static" ifname wlp5s0
autoconnect no type ethernet ip4 10.0.0.1 netmask 255.0.0.0
ifname wlp5s0
Error: "type" argument is required.
basic autoconnect command not found...
basic ifname command not found...
[radicall] [root@benetbook ~]# radicall connection add con-type "static" ifname wlp5s0 autoconnect no type ethernet ip4 10.0.0.1 netmask 255.0.0.0
ip4 10.0.0.1 ifname wlp5s0
Connection 'static' (2395caee-0954-4ff3-a0c0-26a9c7cd87ea) successfully added.
[radicall] [root@benetbook ~]# radicall connection show
NAME      UUID                                         TYPE      DEVICE
wlan0     00000000-0000-0000-0000-000000000000  ethernet  wlp5s0
[radicall] [root@benetbook ~]# dhclient -v -r -i wlp5s0
dhclient: lease obtained from 10.0.0.1 for 150 seconds
static 2395caee-0954-4ff3-a0c0-26a9c7cd87ea  ethernet  --
[radicall] [root@benetbook ~]# radicall connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnections(3))
[radicall] [root@benetbook ~]# radicall connection show
NAME      UUID                                         TYPE      DEVICE
static 2395caee-0954-4ff3-a0c0-26a9c7cd87ea  ethernet  wlp5s0
[radicall] [root@benetbook ~]# dhclient -v -r -i wlp5s0
dhclient: lease obtained from 10.0.0.1 for 150 seconds
[radicall] [root@benetbook ~]# radicall connection up "static"
[radicall] [root@benetbook ~]# ip link
1: lo:   mtu 1500 qdisc mq state UNKNOWN group default qlen 1000
    link/loopback brd 00:00:00:00:00:00 state UNKNOWN
    inet 127.0.0.1/8 brd 127.255.255.255 scope host lo
        valid_lft forever preferred_lft forever
    link/loopback brd 00:00:00:00:00:00 state UNKNOWN
    inet 127.0.0.1/8 brd 127.255.255.255 scope global noprefixroute enp5s0
        valid_lft forever preferred_lft forever
2: enp5s0:   mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:0c:29:00:00:00 brd 00:0c:29:ff:ff:ff
    inet 10.0.0.1/24 brd 10.0.0.255 scope global noprefixroute enp5s0
        valid_lft forever preferred_lft forever
    link/loopback brd 00:00:00:00:00:00 state UNKNOWN
    inet 127.0.0.1/8 brd 127.255.255.255 scope global noprefixroute enp5s0
        valid_lft forever preferred_lft forever
[radicall]
```

Изменение параметров соединения с помощью nmcli

```
[root@ermimash ~]# nmcli connection modify "static" connection.autoconnect no
[root@ermimash ~]# nmcli connection modify "static" ipv4.dns 10.0.0.10
[root@ermimash ~]# nmcli connection modify "static" +ipv4.dns 8.8.8.8
[root@ermimash ~]# nmcli connection modify "static" ipv4.addresses 10.0.0.20/24
[root@ermimash ~]# nmcli connection modify "static" +ipv4.addresses 10.20.30.40/16
[root@ermimash ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/5)
[root@ermimash ~]# nmcli con show
NAME      UUID                                  TYPE      DEVICE
static    2296c9ae-d994-40f3-a3dc-26a8c7cdd7aa  ethernet  enp0s3
lo        6dde94eb-d798-4517-9997-9d43afc0062e  loopback  lo
dhcpc    56a2720d-fad6-4102-978e-115932f55846  ethernet  --
enp0s3   d3748174-39bb-30c0-8158-982d6450c911  ethernet  --
[root@ermimash ~]# 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 brd 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:c9:00:ae 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 fe17:825c:7037:2:ad01:8c30:6e64:0b10/64 scope global dynamic noprefixroute
        valid_lft 86387sec preferred_lft 14387sec
    inet6 fe80::f9ef:e42c:bc68:ec11/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@ermimash ~]# nmcli
[root@ermimash ~]# nmcli connection up "static"
```

Рис. 4: Изменение параметров соединения с помощью nmcli

Настройки



Настройки сетевых соед. в граф. интерфейсе ОС

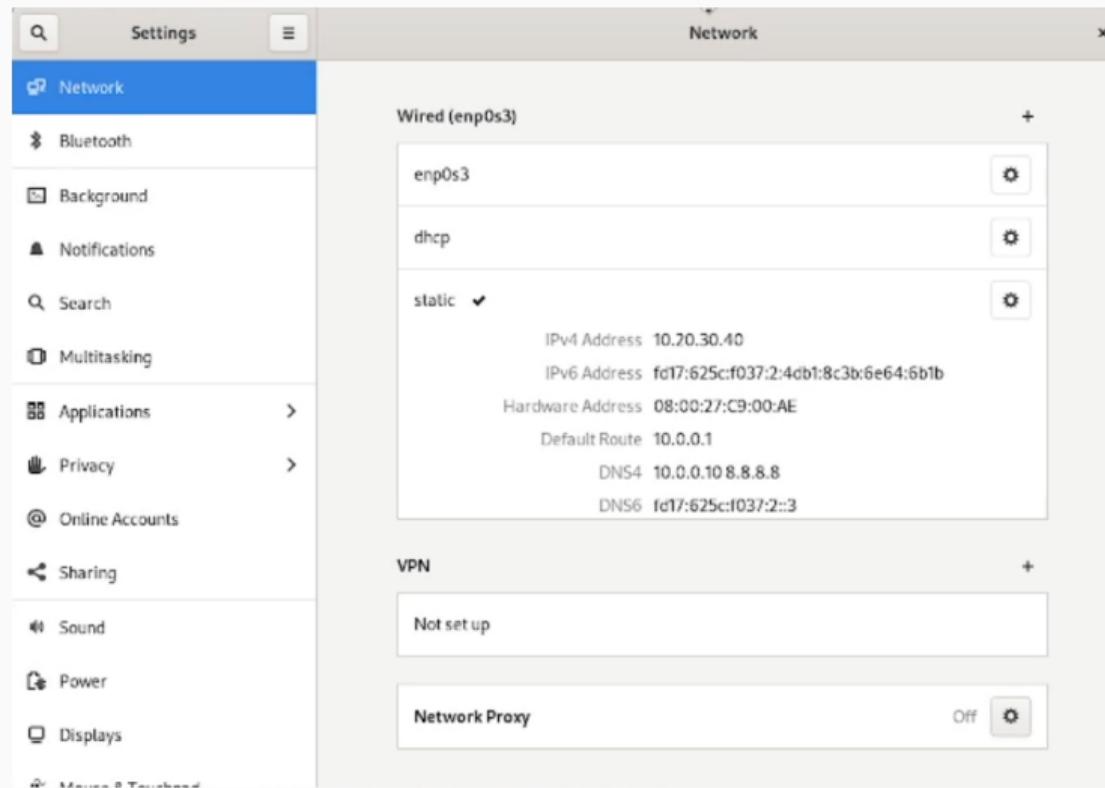


Рис. 6: Настройки сетевых соед. в граф. интерфейсе ОС

Результаты

Получены навыки настройки сетевых параметров системы.