

Лабораторная работа 12

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2022

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Задача

1. Продемонстрируйте навыки использования утилиты `ip` (см. раздел 12.4.1).

1. Продемонстрируйте навыки использования утилиты `ip` (см. раздел 12.4.1).
2. Продемонстрируйте навыки использования утилиты `nmcli` (см. раздел 12.4.2 и 12.4.3).

Выполнение

```
[root@dmgeneralov ~]# 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
         0         0         0         0         0
    TX:  bytes packets errors dropped carrier collsns
         0         0         0         0         0
2: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 52:54:00:f0:d2:15 brd ff:ff:ff:ff:ff:ff
    RX:  bytes packets errors dropped missed mcast
        9432768  16521         0    2628         0
    TX:  bytes packets errors dropped carrier collsns
        135353    2116         0         0         0
[root@dmgeneralov ~]#
```

Рис. 1: ip link

```
[root@dmgeneralov ~]# ip route show
default via 192.168.122.1 dev enp1s0 proto dhcp src 192.168.122.187 metric 100
192.168.122.0/24 dev enp1s0 proto kernel scope link src 192.168.122.187 metric 100
[root@dmgeneralov ~]# _
```

Рис. 2: ip route

```
[root@dmgeneralov ~]# 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: enp1s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:f8:d2:15 brd ff:ff:ff:ff:ff:ff
    inet 192.168.122.187/24 brd 192.168.122.255 scope global dynamic noprefixroute enp1s8
        valid_lft 3582sec preferred_lft 3582sec
    inet6 fe80::5054:ff:fef0:d215/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@dmgeneralov ~]#
```

Рис. 3: ip addr

ip addr add

```
[root@dmgeneralov ~]# ping 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=63 time=0.929 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=63 time=0.399 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=63 time=0.296 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=63 time=0.602 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=63 time=0.642 ms
^C
--- 8.8.8.8 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4067ms
rtt min/avg/max/mdev = 0.296/0.573/0.929/0.218 ms
[root@dmgeneralov ~]# ip addr add 10.0.0.10/24
Not enough information: "dev" argument is required.
[root@dmgeneralov ~]# ip addr add 10.0.0.10/24 dev enp1s0
[root@dmgeneralov ~]# 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: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:f0:d2:15 brd ff:ff:ff:ff:ff:ff
    inet 192.168.122.187/24 brd 192.168.122.255 scope global dynamic noprefixroute enp1s0
        valid_lft 3209sec preferred_lft 3209sec
    inet 10.0.0.10/24 scope global enp1s0
        valid_lft forever preferred_lft forever
    inet6 fe80::5054:ff:fef0:d215/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@dmgeneralov ~]# ifconfig
-bash: ifconfig: command not found
[root@dmgeneralov ~]#
```

```

root@dnigenera lov ~]# ss -tul
Netid      State      Recv-Q     Send-Q      Local Address:Port      Peer Address:Port      Process
udp        UNCONN    0           0           127.0.0.1:323          0.0.0.0:*
udp        UNCONN    0           0           [::]:323              [::]:*
tcp        LISTEN    0          128         0.0.0.0:ssh            0.0.0.0:*
tcp        LISTEN    0          128         [::]:ssh               [::]:*
tcp        LISTEN    0          511         *:http                 *:*
```

Рис. 5: ss

```

[root@dmgeneralov ~]# nmcli connection show
NAME      UUID                                  TYPE      DEVICE
enp1s8    741b7e48-9aba-3878-95ee-66e65214cc12 ethernet enp1s8
[root@dmgeneralov ~]# nmcli connection add con-name "dhcp" type ethernet ifname enp1s8
Connection 'dhcp' (358de889-13ae-49c8-b947-3c81f8ea3233) successfully added.
[root@dmgeneralov ~]# nmcli connection add con-name "static" ifname enp1s8 autocommit no type ethernet ip4 10.0.0.10/24 gw4 10.0.0.1 ifname enp1s8
Connection 'static' (f88713e6-2e8d-43a4-a936-67e15c948e10) successfully added.
[root@dmgeneralov ~]# nmcli connection show
NAME      UUID                                  TYPE      DEVICE
enp1s8    741b7e48-9aba-3878-95ee-66e65214cc12 ethernet enp1s8
dhcp      358de889-13ae-49c8-b947-3c81f8ea3233 ethernet --
static    f88713e6-2e8d-43a4-a936-67e15c948e10 ethernet --
[root@dmgeneralov ~]# nmcli connection up static
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/2)
[root@dmgeneralov ~]# nmcli connection show
NAME      UUID                                  TYPE      DEVICE
static    f88713e6-2e8d-43a4-a936-67e15c948e10 ethernet enp1s8
dhcp      358de889-13ae-49c8-b947-3c81f8ea3233 ethernet --
enp1s8    741b7e48-9aba-3878-95ee-66e65214cc12 ethernet --
[root@dmgeneralov ~]# 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: enp1s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:f8:42:15 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.10/24 brd 10.0.0.255 scope global noprefixroute enp1s8
        valid_lft forever preferred_lft forever
    inet6 fe80::f942:2810:3298:5d8c/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@dmgeneralov ~]# nmcli connection up dhcp
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
[root@dmgeneralov ~]# 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: enp1s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:f8:42:15 brd ff:ff:ff:ff:ff:ff
    inet 192.168.122.107/24 brd 192.168.122.255 scope global dynamic noprefixroute enp1s8
        valid_lft 3599sec preferred_lft 3599sec
    inet6 fe80::e488:2799:e47a:558e/64 scope link tentative noprefixroute
        valid_lft forever preferred_lft forever
[root@dmgeneralov ~]#

```

Рис. 6: nmcli

```

[root@dmgeneralov ~]# nmcli connection modify "static" connection.autoconnect no
[root@dmgeneralov ~]# nmcli connection modify "static" ipv4.dns 10.0.0.10
[root@dmgeneralov ~]# nmcli connection modify "static" +ipv4.dns 8.8.8.8
[root@dmgeneralov ~]# nmcli connection modify "static" ipv4.addresses 10.0.0.20/24
[root@dmgeneralov ~]# nmcli connection modify "static" ipv4.addresses +10.20.30.40/16
Error: failed to modify ipv4.addresses: invalid IP address: Invalid IPv4 address '+10.20.30.40'.
[root@dmgeneralov ~]# nmcli connection modify "static" +ipv4.addresses 10.20.30.40/16
[root@dmgeneralov ~]# nmcli connection up "static"
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)
[root@dmgeneralov ~]# nmcli con show

```

NAME	UUID	TYPE	DEVICE
static	f88713e6-2e0d-43a4-a936-67e15c940e10	ethernet	enp1s0
dhcp	350de889-13ae-49c8-b947-3c01f0ea3233	ethernet	--
enp1s0	741b7e48-9aba-3878-95ee-66e65214cc12	ethernet	--

```

[root@dmgeneralov ~]# 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: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:f8:d2:15 brd ff:ff:ff:ff:ff:ff
    inet 10.0.0.20/24 brd 10.0.0.255 scope global noprefixroute enp1s0
        valid_lft forever preferred_lft forever
    inet 10.20.30.40/16 brd 10.20.255.255 scope global noprefixroute enp1s0
        valid_lft forever preferred_lft forever
    inet6 fe80::f9d2:2810:3298:5d8c:64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@dmgeneralov ~]#

```

Рис. 7: nmcli edit

Edit Connection			
Profile name	static		
Device	enp1s0 (52:54:00:F8:D2:15)		
= ETHERNET		<Show>	
IPV4 CONFIGURATION	<Manual>	<Hide>	
Addresses	10.0.0.20/24	<Remove>	
	10.20.30.40/16	<Remove>	
	<Add...>		
Gateway	10.0.0.1		
DNS servers	10.0.0.10	<Remove>	
	0.0.0.0	<Remove>	
	<Add...>		
Search domains	<Add...>		
Routing (No custom routes) <Edit...>			
<input type="checkbox"/> Never use this network for default route			
<input type="checkbox"/> Ignore automatically obtained routes			
<input type="checkbox"/> Ignore automatically obtained DNS parameters			
<input type="checkbox"/> Require IPV4 addressing for this connection			
= IPV6 CONFIGURATION		<Automatic>	<Show>
<input type="checkbox"/> Automatically connect			
<input checked="" type="checkbox"/> Available to all users			
		<Cancel>	<OK>

Я получил опыт работы с сетевыми интерфейсами и настройкой сети в Linux.