

# Systemy Operacyjne Moduł IV

## Zadanie Domowe

### *Radosław Terelak Gr. 4G*

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#### Zadanie 1

Debian:

```
Debian 9 - Stretch Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
/etc/network/interfaces [-M--] 17 L: [ 1+26 27/ 27] *(541 / 541b) <EOF>
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto enp0s3
iface enp0s3 inet dhcp
iface enp0s3 inet6 auto

auto enp0s8
iface enp0s8 inet static
address 172.30.10.10/24

auto enp0s8:1
iface enp0s8:1 inet static
address 192.168.190.10/24

auto enp0s9
iface enp0s9 inet dhcp
iface enp0s9 inet6 auto

#Radosław Terelak

1Pomoc 2Zapisz 3Zaznacz 4Zastap
```

```
Debian 9 - Stretch Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
root@debianstretch:~# mcedit /etc/network/interfaces
root@debianstretch:~# systemctl restart networking
root@debianstretch:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    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 pfifo_fast state UP group default qlen 1
    000
    link/ether 08:00:27:d2:7a:29 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fed2:7a29/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1
    000
    link/ether 08:00:27:90:d6:f8 brd ff:ff:ff:ff:ff:ff
    inet 172.16.0.10/24 brd 172.16.0.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet 172.30.10.10/24 brd 172.30.10.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet 192.168.190.10/24 brd 192.168.190.255 scope global enp0s8:1
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe90:d6f8/64 scope link
        valid_lft forever preferred_lft forever
4: enp0s9: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1
    000
    link/ether 08:00:27:d0:94:7b brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.101/24 brd 192.168.56.255 scope global enp0s9
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fed0:947b/64 scope link
        valid_lft forever preferred_lft forever
root@debianstretch:~# _
```

Fedora:

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
[root@fedora28-srv ~]# nmcli connection show
NAME                UUID                                  TYPE      DEVICE
Połączenie przewodowe 1 8e2331cd-5965-3590-b3d6-1bd9c1ef9a45 ethernet  enp0s9
enp0s3               4eb23d96-4568-3ddb-bc52-f16517277965 ethernet  enp0s3
enp0s8               576d9f86-0808-3c7a-a149-06d7fd825276 ethernet  enp0s8
[root@fedora28-srv ~]# nmcli connection modify Połączenie\ przewodowe\ 1 con-name enp0s9
[root@fedora28-srv ~]# nmcli connection show
NAME                UUID                                  TYPE      DEVICE
enp0s3               4eb23d96-4568-3ddb-bc52-f16517277965 ethernet  enp0s3
enp0s8               576d9f86-0808-3c7a-a149-06d7fd825276 ethernet  enp0s8
enp0s9               8e2331cd-5965-3590-b3d6-1bd9c1ef9a45 ethernet  enp0s9
[root@fedora28-srv ~]# nmcli connection modify enp0s3 ipv4.method
auto          disabled  link-local manual  shared
[root@fedora28-srv ~]# nmcli connection modify enp0s3 ipv4.method auto
[root@fedora28-srv ~]# nmcli connection modify enp0s3 ipv6.method auto
[root@fedora28-srv ~]# nmcli connection modify enp0s9 ipv6.method auto
[root@fedora28-srv ~]# nmcli connection modify enp0s9 ipv4.method auto
[root@fedora28-srv ~]# nmcli connection modify enp0s8 ipv4.addresses 172.30.10.20/24 192.168.190.20/
24
Błąd: nieprawidłowe lub niedozwolone ustawienie „192”: „192” nie jest w [connection, 802-3-ethernet
(ethernet), 802-1x, dcb, ipv4, ipv6, tc, proxy].
[root@fedora28-srv ~]# nmcli connection modify enp0s8 ipv4.addresses 172.30.10.20/24
[root@fedora28-srv ~]# nmcli connection modify enp0s8 ipv4.addresses +192.168.190.20/24
Błąd: zmodyfikowanie ipv4.addresses się nie powiodło: nieprawidłowy adres IP: Nieprawidłowy adres IP
v4 „+192.168.190.20”.
[root@fedora28-srv ~]# nmcli connection modify enp0s8 +ipv4.addresses 192.168.190.20/24
[root@fedora28-srv ~]# nmcli connection up enp0s3
Pomyślnie aktywowano połączenie (ścieżka aktywacji D-Bus: /org/freedesktop/NetworkManager/ActiveConn
ection/4)
[root@fedora28-srv ~]# nmcli connection up enp0s8
Pomyślnie aktywowano połączenie (ścieżka aktywacji D-Bus: /org/freedesktop/NetworkManager/ActiveConn
ection/5)
[root@fedora28-srv ~]# nmcli connection up enp0s9
Pomyślnie aktywowano połączenie (ścieżka aktywacji D-Bus: /org/freedesktop/NetworkManager/ActiveConn
ection/6)
[root@fedora28-srv ~]# nmcli connection reload
[root@fedora28-srv ~]#
```

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:ab:92:a7 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 forever preferred_lft forever
    inet 10.0.2.25/24 brd 10.0.2.255 scope global secondary noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fc00::20/64 scope global noprefixroute
        valid_lft forever preferred_lft forever
    inet6 fe80::ac75:dd08:3478:c606/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:d5:98:41 brd ff:ff:ff:ff:ff:ff
    inet 172.30.10.20/24 brd 172.30.10.255 scope global noprefixroute enp0s8
        valid_lft forever preferred_lft forever
    inet 192.168.190.20/24 brd 192.168.190.255 scope global noprefixroute enp0s8
        valid_lft forever preferred_lft forever
    inet6 fd00::23/64 scope global noprefixroute
        valid_lft forever preferred_lft forever
    inet6 fd00::22/64 scope global noprefixroute
        valid_lft forever preferred_lft forever
    inet6 fd00::21/64 scope global noprefixroute
        valid_lft forever preferred_lft forever
    inet6 fd00::20/64 scope global noprefixroute
        valid_lft forever preferred_lft forever
    inet6 fe80::169b:733d:4214:a9f0/64 scope link
        valid_lft forever preferred_lft forever
4: enp0s9: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:fe:b4:a2 brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.103/24 brd 192.168.56.255 scope global dynamic noprefixroute enp0s9
        valid_lft 441sec preferred_lft 441sec
    inet6 fe80::1bcc:3c3:662a:8966/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[root@fedora28-srv ~]#
```

Testowanie połączenia:

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
1 Plik Maszyna Widok Wejście Urządzenia Pomoc
[root@fedora28-srv ~]# ping www.google.com
PING www.google.com (142.250.203.132) 56(84) bytes of data.
64 bytes from waw07s06-in-f4.1e100.net (142.250.203.132): icmp_seq=1 ttl=120 time=11.4 ms
64 bytes from waw07s06-in-f4.1e100.net (142.250.203.132): icmp_seq=2 ttl=120 time=7.14 ms
^C
--- www.google.com ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1000ms
rtt min/avg/max/mdev = 7.149/9.321/11.493/2.172 ms
[root@fedora28-srv ~]# ping 172.30.10.10
PING 172.30.10.10 (172.30.10.10) 56(84) bytes of data.
64 bytes from 172.30.10.10: icmp_seq=1 ttl=64 time=0.767 ms
64 bytes from 172.30.10.10: icmp_seq=2 ttl=64 time=0.493 ms
^C
--- 172.30.10.10 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1043ms
rtt min/avg/max/mdev = 0.493/0.630/0.767/0.137 ms
[root@fedora28-srv ~]# ping 192.168.190.10
PING 192.168.190.10 (192.168.190.10) 56(84) bytes of data.
64 bytes from 192.168.190.10: icmp_seq=1 ttl=64 time=0.660 ms
64 bytes from 192.168.190.10: icmp_seq=2 ttl=64 time=0.322 ms
^C
--- 192.168.190.10 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1063ms
rtt min/avg/max/mdev = 0.322/0.491/0.660/0.169 ms
[root@fedora28-srv ~]# ping 192.168.56.101
PING 192.168.56.101 (192.168.56.101) 56(84) bytes of data.
64 bytes from 192.168.56.101: icmp_seq=1 ttl=64 time=0.735 ms
64 bytes from 192.168.56.101: icmp_seq=2 ttl=64 time=0.447 ms
^C
--- 192.168.56.101 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1005ms
rtt min/avg/max/mdev = 0.447/0.591/0.735/0.144 ms
[root@fedora28-srv ~]# _
```

## Zadanie 2

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
hosts [----] 29 L: [ 1+ 4 5/ 5] *(217 / 218b) 0107 0x06B [*][X]
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
172.30.10.10 debian1_Terelak
192.168.190.10 debian2_Terelak
```

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
[root@fedora28-srv ~]# ping debian1_Terelak
PING debian1_Terelak (172.30.10.10) 56(84) bytes of data.
64 bytes from debian1_Terelak (172.30.10.10): icmp_seq=1 ttl=64 time=0.445 ms
64 bytes from debian1_Terelak (172.30.10.10): icmp_seq=2 ttl=64 time=0.395 ms
^C
--- debian1_Terelak ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 0.395/0.420/0.445/0.025 ms
[root@fedora28-srv ~]# ping debian2_Terelak
PING debian2_Terelak (192.168.190.10) 56(84) bytes of data.
64 bytes from debian2_Terelak (192.168.190.10): icmp_seq=1 ttl=64 time=0.410 ms
64 bytes from debian2_Terelak (192.168.190.10): icmp_seq=2 ttl=64 time=0.453 ms
^C
--- debian2_Terelak ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 0.410/0.431/0.453/0.029 ms
[root@fedora28-srv ~]#
```

## Zadanie 3

```
Debian 9 - Stretch Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
/etc/ssh/sshd_config [----] 7 L: [ 1+12 13/124] *(466 /3281b) 0010 0x00A
#<----->$OpenBSD: sshd_config,v 1.100 2016/08/15 12:32:04 naddy Exp $

# This is the sshd server system-wide configuration file. See
# sshd_config(5) for more information.

# This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented. Uncommented options override the
# default value.

Port 24_
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::

#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key

# Ciphers and keying
#RekeyLimit default none

# Logging
#SyslogFacility AUTH
#LogLevel INFO

# Authentication:

#LoginGraceTime 2m
PermitRootLogin no
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10
1Pomoc 2Zapisz 3Zaznacz 4Zastap
```

```
Debian 9 - Stretch Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
root@debianstretch:~# adduser radoslawterelak
Dodawanie użytkownika "radoslawterelak"...
Dodawanie nowej grupy "radoslawterelak" (1002)...
Dodawanie nowego użytkownika "radoslawterelak" (1002) w grupie "radoslawterelak"...
Tworzenie katalogu domowego "/home/radoslawterelak"...
Kopiowanie plików z "/etc/skel" ...
Proszę podać nowe hasło UNIX:
Proszę ponownie podać hasło UNIX:
passwd: hasło zostało zmienione
Zmieniam informację o użytkowniku radoslawterelak
Wpisz nową wartość lub wciśnij ENTER by przyjąć wartość domyślną
Imię i nazwisko []:
Numer pokoju []:
Telefon do pracy []:
Telefon domowy []:
Inne []:
Czy informacja jest poprawna? [T/n] t
root@debianstretch:~#
```

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
[root@fedora28-srv ~]# ssh -p 24 radoslawterelak@debian1_Terelak
The authenticity of host '[debian1_terelak]:24 ([172.30.10.10]:24)' can't be established.
ECDSA key fingerprint is SHA256:98hIFGTcoDoH1Sir0lYlvpP1KogSvqcr+6aSEZxfp24.
ECDSA key fingerprint is MD5:77:e3:6f:d8:3f:26:b0:84:2c:b7:a2:79:4e:06:47:89.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '[debian1_terelak]:24,[172.30.10.10]:24' (ECDSA) to the list of known hos
ts.
radoslawterelak@debian1_terelak's password:
Linux debianstretch 4.9.0-3-amd64 #1 SMP Debian 4.9.30-2+deb9u3 (2017-08-06) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
radoslawterelak@debianstretch:~$ su root
Hasło:
root@debianstretch:/home/radoslawterelak#
```

```
Fedora 28_Terelak [Uruchomiona] - Oracle VM VirtualBox
Plik Maszyna Widok Wejście Urządzenia Pomoc
[root@fedora28-srv ~]# ssh -p 24 root@debian1_Terelak
root@debian1_terelak's password:
Permission denied, please try again.
root@debian1_terelak's password:
C2Permission denied, please try again.
root@debian1_terelak's password: _
```

```

root@radoslawterelak@debianstretch: /home/user
login as: radoslawterelak
radoslawterelak@192.168.56.101's password:
Linux debianstretch 4.9.0-3-amd64 #1 SMP Debian 4.9.30-2+deb9u3 (2017-08-06) x86_64


The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.

Last login: Wed Dec 15 18:16:04 2021 from 172.30.10.20
radoslawterelak@debianstretch:~$ cd /home/user/

```


```
000 link/ether 08:00:27:90:d6:f8 brd ff:ff:ff:ff:ff:ff
    inet 172.16.0.10/24 brd 172.16.0.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet 172.30.10.10/24 brd 172.30.10.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet 192.168.190.10/24 brd 192.168.190.255 scope global enp0s8:1
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe90:d6f8/64 scope link
        valid_lft forever preferred_lft forever
4: enp0s9: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1
000 link/ether 08:00:27:90:d4:7b brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.101/24 brd 192.168.56.255 scope global enp0s9
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fed0:947b/64 scope link
        valid_lft forever preferred_lft forever
root@debianstretch:~# _
```



Fedora 28\_Terelak [Uruchomiona] - Oracle VM VirtualBox

1 Plik Maszyna Widok Wejście Urządzenia Pomoc

```
[root@fedora28-srv user1]# echo "Radosław Terelak 4G" > dokument_Terelak.txt
[root@fedora28-srv user1]# cat dokument_Terelak.txt
Radosław Terelak 4G
[root@fedora28-srv user1]# _
```



Nazwa	Rozmiar	Czas	modyf i
.bash_history	13	15.12	18:17
.bash_logout	228	15.12	18:06
.bashrc	3526	15.12	18:06
.profile	675	15.12	18:06
dokument_Terelak.txt	21	15.12	18:25

```
Debian 9 - Stretch Terelak [Uruchomiona] - Oracle VM VirtualBox
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Plik Maszyna Widok Wejście Urządzenia Pomoc

```
root@debianstretch:~# cd /home/radoslawterelak
root@debianstretch:/home/radoslawterelak# ls
dokument_Terelak.txt
root@debianstretch:/home/radoslawterelak# cat dokument_Terelak.txt
Radosław Terelak 4G
root@debianstretch:/home/radoslawterelak#
```