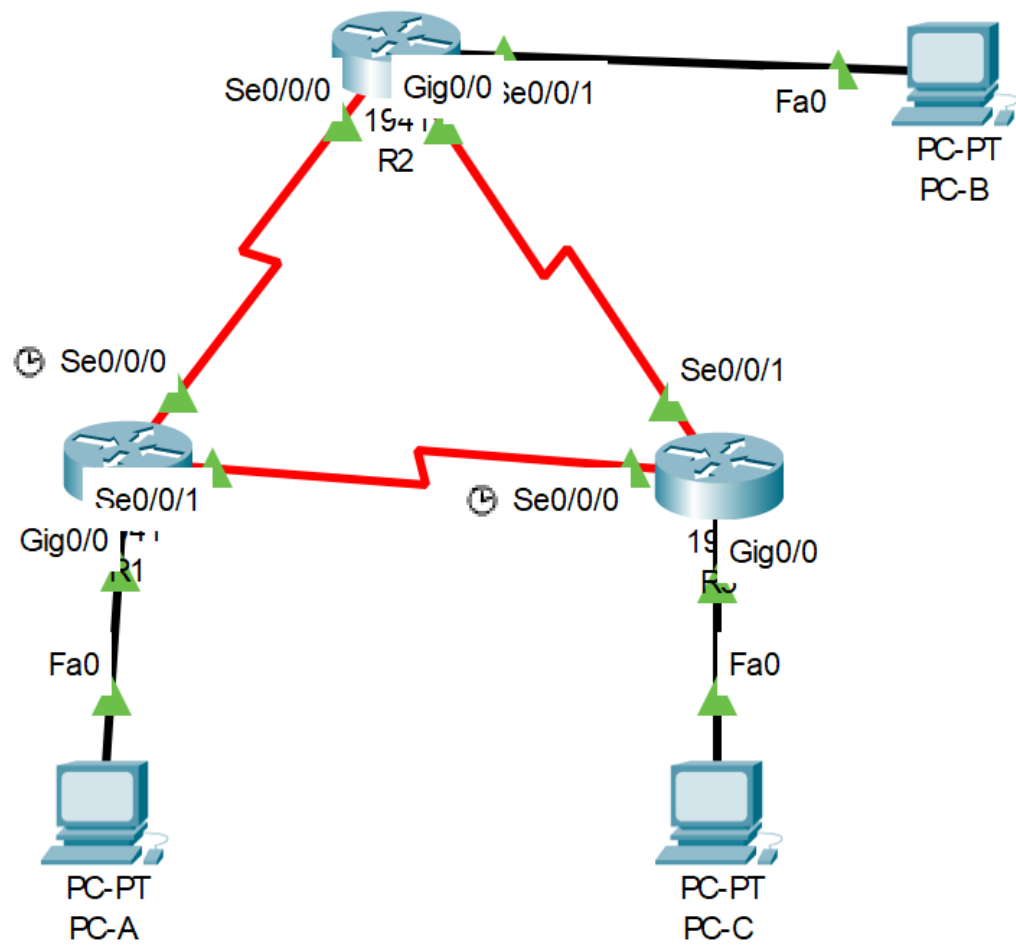


Zadanie 10.2.3.3

Mateusz Krzyżostanek, 64989, INIS5_FD

Sprawdzanie problemów z OSPFv2 i OSPFv3

Topologia



Ping IPv4

```
PC-A
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

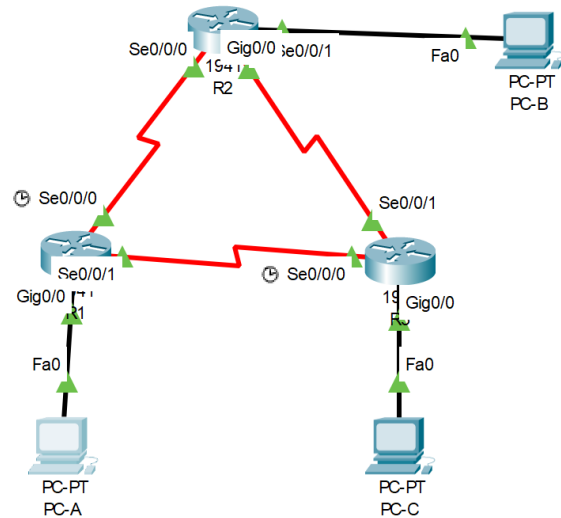
Request timed out.
Reply from 192.168.2.3: bytes=32 time=12ms TTL=126
Reply from 192.168.2.3: bytes=32 time=10ms TTL=126
Reply from 192.168.2.3: bytes=32 time=7ms TTL=126

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 12ms, Average = 9ms
C:\>ping 192.168.3.3

Pinging 192.168.3.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.3: bytes=32 time=12ms TTL=126
Reply from 192.168.3.3: bytes=32 time=8ms TTL=126
Reply from 192.168.3.3: bytes=32 time=5ms TTL=126

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 12ms, Average = 8ms
C:\>
```



```
PC-B
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

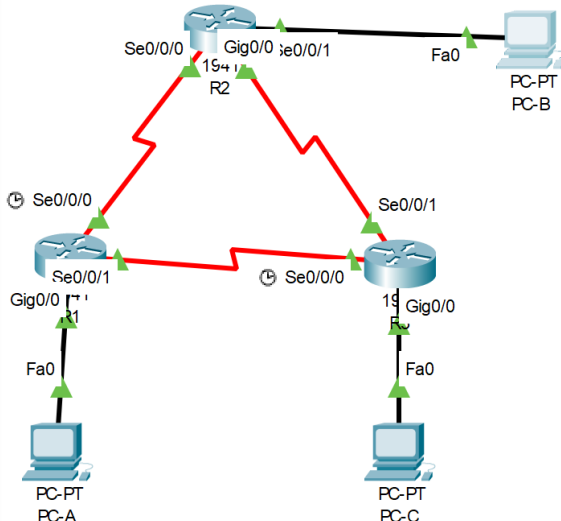
Reply from 192.168.1.3: bytes=32 time=8ms TTL=126
Reply from 192.168.1.3: bytes=32 time=5ms TTL=126
Reply from 192.168.1.3: bytes=32 time=5ms TTL=126
Reply from 192.168.1.3: bytes=32 time=15ms TTL=126

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 21ms, Average = 13ms
C:\>ping 192.168.3.3

Pinging 192.168.3.3 with 32 bytes of data:

Reply from 192.168.3.3: bytes=32 time=8ms TTL=126
Reply from 192.168.3.3: bytes=32 time=14ms TTL=126
Reply from 192.168.3.3: bytes=32 time=24ms TTL=126
Reply from 192.168.3.3: bytes=32 time=7ms TTL=126

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 24ms, Average = 13ms
C:\>
```



```
PC-C
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

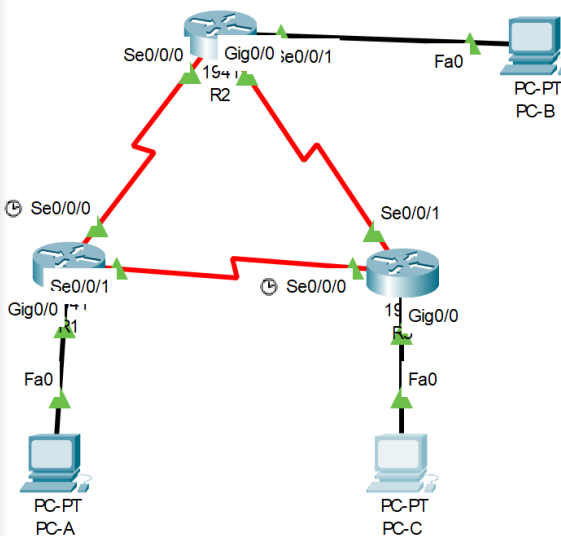
Reply from 192.168.1.3: bytes=32 time=8ms TTL=126
Reply from 192.168.1.3: bytes=32 time=4ms TTL=126
Reply from 192.168.1.3: bytes=32 time=5ms TTL=126
Reply from 192.168.1.3: bytes=32 time=16ms TTL=126

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 16ms, Average = 8ms
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time=9ms TTL=126
Reply from 192.168.2.3: bytes=32 time=6ms TTL=126
Reply from 192.168.2.3: bytes=32 time=7ms TTL=126
Reply from 192.168.2.3: bytes=32 time=5ms TTL=126

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 9ms, Average = 6ms
C:\>
```

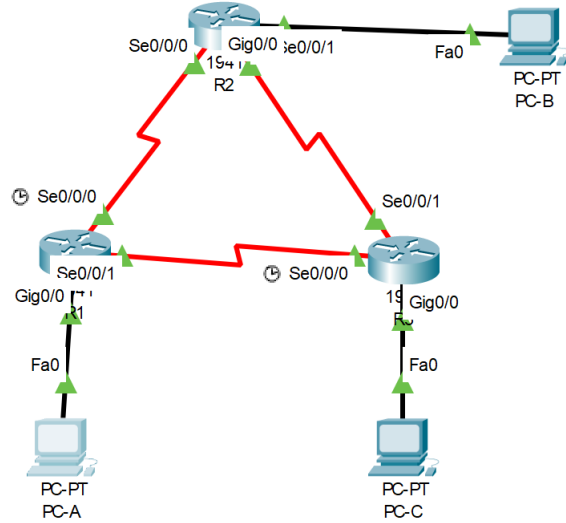


Ping IPv6

```

PC-A
Physical Config Desktop Programming Attributes
Command Prompt
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ping 2001:db8:acad:b::b
C:\>
Pinging 2001:db8:acad:b::b with 32 bytes of data:
Reply from 2001:db8:acad:b::b: bytes=32 time=9ms TTL=126
Reply from 2001:db8:acad:b::b: bytes=32 time=7ms TTL=126
Reply from 2001:db8:acad:b::b: bytes=32 time=9ms TTL=126
Reply from 2001:db8:acad:b::b: bytes=32 time=13ms TTL=126
Ping statistics for 2001:db8:acad:b::b:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 13ms, Average = 9ms
C:\>ping 2001:db8:acad:c::c
C:\>
Pinging 2001:db8:acad:c::c with 32 bytes of data:
Reply from 2001:db8:acad:c::c: bytes=32 time=7ms TTL=126
Reply from 2001:db8:acad:c::c: bytes=32 time=6ms TTL=126
Reply from 2001:db8:acad:c::c: bytes=32 time=9ms TTL=126
Reply from 2001:db8:acad:c::c: bytes=32 time=9ms TTL=126
Ping statistics for 2001:db8:acad:c::c:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 9ms, Average = 6ms
C:\>

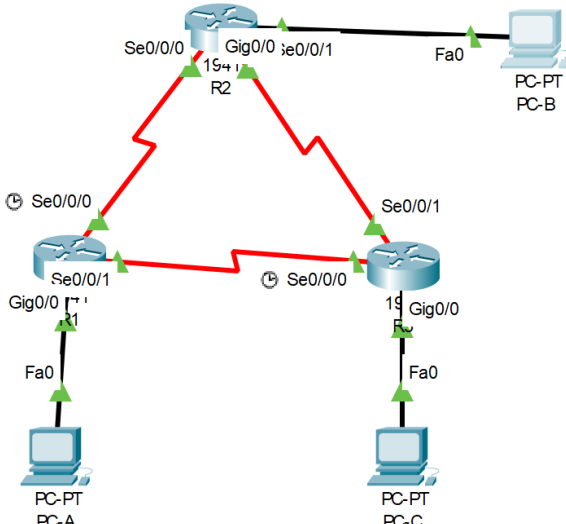
```



```

PC-B
Physical Config Desktop Programming Attributes
Command Prompt
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ping 2001:db8:acad:a::a
C:\>
Pinging 2001:db8:acad:a::a with 32 bytes of data:
Reply from 2001:db8:acad:a::a: bytes=32 time=6ms TTL=126
Reply from 2001:db8:acad:a::a: bytes=32 time=6ms TTL=126
Reply from 2001:db8:acad:a::a: bytes=32 time=6ms TTL=126
Reply from 2001:db8:acad:a::a: bytes=32 time=6ms TTL=126
Ping statistics for 2001:db8:acad:a::a:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 6ms, Average = 6ms
C:\>ping 2001:db8:acad:c::c
C:\>
Pinging 2001:db8:acad:c::c with 32 bytes of data:
Reply from 2001:db8:acad:c::c: bytes=32 time=3ms TTL=126
Reply from 2001:db8:acad:c::c: bytes=32 time=6ms TTL=126
Reply from 2001:db8:acad:c::c: bytes=32 time=10ms TTL=126
Reply from 2001:db8:acad:c::c: bytes=32 time=10ms TTL=126
Ping statistics for 2001:db8:acad:c::c:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 31ms, Average = 14ms
C:\>

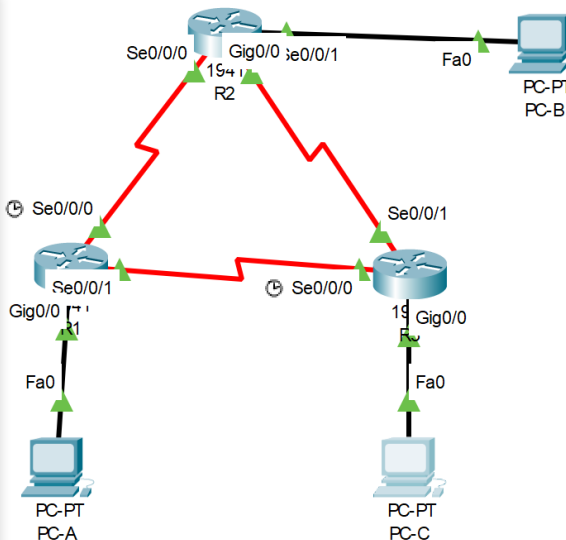
```



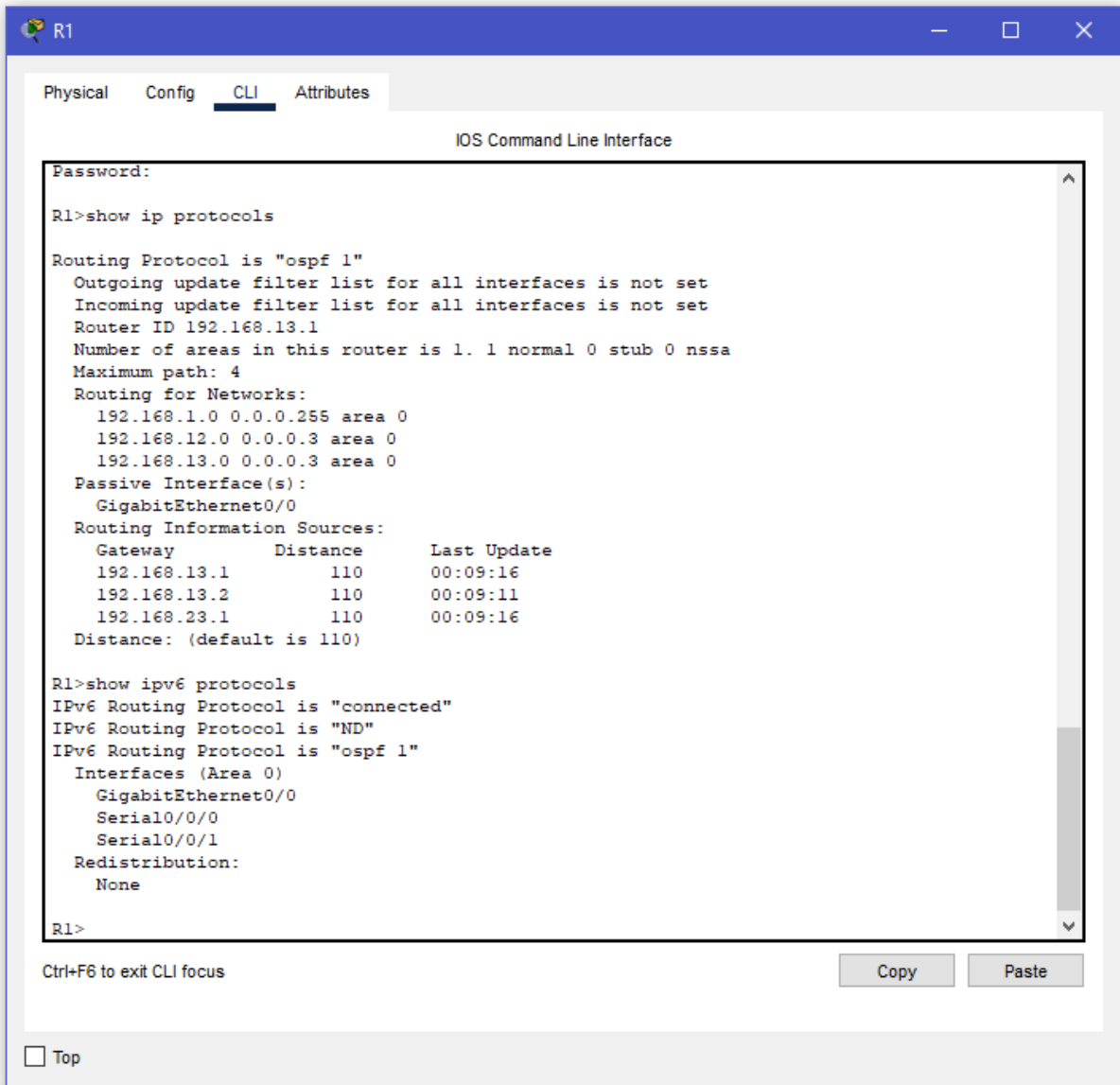
```

PC-C
Physical Config Desktop Programming Attributes
Command Prompt
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ping 2001:db8:acad:a::a
C:\>
Pinging 2001:db8:acad:a::a with 32 bytes of data:
Reply from 2001:db8:acad:a::a: bytes=32 time=3ms TTL=126
Reply from 2001:db8:acad:a::a: bytes=32 time=7ms TTL=126
Reply from 2001:db8:acad:a::a: bytes=32 time=9ms TTL=126
Reply from 2001:db8:acad:a::a: bytes=32 time=9ms TTL=126
Ping statistics for 2001:db8:acad:a::a:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 26ms, Average = 12ms
C:\>ping 2001:db8:acad:b::b
C:\>
Pinging 2001:db8:acad:b::b with 32 bytes of data:
Reply from 2001:db8:acad:b::b: bytes=32 time=10ms TTL=126
Reply from 2001:db8:acad:b::b: bytes=32 time=7ms TTL=126
Reply from 2001:db8:acad:b::b: bytes=32 time=6ms TTL=126
Reply from 2001:db8:acad:b::b: bytes=32 time=7ms TTL=126
Ping statistics for 2001:db8:acad:b::b:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 10ms, Average = 7ms
C:\>

```



Napotkane problemy



The screenshot shows a terminal window titled 'R1' with tabs for 'Physical', 'Config', 'CLI', and 'Attributes'. The 'CLI' tab is active, displaying the 'IOS Command Line Interface'. The user has entered the command 'show ip protocols', resulting in the following output:

```

Password:

R1>show ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 192.168.13.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.1.0 0.0.0.255 area 0
    192.168.12.0 0.0.0.3 area 0
    192.168.13.0 0.0.0.3 area 0
  Passive Interface(s):
    GigabitEthernet0/0
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.168.13.1      110          00:09:16
    192.168.13.2      110          00:09:11
    192.168.23.1      110          00:09:16
  Distance: (default is 110)

R1>show ipv6 protocols
IPv6 Routing Protocol is "connected"
IPv6 Routing Protocol is "ND"
IPv6 Routing Protocol is "ospf 1"
  Interfaces (Area 0)
    GigabitEthernet0/0
    Serial0/0/0
    Serial0/0/1
  Redistribution:
    None

R1>
```

At the bottom of the CLI window, there is a prompt 'Ctrl+F6 to exit CLI focus' and buttons for 'Copy' and 'Paste'. A 'Top' button is also visible at the very bottom of the window.

Po wstępnej konfiguracji router R1 był ustawiony poprawnie. Dojście do tego, aby pozostałe routery dzieliły jego konfigurację wymagało kilku dodatkowych poleceń.

```

ipv6 unicast-routing
ipv6 route ospf 1
router-id [id]
passive-interface g0/0
```

Nie były w pełni zrealizowane na R2 i R3, prowadząc do niekompletnych podwalin pod routing IPv6. Dodatkowo, w przeciwieństwie do routingu w przestrzeni IPv4 przynależność do OSPF jest ustawiana w konfiguracji interfejsu, a nie routingu, co wymagało dodatkowego przejścia przez wadliwie skonfigurowane interfejsy routerów R2 i R3.

```

interface s0/0/0 | oraz | interface s0/0/1
ipv6 ospf 1 area 0
```

Oprócz tego jedyne napotkane problemy to drobne rozbieżności w adresach IP, które łatwo było zauważyć na poziomie wpisywania komend. Zastosowano typową składnię.

```
interface [nazwa]

ip address [adres] [maska]

ipv6 address [adres]/[maska skrócona]

no shutdown
```

W tym korku przydatna była tabela adresów z zadania oraz szybki podgląd urządzeń z poziomu Packet Tracer.

Device Name: R2						
Device Model: 1941						
Hostname: R2						
Port	Link	VLAN	IP Address	IPv6 Address	MAC Address	
GigabitEthernet0/0	Up	--	192.168.2.1/24	2001:DB8:ACAD:B::2/64	000C.CF9B.5C01	
GigabitEthernet0/1	Down	--	<not set>	<not set>	000C.CF9B.5C02	
Serial0/0/0	Up	--	192.168.12.2/30	2001:DB8:ACAD:12::2/64	<not set>	
Serial0/0/1	Up	--	192.168.23.1/30	2001:DB8:ACAD:23::2/64	<not set>	
Vlan1	Down	1	<not set>	<not set>	0001.43D1.E652	
Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > R2						

