

# LABORATORIUM SIECI KOMPUTEROWYCH

**Data wykonania  
ćwiczenia:**

08.06.2023

**Rok studiów:**

2

**Semestr:**

4

**Grupa studencka:**

2

**Grupa laboratoryjna:**

2B

**Ćwiczenie nr.**

15

**Temat:** Zadanie podsumowujące umiejętności

**Osoby wykonujące ćwiczenia:**

1. Igor Gawłowicz


Katedra Informatyki i Automatyki

Urządzenie	Interfejs	Adres IP/Prefiks	Brama domyślna
R1	G0/0	192.168.0.1/25	nd.
		2001:db8:acad::1/64	
		fe80::1	
	G0/1	192.168.0.129/26	nd.
		2001:db8:acad:1::1/64	
		fe80::1	
	G0/2	192.168.0.193/27	nd.
		2001:db8:acad:2::1/64	
		fe80::1	
Central	S0/0/1	172.16.1.2 /30	nd.
		2001:db8:2::1/64	
		fe80::1	
	S0/0/0	209.165.200.226 /30	nd.
		2001:db8:1::1/64	
		fe80::2	
	S0/0/1	172.16.1.1 /30	nd.
		2001:db8:2::2/64	
		fe80::2	
S1	VLAN 1	192.168.0.2/25	192.168.0.1
S2	VLAN 1	192.168.0.130/26	192.168.0.129
S3	VLAN 1	192.168.0.194/27	192.168.0.193
Staff	Karta sieciowa	192.168.0.3/25	192.168.0.1
		2001:db8:acad::2/64	fe80::1
		fe80::2	
Sales	Karta sieciowa	192.168.0.195/27	192.168.0.129
		2001:db8:acad:1::2/64	fe80::1
		fe80::2	
IT	Karta sieciowa	192.168.0.195/27	
		2001:db8:acad:2::2/64	fe80::1
		fe80::2	

Urządzenie	Interfejs	Adres IP/Prefiks	Brama domyślna
Web	Karta sieciowa	64.100.0.3/29	64.100.0.1
		2001:db8:cafe::3/64	fe80::1
		fe80::2	

192.168.0.0/24	Adres IP	Maska	Adres rozgłoszeniowy
staff 100 hostow	192.168.0.0	255.255.255.128	192.168.0.127
sales 50 hostow	192.168.0.128	255.255.255.192	192.168.0.191
IT 15 hostow	192.168.0.191	255.255.255.224	192.168.0.223

## Konfiguracja Staff

 Staff
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Desktop
 Programming

IP Configuration

Interface

FastEthernet0

IP Configuration

☐ DHCP
 ☒ Static

IPv4 Address

192.168.0.2

Subnet Mask

255.255.255.128

Default Gateway

192.168.0.1

DNS Server

64.100.0.2

IPv6 Configuration

☐ Automatic
 ☒ Static

IPv6 Address

2001:DB8:ACAD::2

/

64

Link Local Address

FE80::2

Default Gateway

FE80::1

DNS Server

2001:DB8:CAFE::2

## Konfiguracja Sales

Sales

Desktop Programming

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.0.132

Subnet Mask: 255.255.255.192

Default Gateway: 192.168.0.129

DNS Server: 64.100.0.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: 2001:DB8:ACAD:1::2 / 64

Link Local Address: FE80::2

Default Gateway: FE80::1

DNS Server: 2001:DB8:CAFE::2

## Konfiguracja IT

IT

Desktop Programming

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.0.195

Subnet Mask: 255.255.255.224

Default Gateway: 192.168.0.193

DNS Server: 64.100.0.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: 2001:DB8:ACAD:2::2 / 64

Link Local Address: FE80::2

Default Gateway: FE80::1

DNS Server: 2001:DB8:CAFE::2

## Konfiguracja R1

```

Router>enable
Password:
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#security passwords min-length 10
Router(config)#security passwords min-length 10
Router(config)#service password-encryption
Router(config)#banner motd #Nieautoryzowany dostp jest zabroniony!#
Router(config)#
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit

```

KONFIGURACJA ROUTERÓW :

```

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#line console 0
Router(config-line)#password Ciscoconpa55
Router(config-line)#login
Router(config-line)#exit

```

```

Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip address 192.168.0.129 255.255.255.192
Router(config-if)#no shutdown

```

```

Router(config-if)#ipv6 address 2001:db8:acad::1/64
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ipv6 address 2001:db8:acad:1::1/64
Router(config-if)#no shut down
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/2
Router(config-if)#ipv6 address 2001:db8:acad:2::1/64
Router(config-if)#no shutdown

```

## Konfiguracja SSH

```
Router(config)#hostname R1
R1(config)#crypto key generate rsa
The name for the keys will be: R1.CCNA-Lab.com
Choose the size of the key modulus in the range of 360 to 4096 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.
```

```
How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]
```

```
R1(config)#line vty 0 4
*Mar 1 6:42:24.104: %SSH-5-ENABLED: SSH 1.99 has been enabled
R1(config-line)#transport input sah
```

```
^
% Invalid input detected at '^' marker.
```

```
R1(config-line)#transport input ssh
R1(config-line)#login local
R1(config-line)#username Admin1 privilege 15 secret Admin1pa55
R1(config)#end
--
```

```
R1>enable
Password:
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#Ciscoconpa55
```

```
^
% Invalid input detected at '^' marker.
```

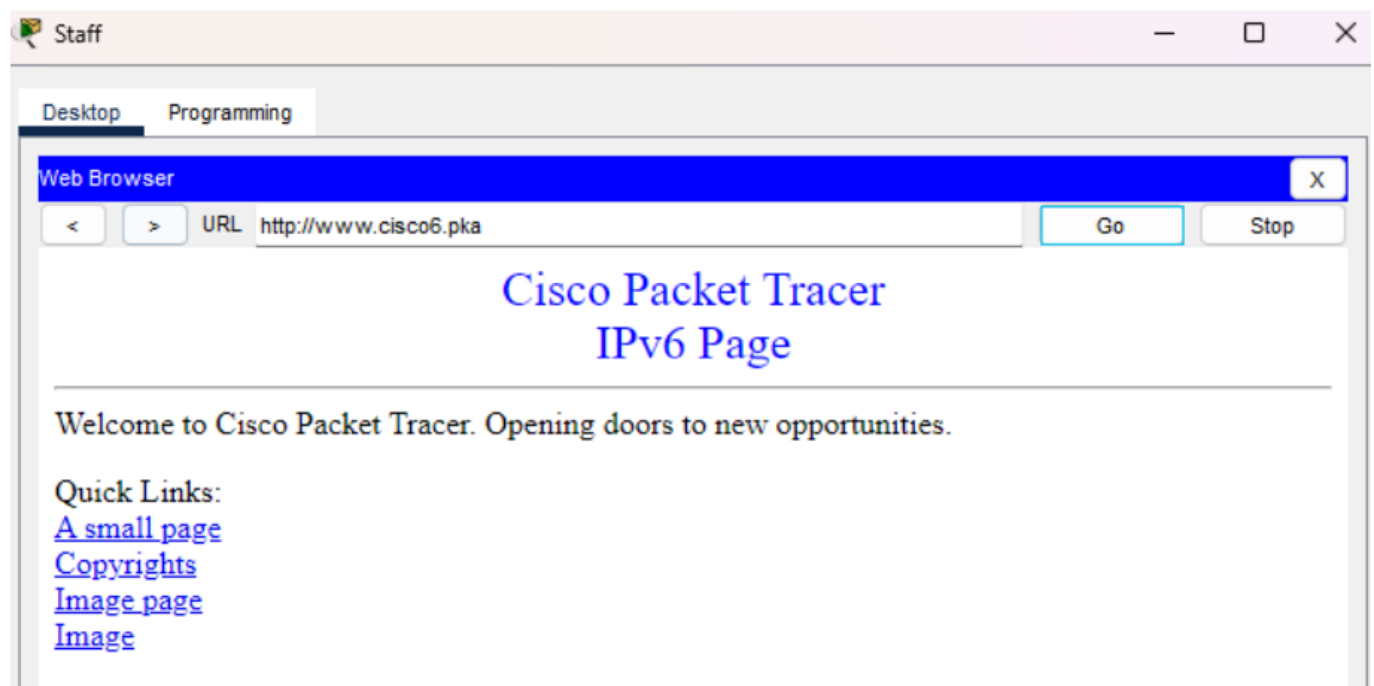
```
R1(config)#line console 0
R1(config-line)#exec-timeout 5
R1(config-line)#line vty 0 4
R1(config-line)#exec-timeout 5
```

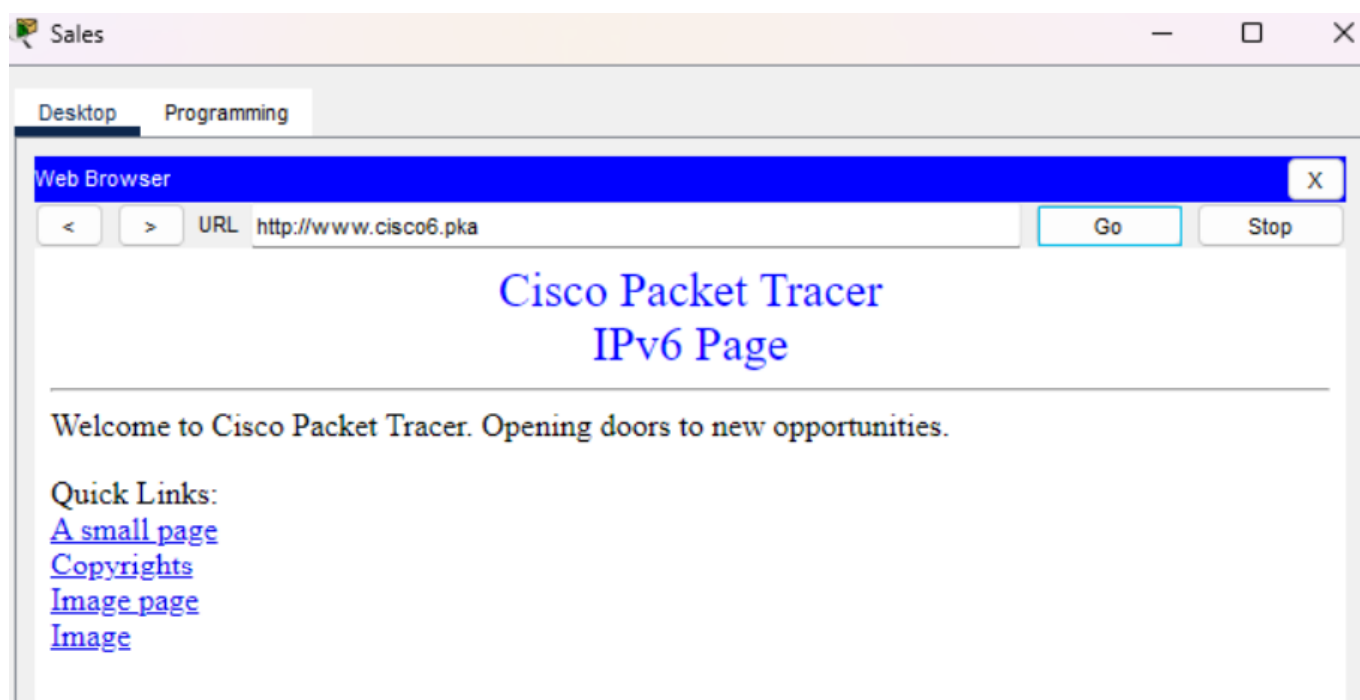
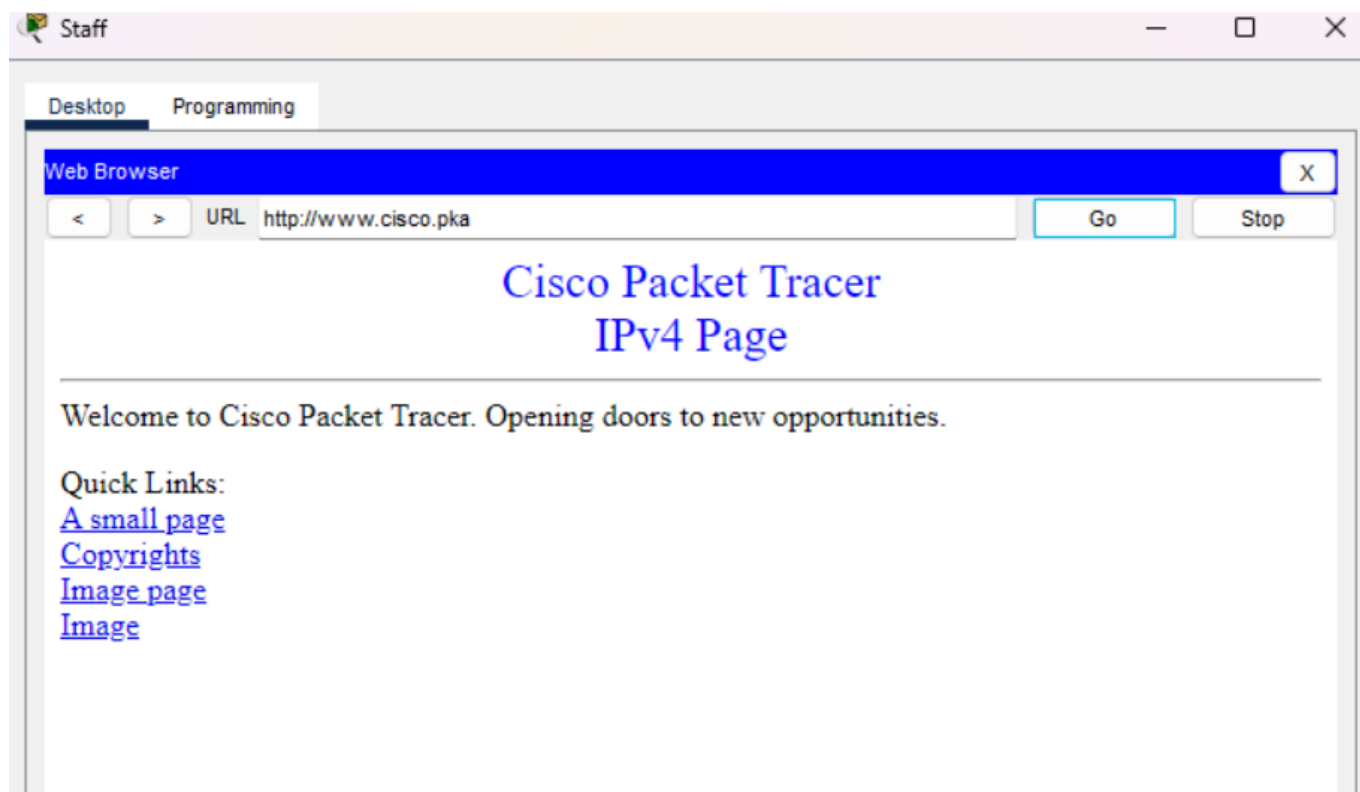
```
R1(config-line)#login block-for 180 attempts 4 within 120
R1(config)#end
R1#
```

Przykładowa konfiguracja switcha

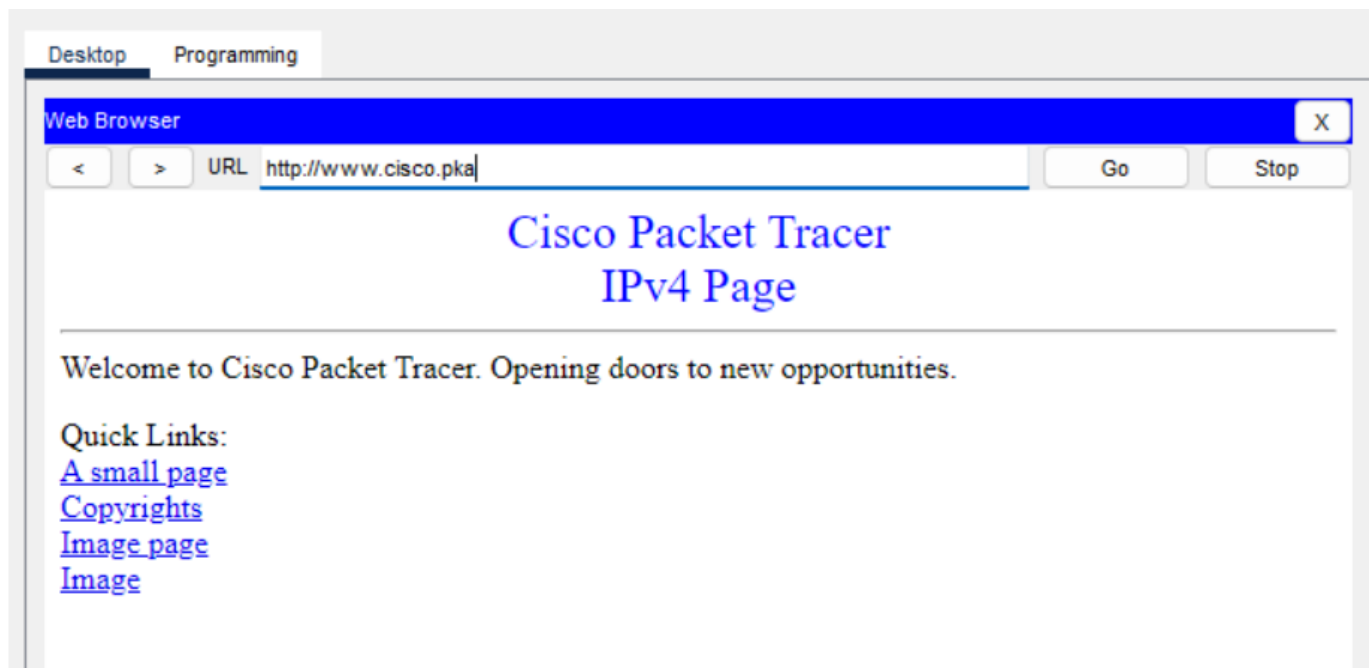
```
Switch(config)#hostname S3
S3(config)#interface VLAN1
S3(config-if)#ip address 192.168.0.194 255.255.255.224
S3(config-if)#ip default-gateway 192.168.0.193
S3(config)#no ip domain-lookup
S3(config)#enable secret Ciscoenpa55
S3(config)#line console 0
S3(config-line)#password Ciscoconpa55
S3(config-line)#login
S3(config-line)#line console 0
S3(config-line)#exec-timeout 5
S3(config-line)#line vty 0 4
S3(config-line)#exec-timeout 5
S3(config-line)#service password-encryption
S3(config)#end
```

Test połączenia









IT ping Staff

```
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Sales ping IT

```

Pinging 192.168.0.195 with 32 bytes of data:

Reply from 192.168.0.195: bytes=32 time<1ms TTL=127
Reply from 192.168.0.195: bytes=32 time<1ms TTL=127
Reply from 192.168.0.195: bytes=32 time<1ms TTL=127
Reply from 192.168.0.195: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.0.195:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

## Wynik

Score : 128/128

Item Count : 82/82

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Component	Items/Total	Score
Basic Device Configuration	17/17	17/17
Enhanced Login Security	9/9	9/9
IPv4 Host Addressing	6/6	12/12
IPv4 Host Default Gateway Configuration	3/3	9/9
IPv6 Host Addressing	9/9	9/9
Ip	3/3	3/3
Router Interface Configuration	3/3	3/3
Router Interface IPv4 Addressing	6/6	18/18
Router Interface IPv6 Addressing	9/9	9/9
SSH Configuration	5/5	6/6
Switch Management Interface Addressing	6/6	18/18
Switch Management Interface Configuration	3/3	3/3
Switch Management Interface Default Gateway	3/3	12/12