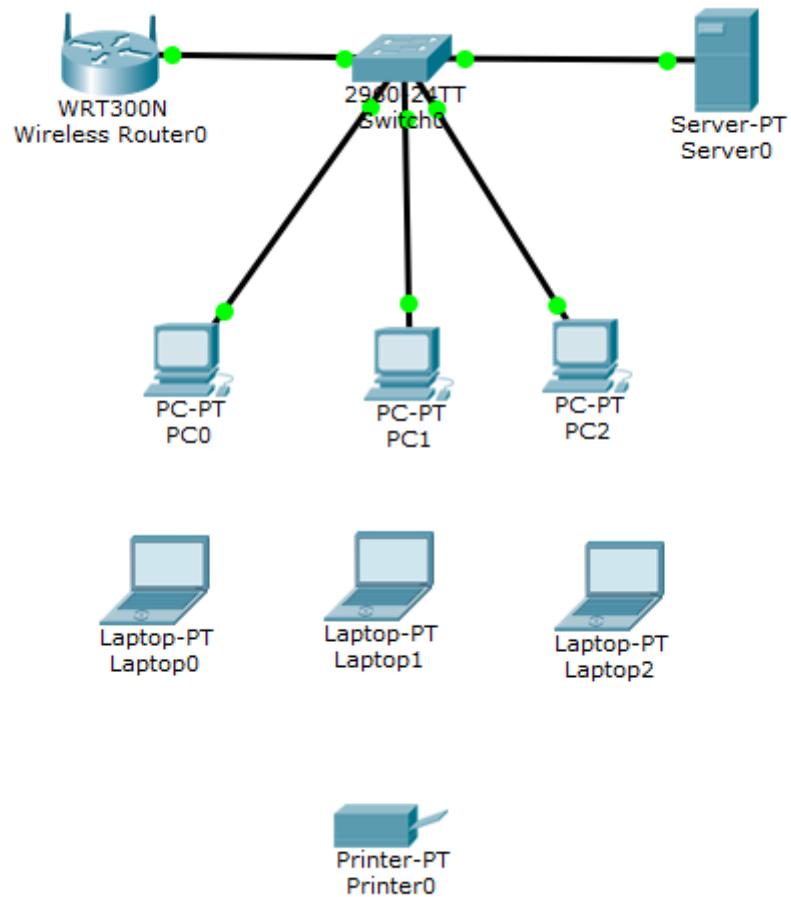


Sprawozdanie z wykonanego projektu.

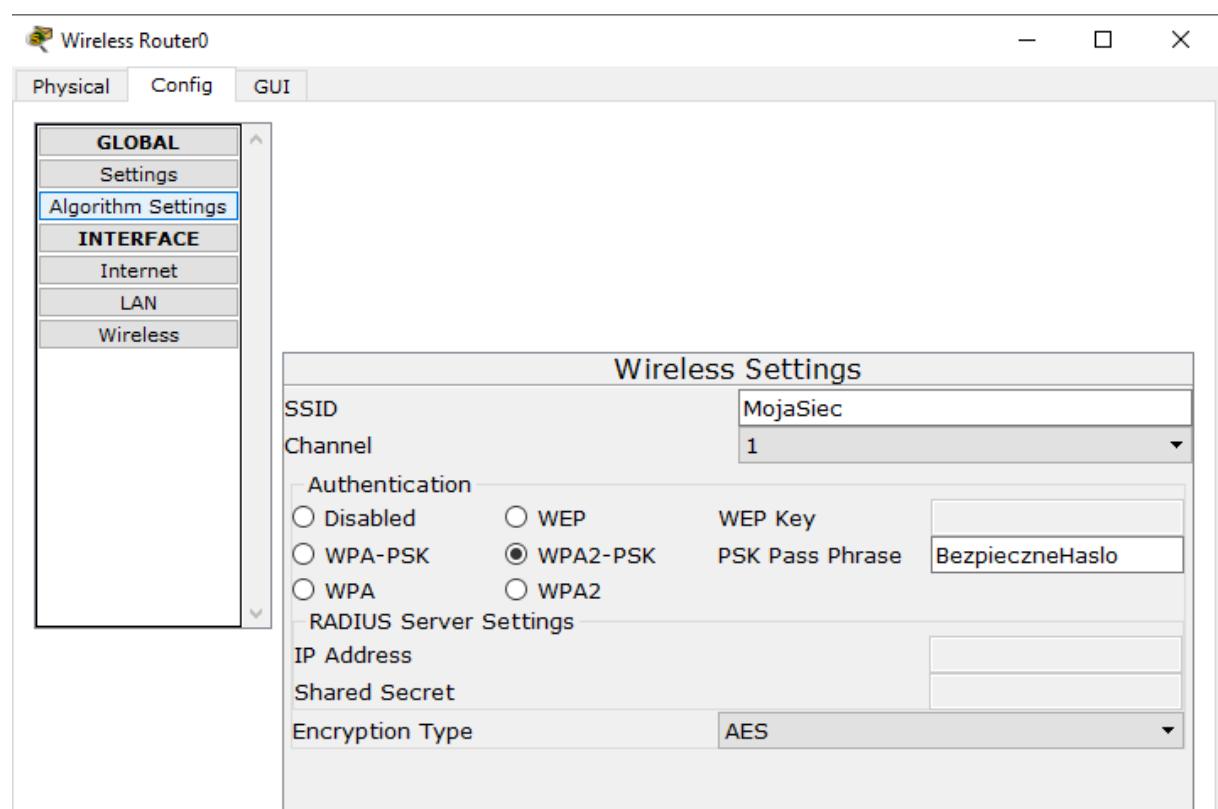
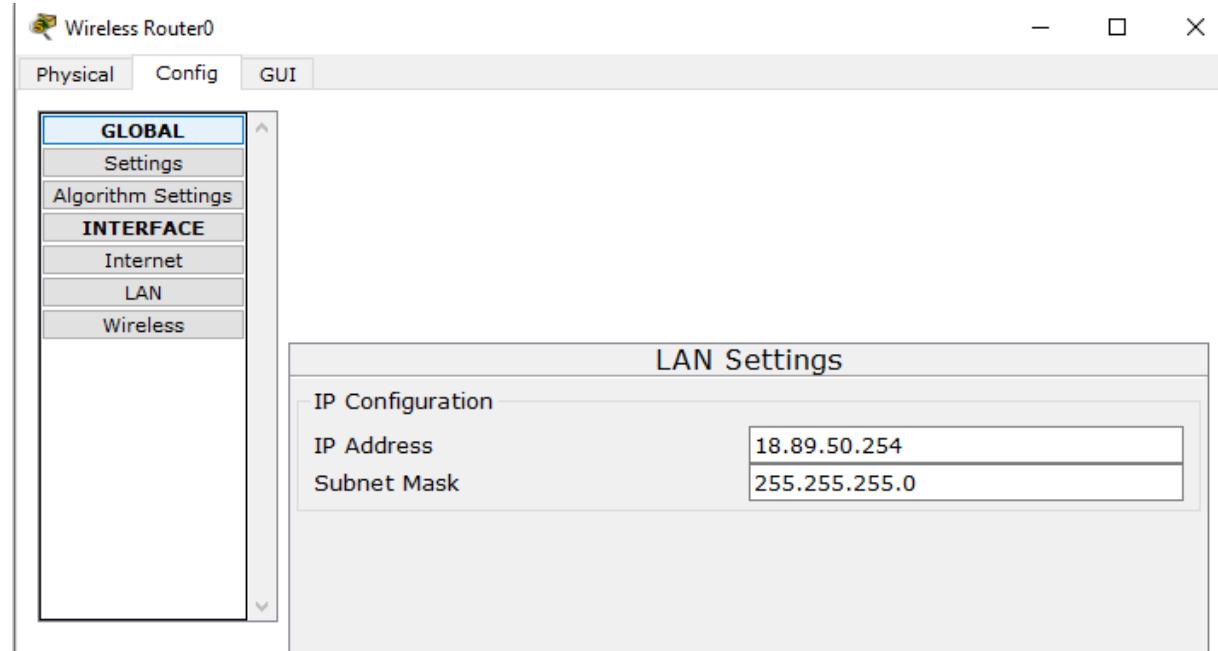
Na poniższym zdjęciu prezentuje projekt sieci (bez konfiguracji urządzeń). Laptopy oraz drukarka będą komunikować się bezprzewodowo po odpowiednim zainstalowaniu modułu Wi-Fi (zaprezentuje to w następnych krokach).



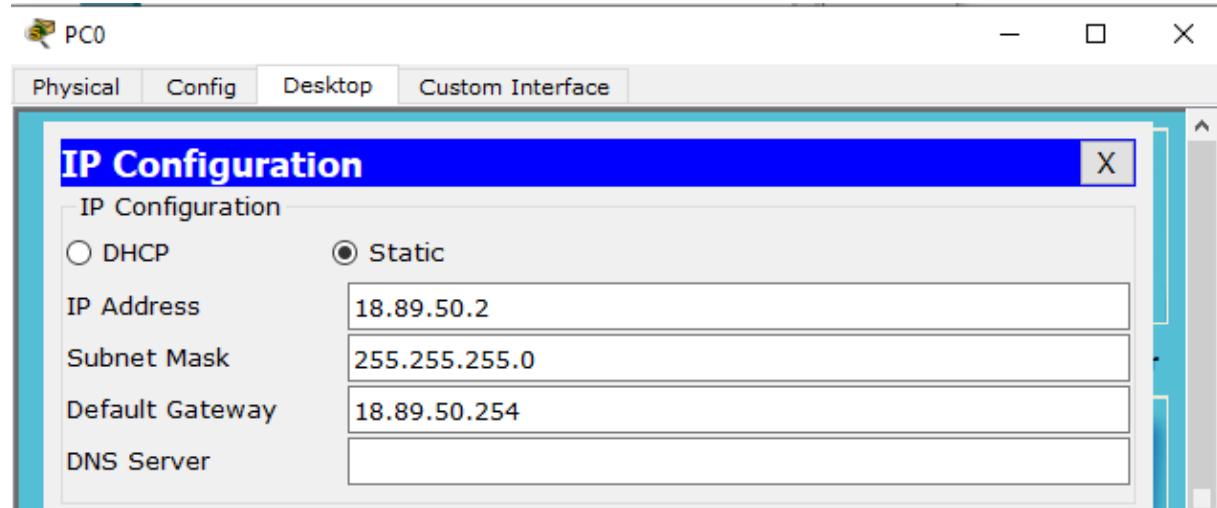
W tym kroku zapisuję adres IP oraz maskę mojego routera oraz ustawiam sieć bezprzewodową.

Nazwa sieci: MojaSiec

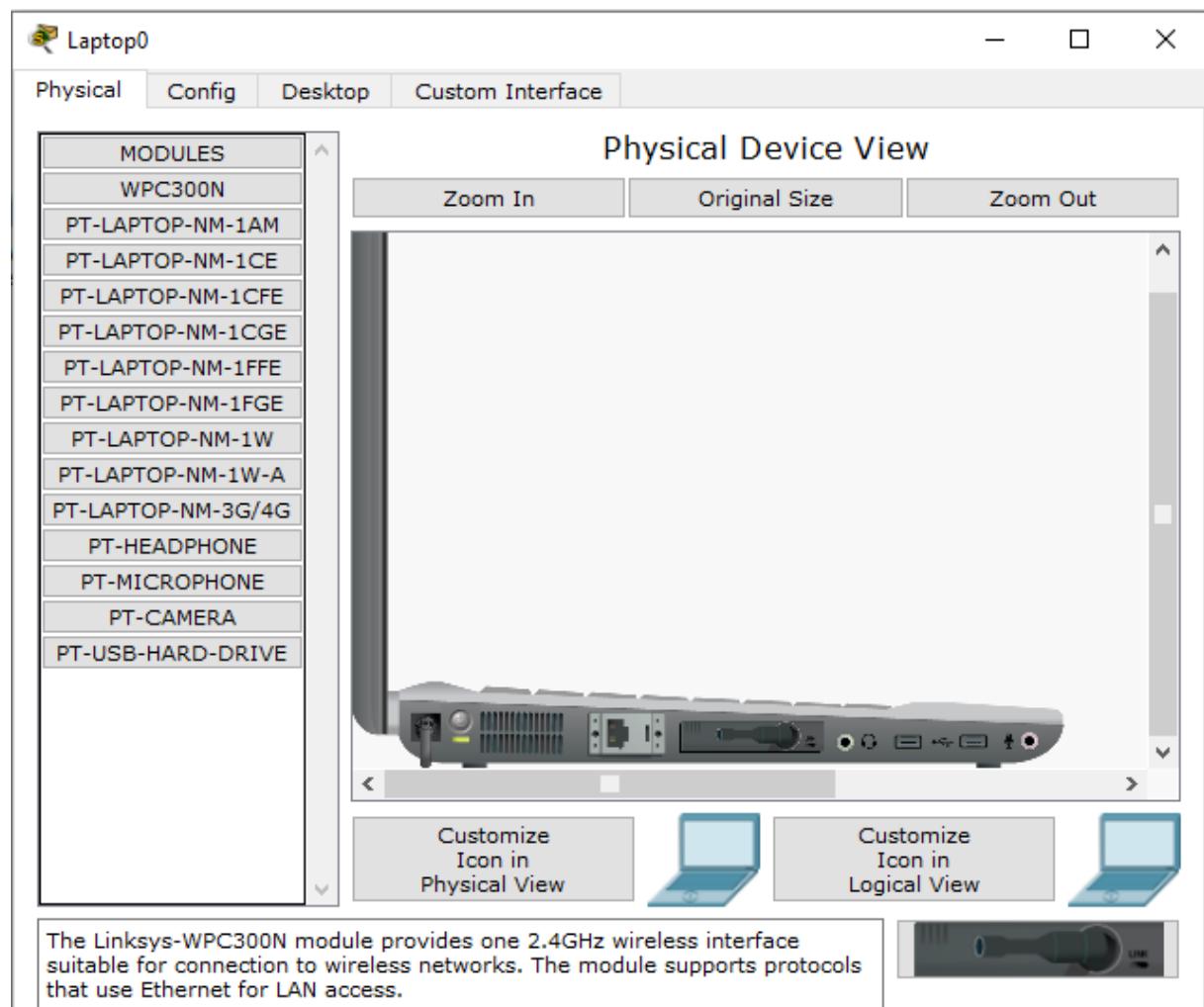
Hasło: BezpieczneHaslo



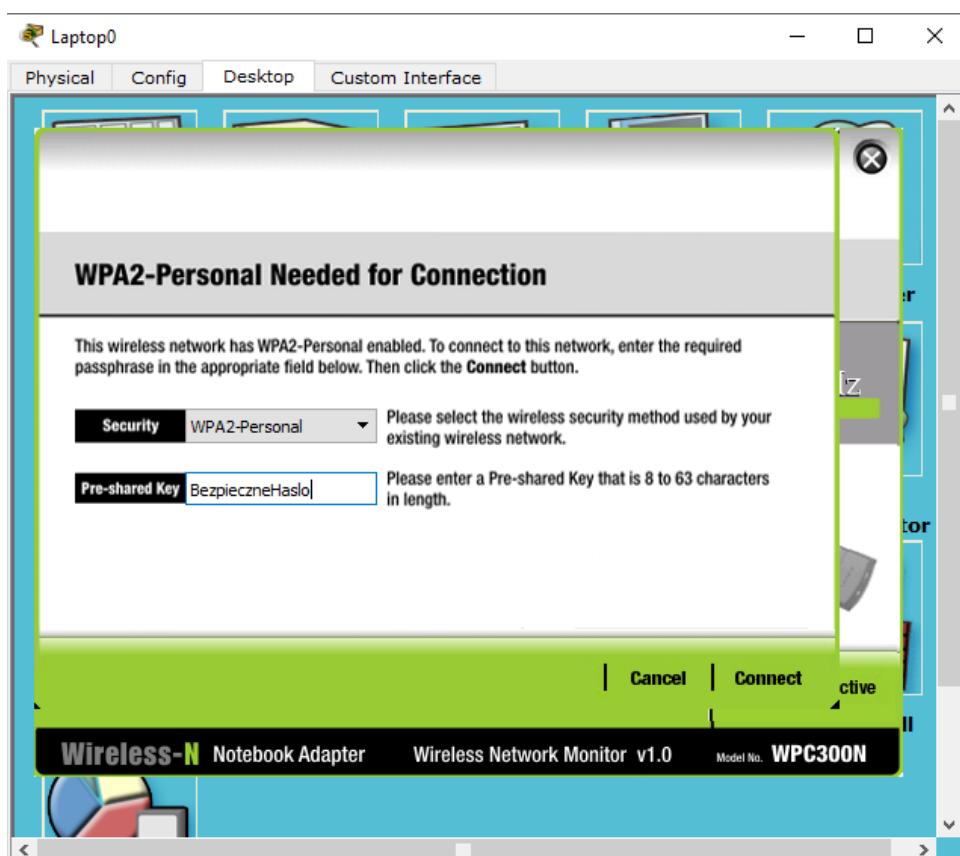
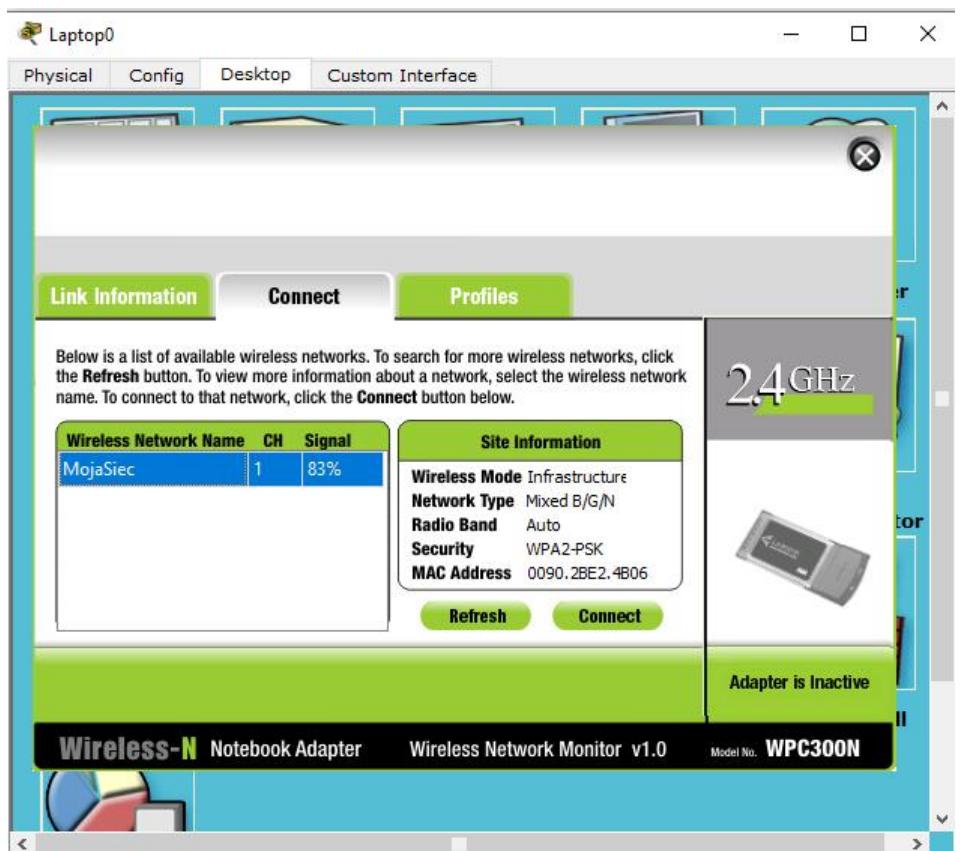
Przykład ustawień sieci dla jednego z komputerów i laptopów. Następne różnią się tylko ostatnim oktetem w adresie IP (tutaj mamy .2). Następne mają 3-7.



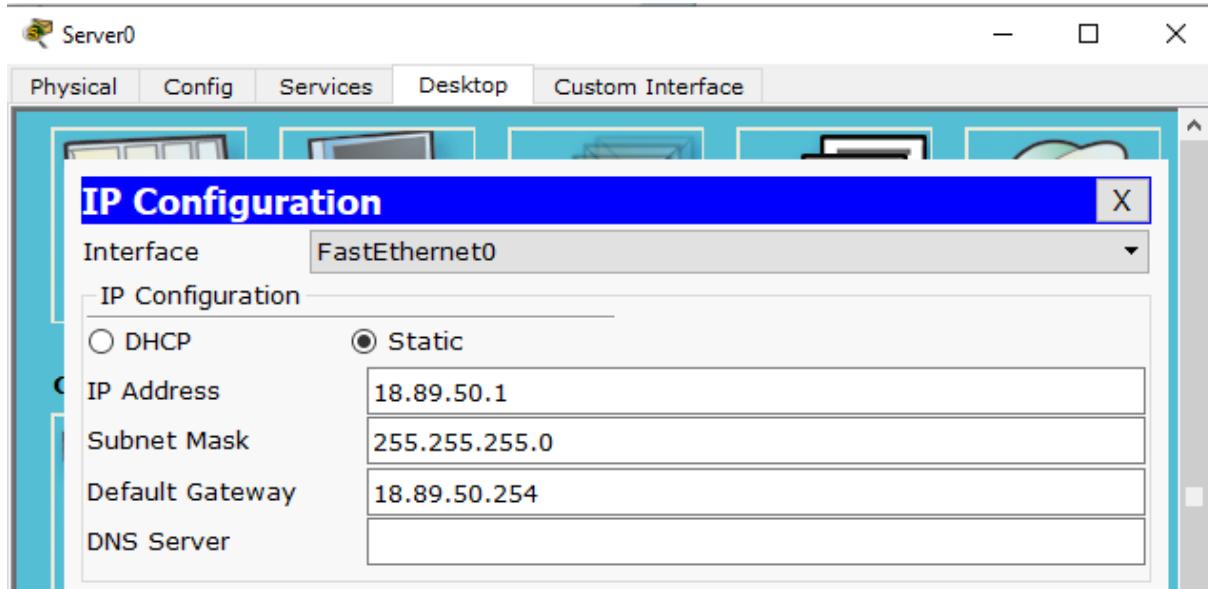
Dodatkowo w laptopie muszę zainstalować moduł WPC300N, aby komunikować się bez konieczności podłączania kabla.



Na laptopie łączę się z siecią.



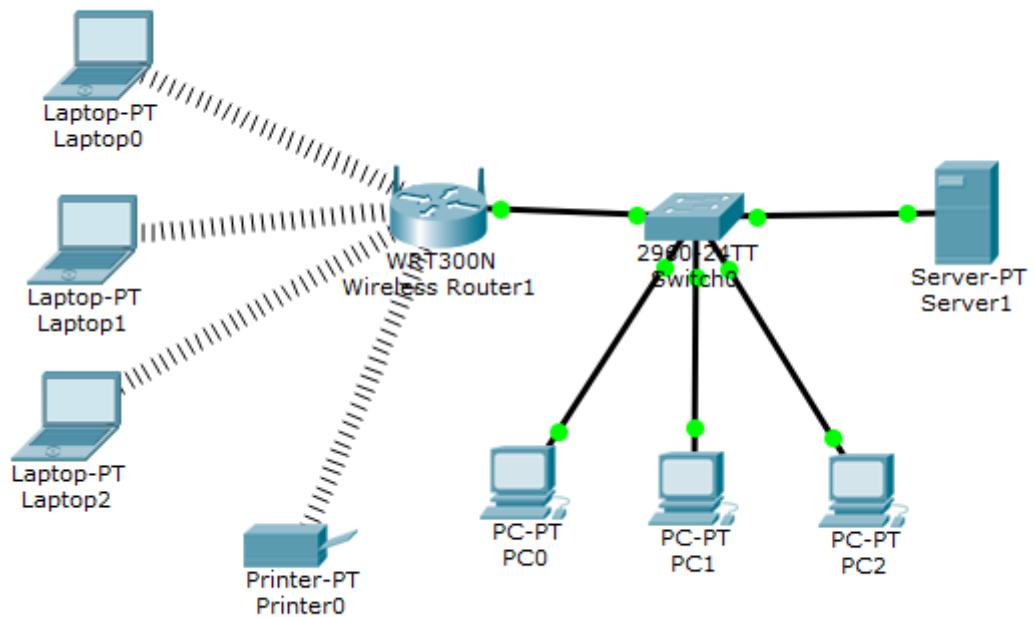
Teraz konfiguruje serwer. W serwerze ustawiam adresy sieci oraz włączam usługi **HTTP**, **FTP**, **DNS**, **Email**. (Konfiguracja usług w następnych etapach sprawozdania)



Teraz konfiguruje drukarkę. Muszę w niej zainstalować ten sam moduł, tak samo jak w przypadku laptopów i połączyć się z siecią.

The image contains two screenshots of the 'Printer0' configuration interface. The top screenshot shows the 'Global Settings' tab with the 'Display Name' set to 'Printer0'. Under 'Gateway/DNS', the 'Static' radio button is selected, and the 'Gateway' field contains '18.89.50.254'. The bottom screenshot shows the 'Wireless0' tab. It displays the 'Port Status' as 'On', 'Bandwidth' as '300 Mbps', 'MAC Address' as '0090.2117.338B', and 'SSID' as 'MojaSiec'. In the 'Authentication' section, 'WPA2-PSK' is selected with a pass phrase 'BezpieczneHaslo'. The 'Encryption Type' is set to 'AES'. Under 'IP Configuration', 'Static' is selected, with 'IP Address' set to '18.89.50.8' and 'Subnet Mask' set to '255.255.255.0'.

Tak prezentuje się sieć z poprawnie skonfigurowanymi urządzeniami.



A tutaj polecenia ping z PC0 do poszczególnych urządzeń.

Screenshot of a Command Prompt window titled "Command Prompt" running on "PC0". The window shows the output of several ping commands:

```
PC>ping 18.89.50.1
Pinging 18.89.50.1 with 32 bytes of data:
Reply from 18.89.50.1: bytes=32 time=0ms TTL=128

Ping statistics for 18.89.50.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 18.89.50.3
Pinging 18.89.50.3 with 32 bytes of data:
Reply from 18.89.50.3: bytes=32 time=1ms TTL=128
Reply from 18.89.50.3: bytes=32 time=0ms TTL=128
Reply from 18.89.50.3: bytes=32 time=0ms TTL=128
Reply from 18.89.50.3: bytes=32 time=0ms TTL=128

Ping statistics for 18.89.50.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```

PC0

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 18.89.50.4
Pinging 18.89.50.4 with 32 bytes of data:
Reply from 18.89.50.4: bytes=32 time=0ms TTL=128

Ping statistics for 18.89.50.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 18.89.50.5
Pinging 18.89.50.5 with 32 bytes of data:
Reply from 18.89.50.5: bytes=32 time=18ms TTL=128
Reply from 18.89.50.5: bytes=32 time=6ms TTL=128
Reply from 18.89.50.5: bytes=32 time=12ms TTL=128
Reply from 18.89.50.5: bytes=32 time=5ms TTL=128

Ping statistics for 18.89.50.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 18ms, Average = 10ms

PC>
```

PC0

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 18.89.50.6
Pinging 18.89.50.6 with 32 bytes of data:
Reply from 18.89.50.6: bytes=32 time=30ms TTL=128
Reply from 18.89.50.6: bytes=32 time=5ms TTL=128
Reply from 18.89.50.6: bytes=32 time=9ms TTL=128
Reply from 18.89.50.6: bytes=32 time=8ms TTL=128

Ping statistics for 18.89.50.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 30ms, Average = 13ms

PC>ping 18.89.50.7
Pinging 18.89.50.7 with 32 bytes of data:
Reply from 18.89.50.7: bytes=32 time=17ms TTL=128
Reply from 18.89.50.7: bytes=32 time=12ms TTL=128
Reply from 18.89.50.7: bytes=32 time=8ms TTL=128
Reply from 18.89.50.7: bytes=32 time=9ms TTL=128

Ping statistics for 18.89.50.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 17ms, Average = 11ms

PC>
```

The screenshot shows a network simulation environment titled "PC0". At the top, there are tabs for "Physical", "Config", "Desktop", and "Custom Interface". Below the tabs, there are icons representing different network components. A "Command Prompt" window is open, titled "Command Prompt". The window contains the following text:

```
PC>ping 18.89.50.8
Pinging 18.89.50.8 with 32 bytes of data:
Reply from 18.89.50.8: bytes=32 time=26ms TTL=128
Reply from 18.89.50.8: bytes=32 time=14ms TTL=128
Reply from 18.89.50.8: bytes=32 time=13ms TTL=128
Reply from 18.89.50.8: bytes=32 time=2ms TTL=128

Ping statistics for 18.89.50.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 26ms, Average = 13ms

PC>ping 18.89.50.254
Pinging 18.89.50.254 with 32 bytes of data:
Reply from 18.89.50.254: bytes=32 time=0ms TTL=255

Ping statistics for 18.89.50.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

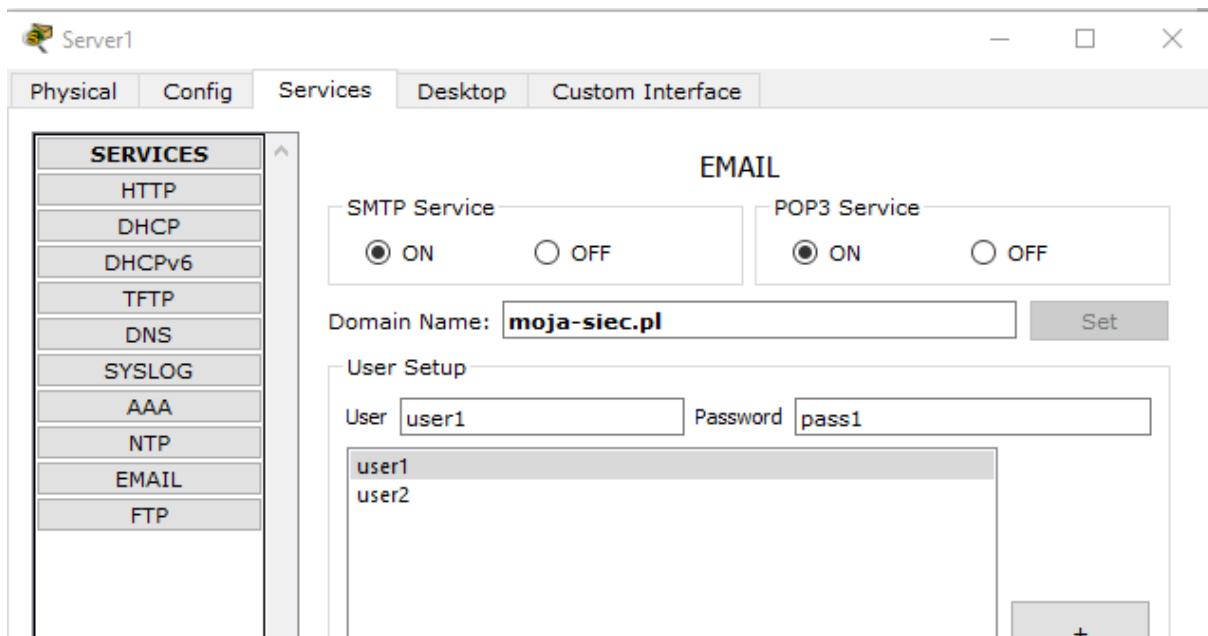
PC>
```

Jak widać na załączonych screenach, każde urządzenie ma ze sobą komunikację.

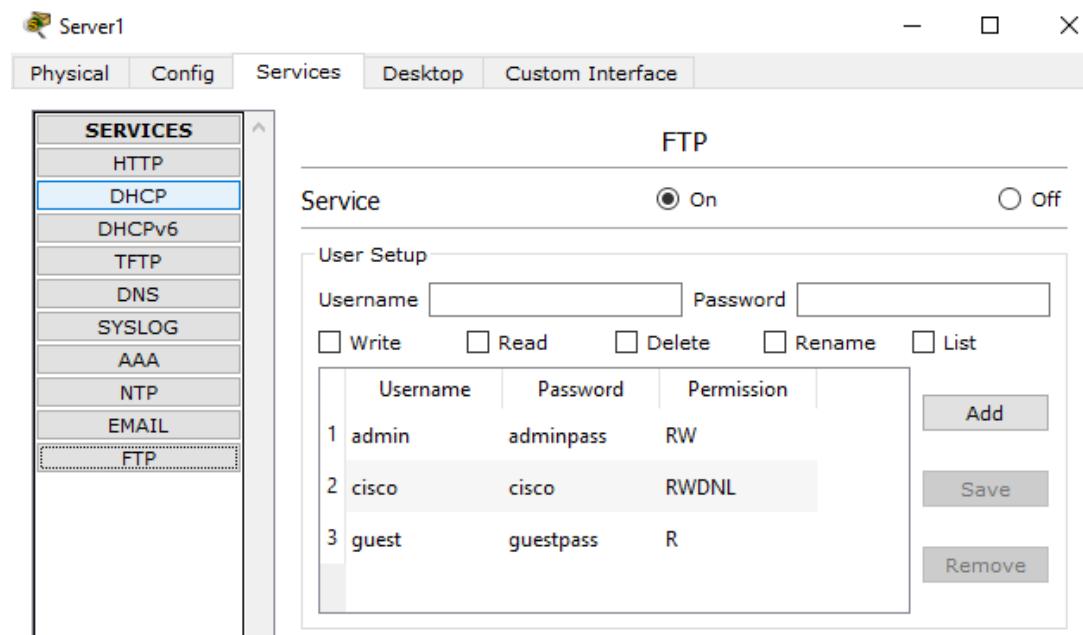
Teraz konfiguruję usługę http na serwerze. Po włączeniu usługi edytowałem pod siebie stronę internetową, która wyświetli się po wpisaniu w przeglądarkę adresu „http://18.89.50.1”



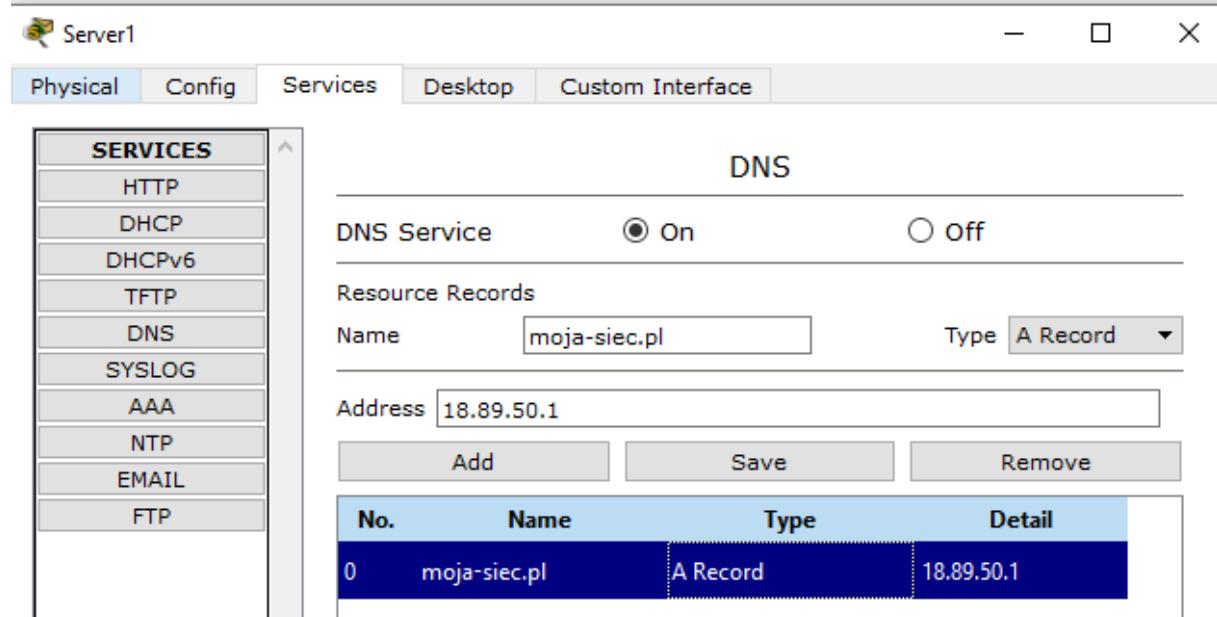
Teraz konfiguruuję usługę EMAIL. Dodałem dwóch użytkowników (user1 i user2)



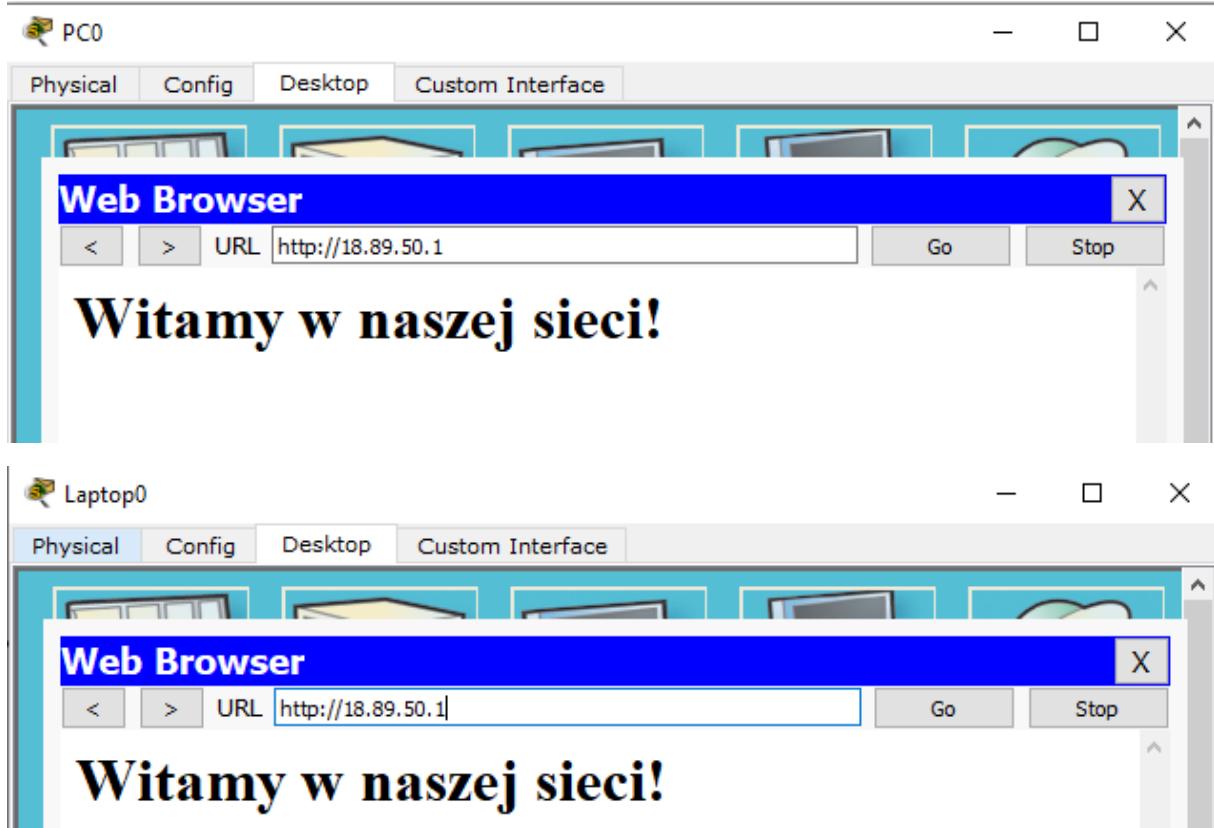
Teraz konfiguruje usługę FTP. Dodałem dwóch użytkowników z odpowiednimi uprawnieniami.



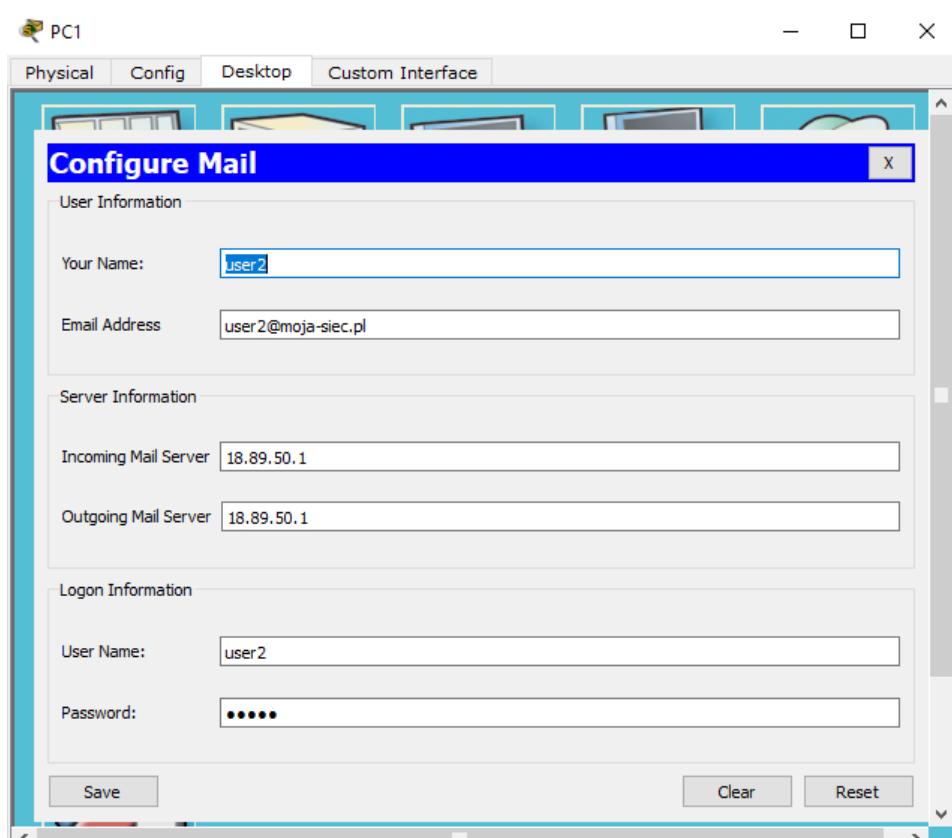
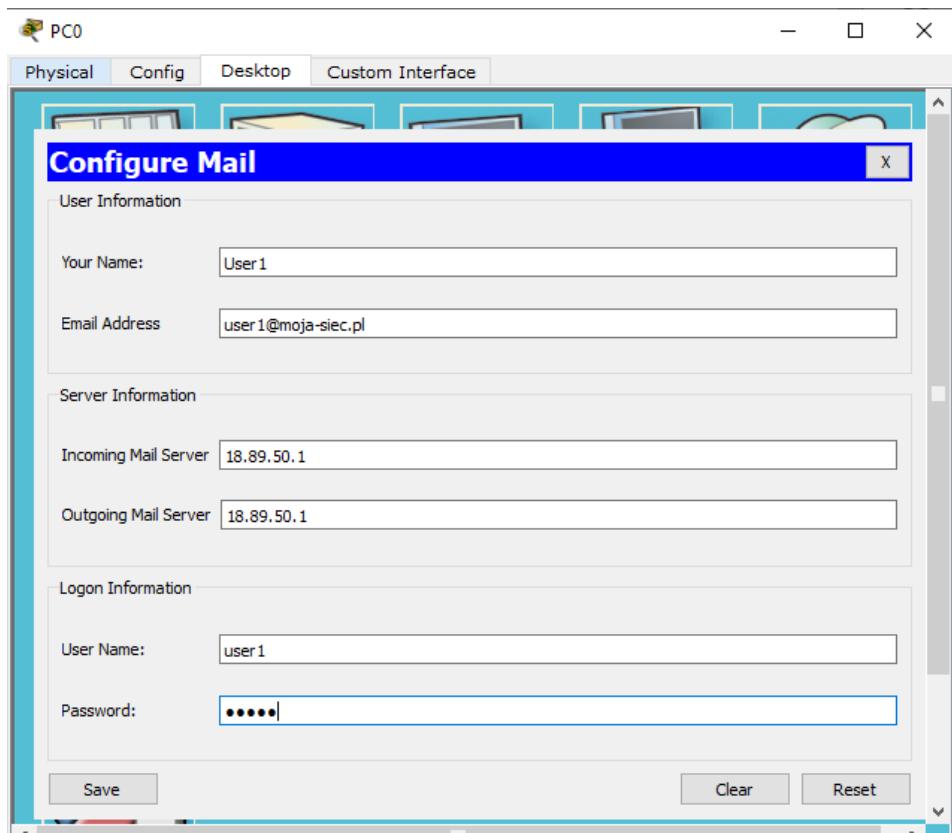
Następnie konfiguruje mój DNS. Teraz zamiast używać adresu <http://18.89.50.1> można użyć adresu <http://moja-sieci.pl> (strona działa zarówno na dwóch adresach).



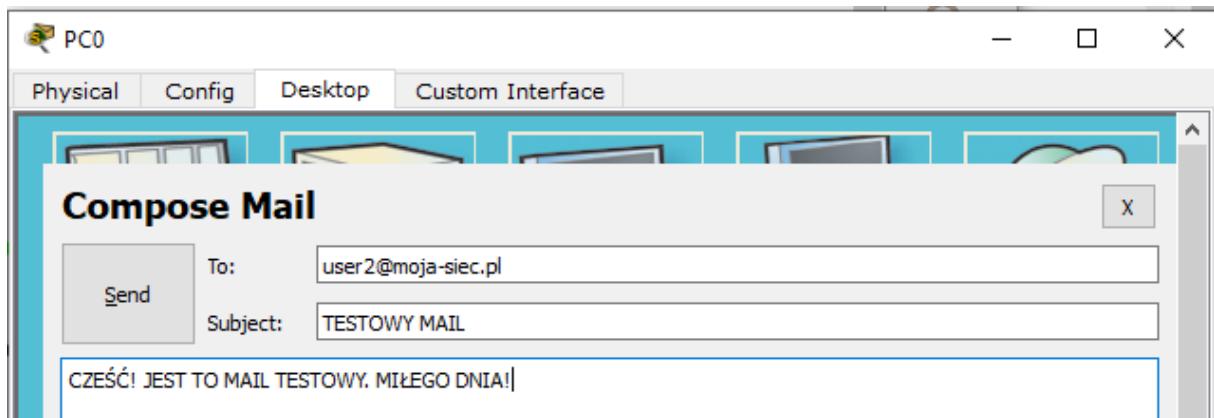
Z poziomu komputera oraz laptopa łączę się z naszą stroną internetową. Usługa działa.



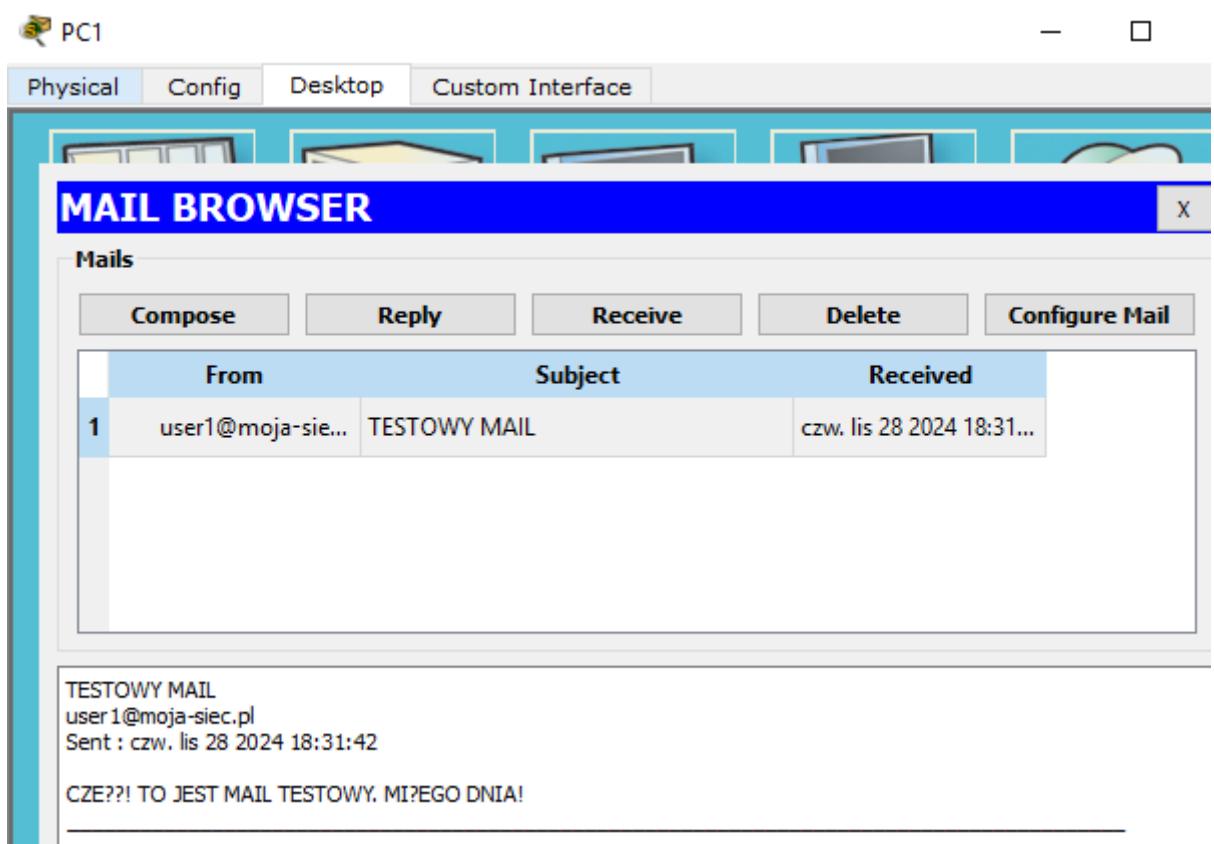
Konfigurowanie klientów maili oraz test maila. Na PC skonfigurowałem usługę Mailową i zalogowałem się za pomocą kont wcześniej utworzonych użytkowników.



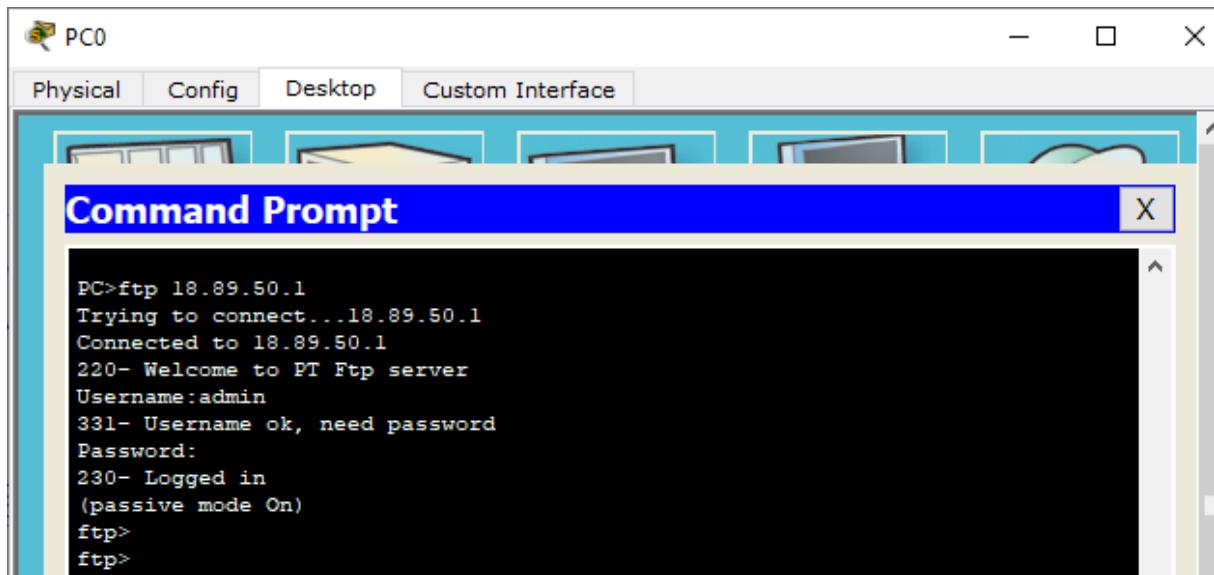
Wysyłam maila z jednego PC do drugiego.



Mail został dostarczony. Usługa działa poprawnie.

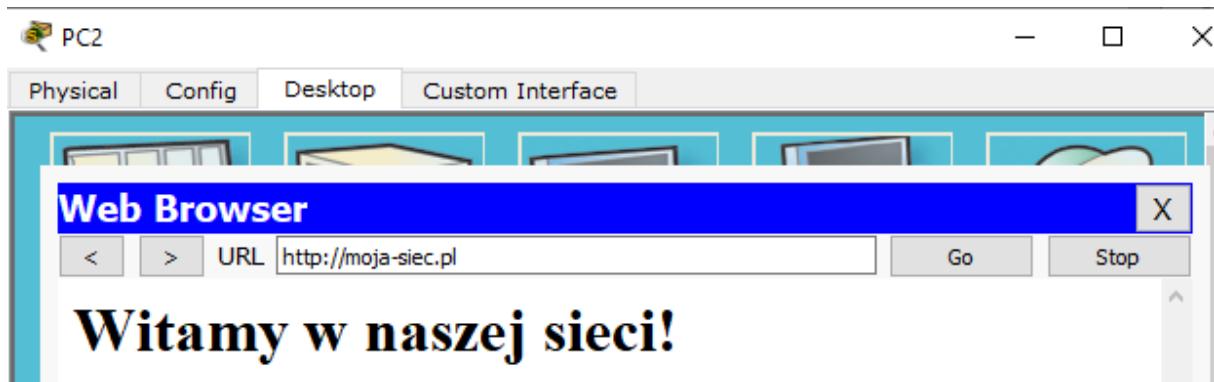


Server FTP również działa. Logując się z poziomu komputera za pomocą Command Prompt, zalogowałem się na użytkownika ADMIN, którego wcześniej utworzyłem.



```
PC>ftp 18.89.50.1
Trying to connect...18.89.50.1
Connected to 18.89.50.1
220- Welcome to PT Ftp server
Username:admin
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
ftp>
```

Usługa DNS również działa poprawnie. Mogłem wejść za pomocą linku „<http://moja-sieci.pl>”, w przypadku usługi http był to adres IP (<http://18.89.50.1>).



W tej części blokuje dostęp do sieci jednemu z komputerów oraz laptopów. Na serwerze w Firewallu blokuję dostęp.

The screenshot shows the Firewall configuration interface for a device named "Server1". The top navigation bar includes tabs for Physical, Config, Services, Desktop, and Custom Interface, with "Custom Interface" currently selected. A blue header bar displays the title "Firewall" and an "X" button. Below the header, there are two radio buttons: "On" (selected) and "Off". The main area is titled "Inbound Rules" and contains fields for Action, Protocol, Remote IP, Remote Wildcard Mask, Remote Port, and Local Port. Below these fields are three buttons: "Add", "Save", and "Remove". A table lists six inbound rules:

	Action	Protocol	Remote IP	Remote Wild Card	Remote Port
1	Allow	IP	18.89.50.2	0.0.0.0	-
2	Allow	IP	18.89.50.3	0.0.0.0	-
3	Deny	TCP	18.89.50.4	0.0.0.0	80
4	Allow	IP	18.89.50.5	0.0.0.0	-
5	Allow	IP	18.89.50.6	0.0.0.0	-
6	Deny	TCP	18.89.50.7	0.0.0.0	80

Po wyszukaniu adresu IP na wskazanych urządzeniach strona nie jest wyświetlana.

The screenshot shows a web browser window titled "Web Browser" running on a device named "Laptop2". The top navigation bar includes tabs for Physical, Config, Desktop, and Custom Interface, with "Custom Interface" currently selected. The browser interface features a toolbar with back, forward, and search buttons, and a URL field containing "http://moja-sieci.pl". The main content area is blank, indicating that the page has not loaded or is loading.

Dokumentacja urządzeń, ich adresy IP i MAC.

URZĄDZENIE	ADRES IP	ADRES MAC
Server1	18.89.50.1	0001.C79B.6634
Router1	18.89.50.254	00D0.9781.65B5
PC0	18.89.50.2	0040.0BB5.EB69
PC1	18.89.50.3	00E0.F9E6.4639
PC2	18.89.50.4	0040.0B55.1667
Laptop0	18.89.50.5	0090.2142.D8DA
Laptop1	18.89.50.6	0060.4762.25E7
Laptop2	18.89.50.7	000A.F3CC.843E
Printer0	18.89.50.8	0090.2117.338B

Polecenie ping wysłane do laptopa o adresie 18.89.50.5. Wykonane przez wszystkie PC.

PC0

Physical Config Desktop Custom Interface

Command Prompt X

```
PC>ping 18.89.50.5

Pinging 18.89.50.5 with 32 bytes of data:

Reply from 18.89.50.5: bytes=32 time=7ms TTL=128
Reply from 18.89.50.5: bytes=32 time=8ms TTL=128
Reply from 18.89.50.5: bytes=32 time=11ms TTL=128
Reply from 18.89.50.5: bytes=32 time=11ms TTL=128

Ping statistics for 18.89.50.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 11ms, Average = 9ms

PC>
```

PC1

Physical Config Desktop Custom Interface

Command Prompt X

```
PC>ping 18.89.50.5

Pinging 18.89.50.5 with 32 bytes of data:

Reply from 18.89.50.5: bytes=32 time=10ms TTL=128
Reply from 18.89.50.5: bytes=32 time=11ms TTL=128
Reply from 18.89.50.5: bytes=32 time=9ms TTL=128
Reply from 18.89.50.5: bytes=32 time=14ms TTL=128

Ping statistics for 18.89.50.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 14ms, Average = 11ms

PC>
PC>
```

PC2

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 18.89.50.5
Pinging 18.89.50.5 with 32 bytes of data:
Reply from 18.89.50.5: bytes=32 time=9ms TTL=128
Reply from 18.89.50.5: bytes=32 time=13ms TTL=128
Reply from 18.89.50.5: bytes=32 time=10ms TTL=128
Reply from 18.89.50.5: bytes=32 time=13ms TTL=128

Ping statistics for 18.89.50.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 9ms, Maximum = 13ms, Average = 11ms

PC>
```

Polecenie traceroute z PC0 do laptopa o adresie IP 18.89.50.5

PC0

Physical Config Desktop Custom Interface

Command Prompt

```
PC>tracert 18.89.50.5
Tracing route to 18.89.50.5 over a maximum of 30 hops:
  1  11 ms      6 ms      7 ms  18.89.50.5

Trace complete.

PC>
```

Tablica ARP z poziomu PC0 o adresie IP 18.89.50.2

PC0

Physical Config Desktop Custom Interface

Command Prompt

```
PC>arp -a
  Internet Address      Physical Address          Type
  18.89.50.1              0001.c79b.6634        dynamic
  18.89.50.3              00e0.f9e6.4639        dynamic
  18.89.50.4              0040.0b55.1667        dynamic
  18.89.50.5              0090.2142.d8da        dynamic
  18.89.50.6              0060.4762.25e7        dynamic
  18.89.50.7              000a.f3cc.843e        dynamic
  18.89.50.8              0090.2117.338b        dynamic
  18.89.50.254            00d0.9781.65b5        dynamic

PC>
```

Autor sprawozdania: Paweł Mazur (188950)

