Sieci komputerowe
Laboratorium 10 – Sieci bezprzewodowe

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1. 1. Zalogowanie się do punktów dostępowych

telnet 192.168.88.11 / telnet 192.168.88.13

1. 2. Konfiguracja sieci bezprzewodowej

```
[student@ap11] > /interface wireless info allowed-channels
interface: wlan1
  channels: 2412/20-Ce/gn(16dBm),2417/20-Ce/gn(16dBm),2422/20-Ce/gn(16dBm),
            2427/20-Ce/gn(16dBm),2432/20-Ce/gn(16dBm),2437/20-Ce/gn(16dBm),
            2442/20-Ce/gn(16dBm),2447/20-Ce/gn(16dBm),2452/20-Ce/gn(16dBm)
```

Router 11:
```
[student@ap11] > /interface wireless set numbers=wlan1 mode=bridge country=polan
d frequency-mode=regulatory-domain antenna-gain=4 frequency=2437 ssid=NetLab1 di
sabled=no
```

Router 13:
/interface wireless set numbers=wlan1 mode=station-bridge country=polan
d frequency-mode=regulatory-domain antenna-gain=4 frequency=2437 ssid=NetLab1 di
sabled=no

Pingowanie działa:

```
[student@ap11] > ping 192.168.88.113
  SEQ HOST                                   SIZE TTL TIME   STATUS
    0 192.168.88.113                                         timeout
    1 192.168.88.113                           56  64 0ms
    2 192.168.88.113                           56  64 3ms
    3 192.168.88.113                           56  64 0ms
    4 192.168.88.113                           56  64 1ms
    sent=5 received=4 packet-loss=20% min-rtt=0ms avg-rtt=1ms max-rtt=3ms

[student@ap11] >
[student@ap11] > ping 192.168.88.114
  SEQ HOST                                   SIZE TTL TIME   STATUS
    0 192.168.88.114                           56  64 2ms
    1 192.168.88.114                           56  64 0ms
    2 192.168.88.114                           56  64 0ms
    sent=3 received=3 packet-loss=0% min-rtt=0ms avg-rtt=0ms max-rtt=2ms
```

1. 3. Autoryzacja wspólnym kluczem

Router 11:
```
[student@ap11] > /interface wireless security-profiles add name=sp1 mode=dynamic
-keys authentication-types=wpa2-psk wpa2-pre-shared-key=NETlab-common-key
```

```
[student@ap11] > /interface wireless set numbers=wlan1 security-profile=sp1
```

Analogicznie dla Router 13 takie same komendy.
Pingowanie działa:

```
[student@ap11] > ping 192.168.88.114
  SEQ HOST                                      SIZE TTL TIME   STATUS
    0 192.168.88.114                              56  64 4ms
    1 192.168.88.114                              56  64 1ms
    2 192.168.88.114                              56  64 1ms
    3 192.168.88.114                              56  64 0ms
    4 192.168.88.114                              56  64 1ms
    sent=5 received=5 packet-loss=0% min-rtt=0ms avg-rtt=1ms max-rtt=4ms
```

1. 4. Autoryzacja RADIUS

Router 11:

```
[student@ap11] > /interface wireless security-profiles add name=eap_ap mode=dyna
mic-keys authentication-types=wpa2-eap eap-methods=passthrough                 |
[student@ap11] > /interface wireless set wlan1 security-profile=eap_ap
[student@ap11] > /radius add address=192.168.88.111 secret=secret123 service=wir
eless
```

Router 13:

```
[student@ap13] /interface wireless security-profiles> /interface wireless securi
ty-profiles add name=eap \
\...     mode=dynamic-keys authentication-types=wpa2-eap eap-methods=peap \
\...     supplicant-identity=MikroTik mschapv2-username=student \
\...     mschapv2-password=MikroTik tls-mode=dont-verify-certificate
```

Pingowanie działa:

```
[student@ap11] > ping 192.168.88.113
  SEQ HOST                                      SIZE TTL TIME   STATUS
    0 192.168.88.113                              56  64 3ms
    1 192.168.88.113                              56  64 0ms
    2 192.168.88.113                              56  64 2ms
    3 192.168.88.113                              56  64 0ms
    sent=4 received=4 packet-loss=0% min-rtt=0ms avg-rtt=1ms max-rtt=3ms
```

```
[student@ap13] /interface wireless> /ping 192.168.88.111
  SEQ HOST                                      SIZE TTL TIME   STATUS
    0 192.168.88.111                              56  64 5ms
    1 192.168.88.111                              56  64 1ms
    2 192.168.88.111                              56  64 1ms
    3 192.168.88.111                              56  64 0ms
    4 192.168.88.111                              56  64 0ms
```