



İTERNETTEN TEKNOLOJİ LTD. ŞTİ.

- Mikrotik Master Distributor
- Linux /Os Specialist
- Network Specialist
- Mikrotik Specialist

Yavuz Selim MALKOÇ

İTERNET T3M Teknoloji Ltd.Şti.

Chief Executive Officer

Linux Expert , Network Specialist



Mikrotik Certified Network Associate

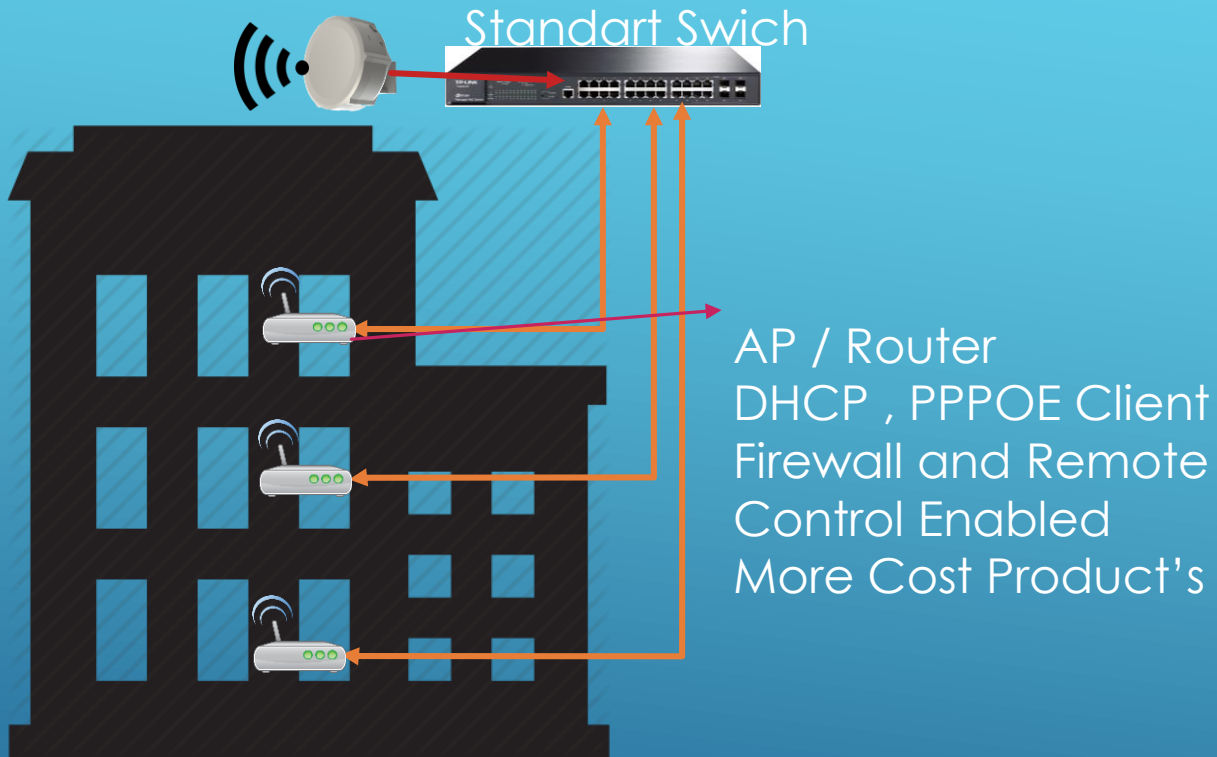


Mikrotik Certified Routing Engineer

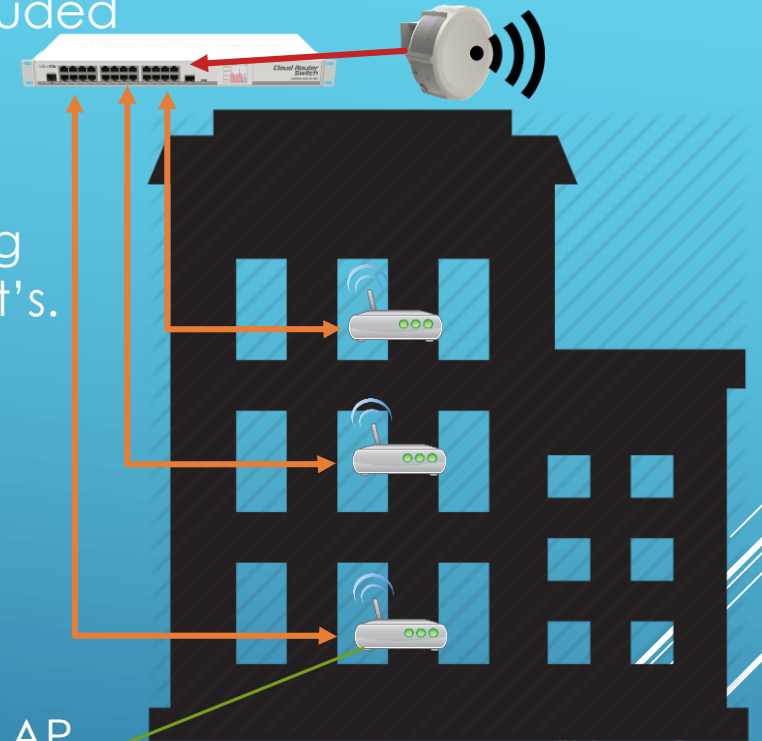


Mikrotik Certified Traffic Control Engineer

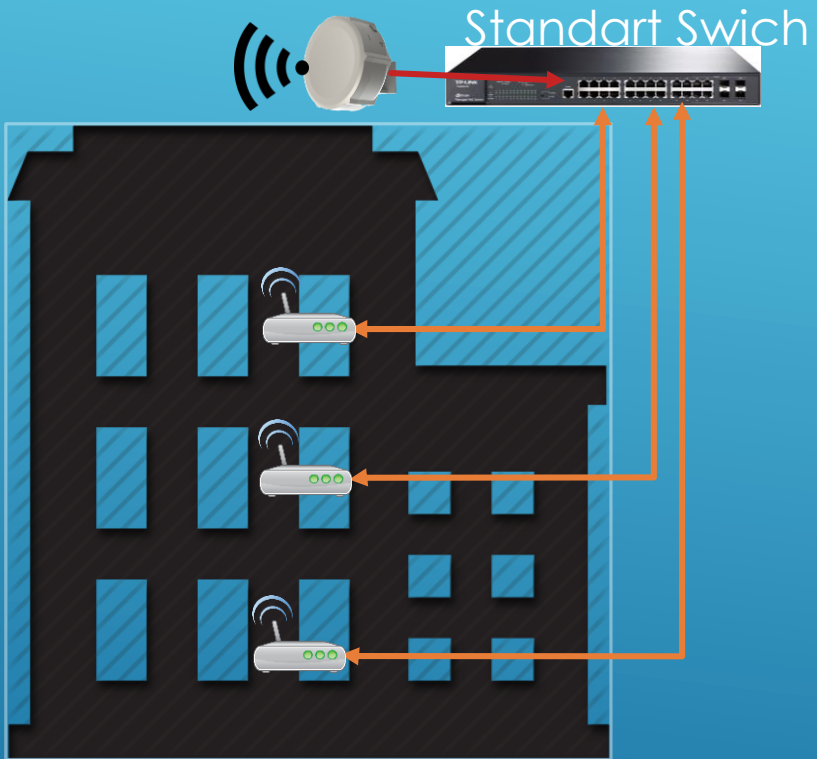
BUILDING NETWORK PLAN



RouterOS Included
PPPOE Client
Firewall ,Vlan
Content Filter
Traffic Shaping
Inside Product's.



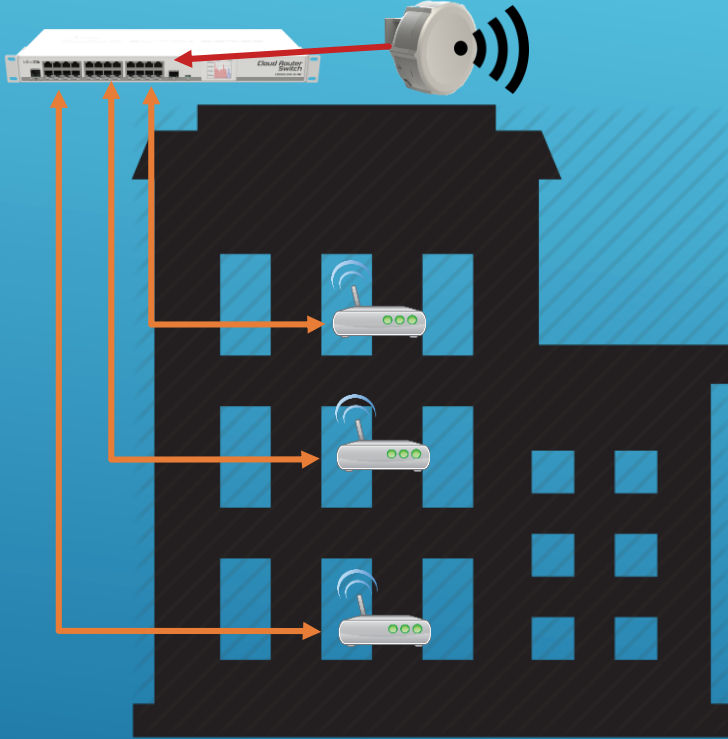
Standart AP
Don't Need DHCP
or PPPOE Client
Cost Effectly



CLIENT SIDE CABLE UNTRUSTED USAGE

- ARP attack problem
- DHCP Broadcast management problem
- Network Sniff Problem
- Unmanaged Network , Hacking Problem
- More cost for device ,management's .

ROUTEROS INCLUDED SWITCH ADVANTAGE



- Manage One device all build customers
- All Traffic control one device (Per 24 customer)
- Firewall Management's
- Content Filtering , DNS Blocking
- DHCP Management All Customer One Side
- PPPOE Client's One Device and Management Far Side
- Performans Monitoring and Trusted Metered Network.
- Proactive Managed Professional WiSP Solutions..



Configuration SXT 5ndr2 (SXT Lite 5)

CPE devices basic configuration.

- Wireless Mode - Station Bridge
- Create Bridge => WISP_BRIDGE
- Add Ether1 & Wlan1 => WISP_BRIDGE
- Dhcp Client interface = WISP_BRIDGE





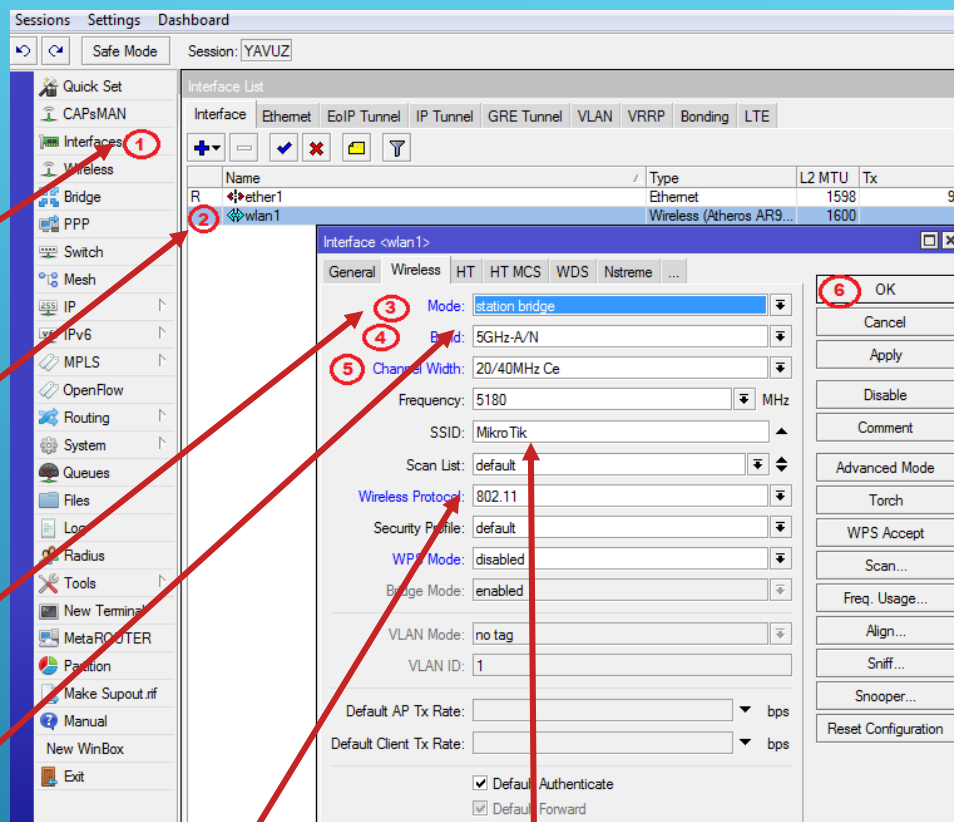
Configuration SXT 5ndr2 (SXT Lite 5)

Wireless Mode - Station Bridge

Create Bridge => WISP_BRIDGE

Add Ether1 & Wlan1 => WISP_BRIDGE

Dhcp Client interface = WISP_BRIDGE



Terminal Command

```
/interface wireless
```

```
set [ find default-name=wlan1 ] mode=station-bridge band=5Ghz/a/n wireless-protocol=802.11 disabled=no ssid=Mikrotik rx-chains=0,1 tx-chains=0,1
```



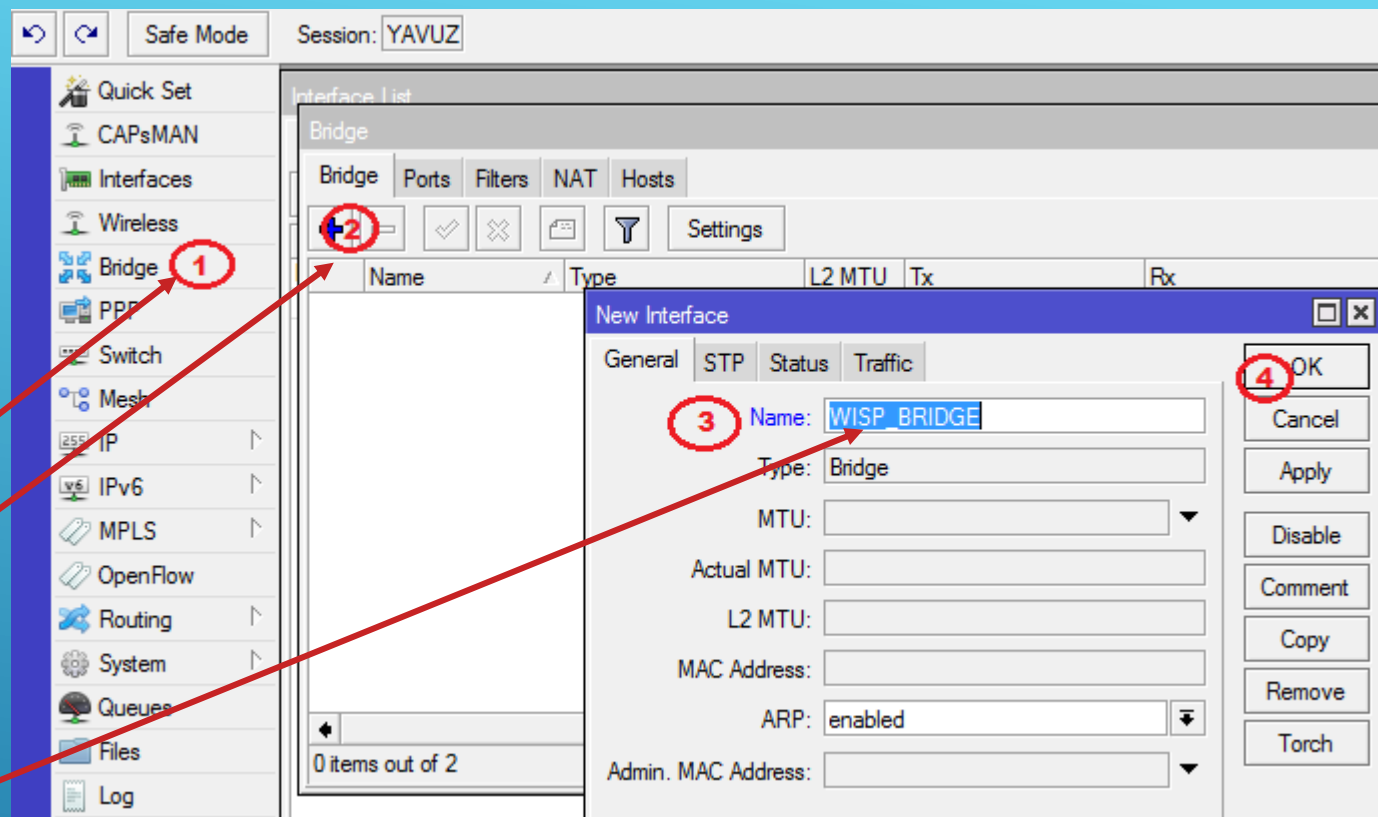
Configuration SXT 5ndr2 (SXT Lite 5)

Wireless Mode - Station Bridge

Create Bridge => WISP BRIDGE

Add Ether1 & Wlan1 => WISP_BRIDGE

Dhcp Client interface = WISP_BRIDGE



Terminal Command

/interface bridge add name=WISP_BRIDGE

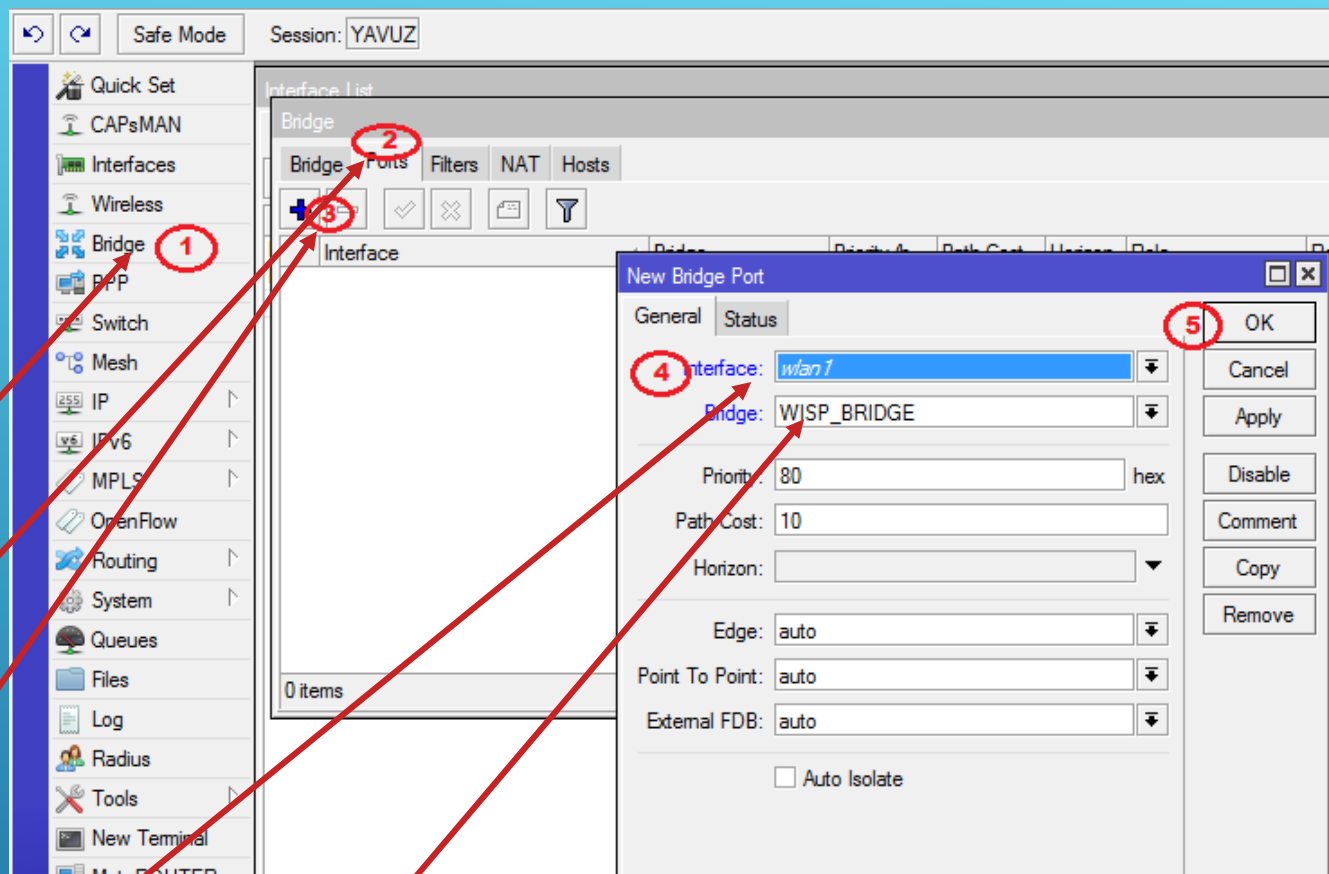


Configuration SXT 5ndr2 (SXT Lite 5)

Wireless Mode - Station Bridge
Create Bridge => WISP_BRIDGE

Add Ether1 & Wlan1 => WISP BRIDGE

Dhcp Client interface = WISP_BRIDGE



Terminal Command

/interface bridge port add interface=wlan1 bridge=WISP_BRIDGE

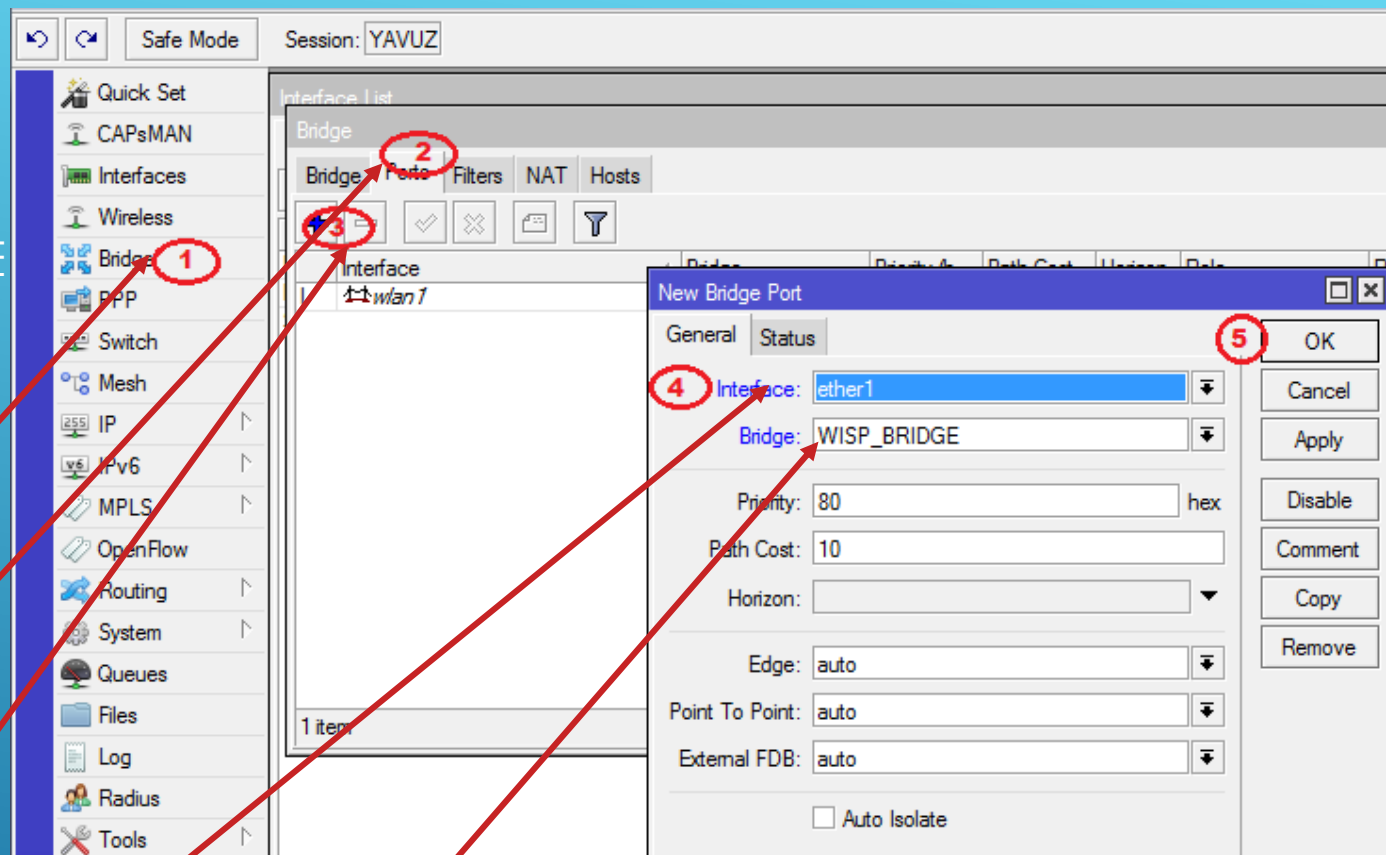


Configuration SXT 5ndr2 (SXT Lite 5)

Wireless Mode - Station Bridge
Create Bridge => WISP_BRIDGE

Add Ether1 & Wlan1 => WISP BRIDGE

Dhcp Client interface = WISP_BRIDGE



Terminal Command

/interface bridge port add interface=ether1 bridge=WISP_BRIDGE



Configuration SXT 5ndr2 (SXT Lite 5)

Wireless Mode - Station Bridge
Create Bridge => WISP_BRIDGE
Add Ether1 & Wlan1 => WISP_BRIDGE
Dhcp Client interface = WISP BRIDGE

The screenshot shows the Mikrotik WinBox interface with the following configuration steps highlighted:

1. Selecting 'IP' in the left sidebar.
2. Selecting 'DHCP Client' in the left sidebar.
3. Clicking the '+' button to add a new DHCP client.
4. Selecting 'WISP_BRIDGE' as the interface in the 'New DHCP Client' dialog.
5. Clicking 'OK' to confirm the configuration.

The 'Interface List' table shows the following interfaces:

Interface	Type	L2 MTU	Tx	Rx
R WISP_BRIDGE	Bridge	1598	46.0 kbps	46.1 kbps
RS ether1	Ethernet	1598	46.1 kbps	46.1 kbps
S wlan1	Wireless (Atheros AR9...	1600	0 bps	0 bps

The 'DHCP Client' dialog shows the following configuration:

- Interface: WISP_BRIDGE
- Use Peer DNS: ☒
- Use Peer NTP: ☒
- Add Default Route: yes
- Default Route Distance: 0

Terminal Command

```
/ip dhcp-client add interface=WISP_BRIDGE disabled=no
```



Configuration SXT 5ndr2 (SXT Lite 5)

CPE devices configuration Completed.



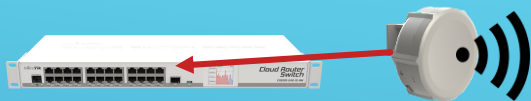
SXT Configuration Total Script's

Terminal Command

```
/interface bridge add name=WISP_BRIDGE  
/interface wireless set [ find default-name=wlan1 ] disabled=no
```

```
/interface bridge port  
add bridge=WISP_BRIDGE interface=wlan1  
add bridge=WISP_BRIDGE interface=ether1
```

```
/ip dhcp-client add default-route-distance=0 dhcp-options=hostname,clientid disabled=no interface=WISP_BRIDGE
```



Configuration SXT 5ndr2 (SXT Lite 5)

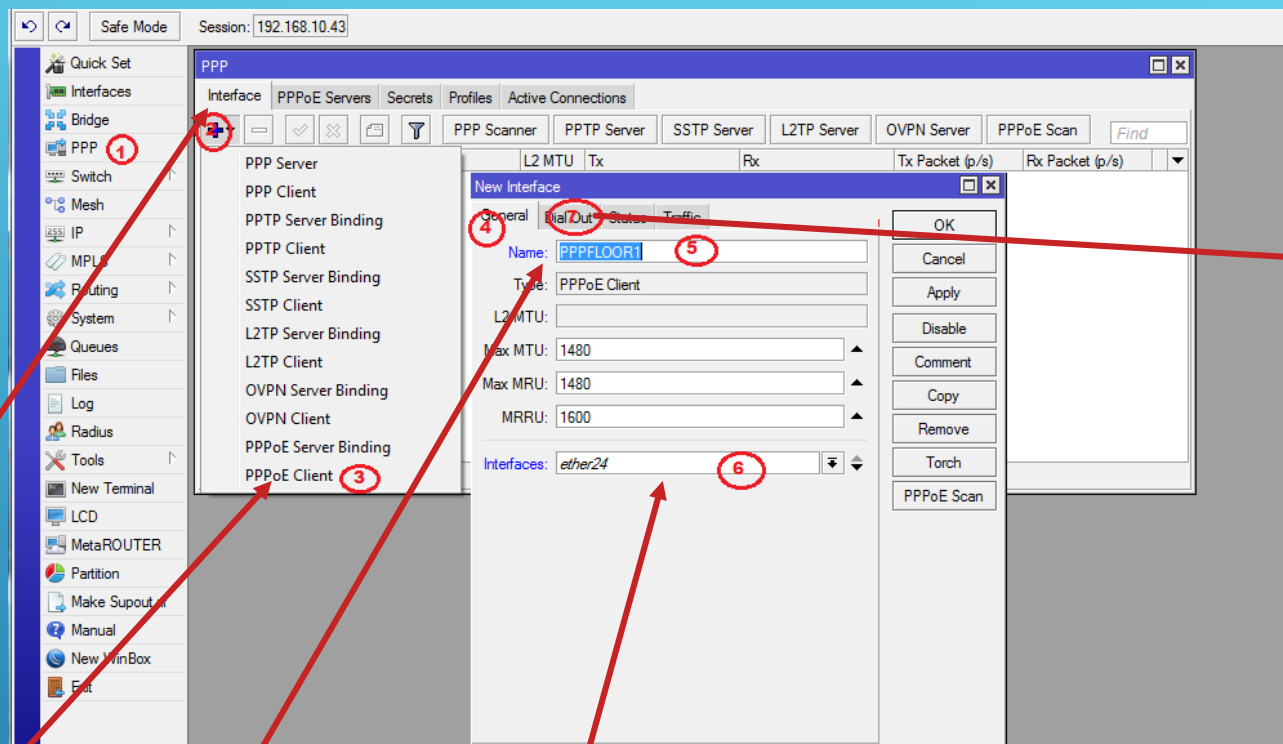
CRS devices basic configuration steps.



- Assign one port (Uplink - ether24)
- Add PPPoE Client ether24 interface for all floor (floor1 , floor2 , floor3 bla bla)
- Add ip address all interface ether1 – 192.168.1.1/24 ... ether10 – 192.168.10.1/24
- Add dhcp server all interface (exclude ether24)
- Add Optimal Mangle rule one interface customer to use one pppoe client user account's
- Add route for all Routing mark insided user to assigned gateway (pppoe)



Configuration RouterOS Switch / GW (CRS125 or Another)



Next Settings

Terminal Command

/interface pppoe-client

add disabled=no name=PPPFLOOR1 interface=ether24 password=floor1 user=floor1

add disabled=no name=PPPFLOOR2 interface=ether24 password=floor2 user=floor2



Configuration RouterOS Switch / GW (CRS125 or Another)

Safe Mode Session: 192.168.10.43

Quick Set

Interfaces

Bridge

PPP **1**

Switch

Mesh

IP

MPLS

Routing

System

Queues

Files

Log

Radius

Tools

New Terminal

LCD

MetaROUTER

Partition

Make Supout.rif

Manual

New WinBox

Exit

Interface PPPoE Servers Secrets Profiles Active Connections

PPP Server

PPP Client

PPTP Server Binding

PPTP Client

SSTP Server Binding

SSTP Client

L2TP Server Binding

L2TP Client

OVPN Server Binding

OVPN Client

PPPoE Server Binding

PPPoE Client **3**

New Interface

General Dial Out Status Traffic

4 Service: **8** OK

AC Name:

5 User: floor1 **6**

Password: floor1

Profile: default

Keepalive Timeout: 60

7 Add Default Route

Default Route Distance: 1

Allow: ☒ mschap2 ☒ mschap1 ☒ chap ☒ pap

Cancel

Apply

Disable

Comment

Copy

Remove

Torch

PPPoE Scan

Uncheck
Add Default Route

Terminal Command

```
/interface pppoe-client
```

```
add disabled=no name=PPPFLOOR1 interface=ether24 password=floor1 user=floor1
```

```
add disabled=no name=PPPFLOOR2 interface=ether24 password=floor2 user=floor2
```



Configuration RouterOS Switch / GW (CRS125 or Another)

PPP					
Interface PPPoE Servers Secrets Profiles Active Connections					
+ - ✓ ✗ 📁 🏠 PPP Scanner PPTP Server SSTP Server L					
Name	Type	L2 MTU	Tx	Rx	
❖❖PPPLOOR1	PPPoE Client			0 bps	
❖❖PPPLOOR2	PPPoE Client			0 bps	
❖❖PPPLOOR3	PPPoE Client			0 bps	
❖❖PPPLOOR4	PPPoE Client			0 bps	
❖❖PPPLOOR5	PPPoE Client			0 bps	
❖❖PPPLOOR6	PPPoE Client			0 bps	
❖❖PPPLOOR10	PPPoE Client			0 bps	

Add PPPOE Client All Floor account's



Configuration RouterOS Switch / GW (CRS125 or Another)

1

2

3

4

5

Add Dhcp Server Pool All Interface Terminal Command

```
/ip pool add name=Pool_Floor1 ranges=192.168.1.20-192.168.1.254  
/ip pool add name=Pool_Floor2 ranges=192.168.2.20-192.168.2.254  
/ip pool add name=Pool_Floor3 ranges=192.168.3.20-192.168.3.254
```

Name	Addresses	Next Pool
Pool_Floor1	192.168.1.20-192.168.1.254	none
Pool_Floor2	192.168.2.20-192.168.2.254	none
Pool_Floor3	192.168.3.20-192.168.3.254	none

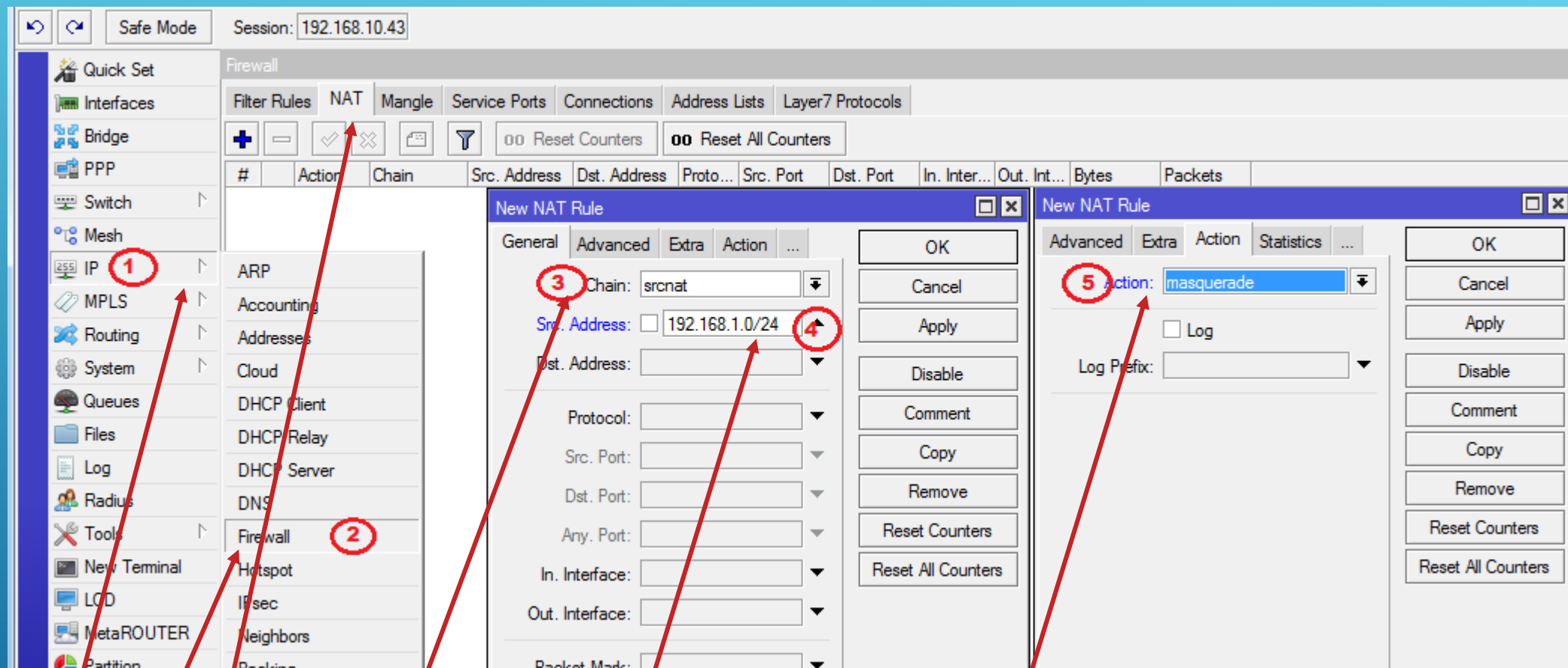


Configuration RouterOS Switch / GW (CRS125 or Another)

The screenshot shows the Mikrotik WinBox interface. On the left, the 'IP' menu item is circled in red and labeled '1'. Below it, the 'DHCP Server' menu item is circled in red and labeled '2'. The main window displays the 'DHCP Server' configuration page. At the top, there are tabs for 'DHCP', 'Networks', 'Leases', 'Options', 'Option Sets', and 'Alerts'. Below these tabs, there are buttons for '+', '-', '✓', '✗', and a filter icon. The 'DHCP Config' and 'DHCP Setup' buttons are also visible. A table with columns 'Name', 'Interface', 'Relay', 'Lease Time', 'Address Pool', and 'Add AR...' is shown. Below the table, it says '0 items'. A 'New DHCP Server' dialog box is open, showing fields for 'Name' (4), 'Interface' (5), 'Relay', 'Lease Time', 'Bootp Lease Time', 'Address Pool' (6), 'Src. Address', 'Delay Threshold', 'Authoritative', and 'Bootp Support'. The 'Name' field is set to 'dhcp-floor1', the 'Interface' is set to 'ether1', and the 'Address Pool' is set to 'Pool_Floor1'. The 'OK' button is highlighted.

Add Dhcp Server All Interface Terminal Command

```
/ip dhcp-server add name=dhcp-floor1 interface=ether1 address-pool=Pool_Floor1 disabled=no
```



Configuration RouterOS Switch / GW (CRS125 or Another)



Firewall

Filter Rules NAT Mangle Service Ports Connections Address Lists Layer7 Protocols

3

1

2

4

5

6

7

New Mangle Rule

Mangle Rule <192.168.1.0/24>

General Advanced Extra Action Statistics

Chain: prerouting

Src. Address: 192.168.1.0/24

Dst. Address:

Protocol:

Src. Port:

Dst. Port:

Any. Port:

P2P:

In. Interface:

Out. Interface:

Packet Mark:

Action: mark connection

Log

Log Prefix:

New Connection Mark: Conn_Floor1

7

OK

Cancel

Apply

Disable

Comment

Copy

Remove

Reset Counters

Reset All Counters

Adding Mangle Rule for split customer and mark Connection

/ip firewall mangle add chain=prerouting src-address=192.168.1.0/24 action=mark-connection new-connection-mark=Conn_Floor1



Configuration RouterOS Switch / GW (CRS125 or Another)

Adding Mangle Rule for split customer and mark Connection

/ip firewall mangle add chain=prerouting connection-mark=Conn_Floor1 action=mark-routing new-routing-mark=Route_Floor1 passthrough=no



Configuration RouterOS Switch / GW (CRS125 or Another)

The screenshot shows the Mikrotik WinBox interface. On the left, the 'IP' menu is selected (1), and 'Routes' is chosen from the submenu (2). In the main window, the 'Route List' tab is active, and the 'Add' button (3) is clicked. The 'New Route' dialog is open, showing the following configuration:

- 4. Dst. Address: 0.0.0.0/0
- 5. Gateway: PPPFLOOR1
- 6. Distance: 1
- 7. Routing Mark: Route_Floor1

The 'Route List' table shows the following entries:

	Dst. Address	Gateway	Distance	Routing Mark	Pref. Source
DAS	0.0.0.0/0	192.168.10.1 reachable ether1	1		
DAC	192.168.1.0/24	ether1 reachable	0		192.168.1.1
DC	192.168.2.0/24	ether2 unreachable	255		192.168.2.1
DC	192.168.3.0/24	ether3 unreachable	255		192.168.3.1
DAC	192.168.10.0/24	ether1 reachable	0		192.168.10.43

Last Configuration – Routing mark use ip Route

/ip route add dst-address=0.0.0.0/0 gateway= PPPFLOOR1 distance=1 routing-mark=Route_Floor1



Configuration RouterOS Switch / GW (CRS125 or Another)

Route List						
Routes						
Nexthops Rules VRF						
+ - ✓ ✗ [icon] [icon]						
Find all						
	Dst. Address	/	Gateway	Distance	Routing Mark	Pref. Source
AS	▶ 0.0.0.0/0		PPPFLOOR1 reachable	1	Route_Floor1	
AS	▶ 0.0.0.0/0		PPPFLOOR2 reachable	1	Route_Floor2	
AS	▶ 0.0.0.0/0		PPPFLOOR3 reachable	1	Route_Floor3	
AS	▶ 0.0.0.0/0		PPPFLOOR4 reachable	1	Route_Floor4	

All IP Routing Mark Set And All Customer's only use special PPPOE Client

Configuration Complated

*This Configuration sample or
Any Special Network Configuration Sample's website <http://bilgi.wi.com.tr>*



Any Questions ?

Thanks ;

Yavuz Selim MALKOÇ
INTERNET T3M Teknoloji Ltd.Şti.
Chief Executive Officer
Linux Expert , Network Specialist

