



İNTERNETTEN TEKNOLOJİ LTD. ŞTİ.

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

Yavuz Selim MALKOÇ

İNTERNET T3M Teknoloji Ltd.Şti.

Chief Executive Officer

Linux Expert , Network Specialist



MikroTik Certified Network Associate

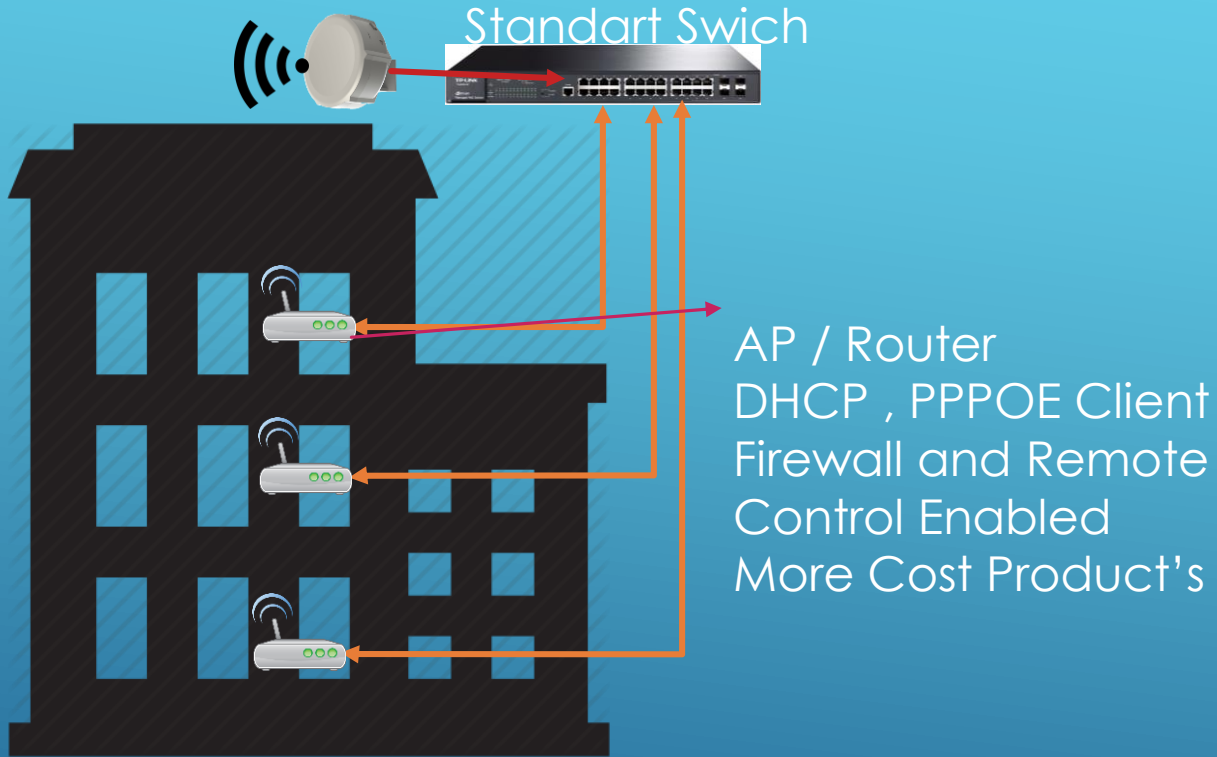


MikroTik Certified Routing Engineer



MikroTik Certified Traffic Control Engineer

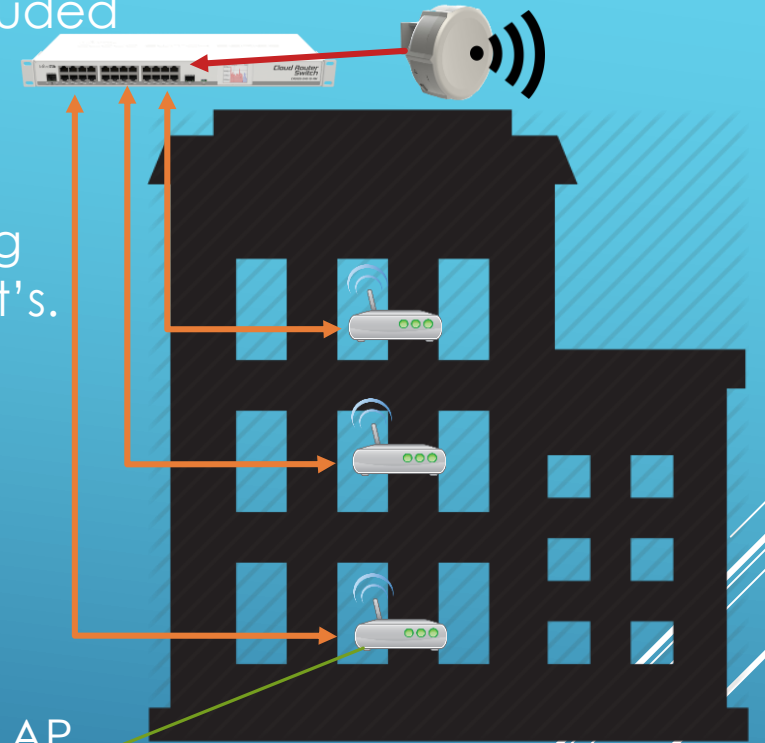
BUILDING NETWORK PLAN



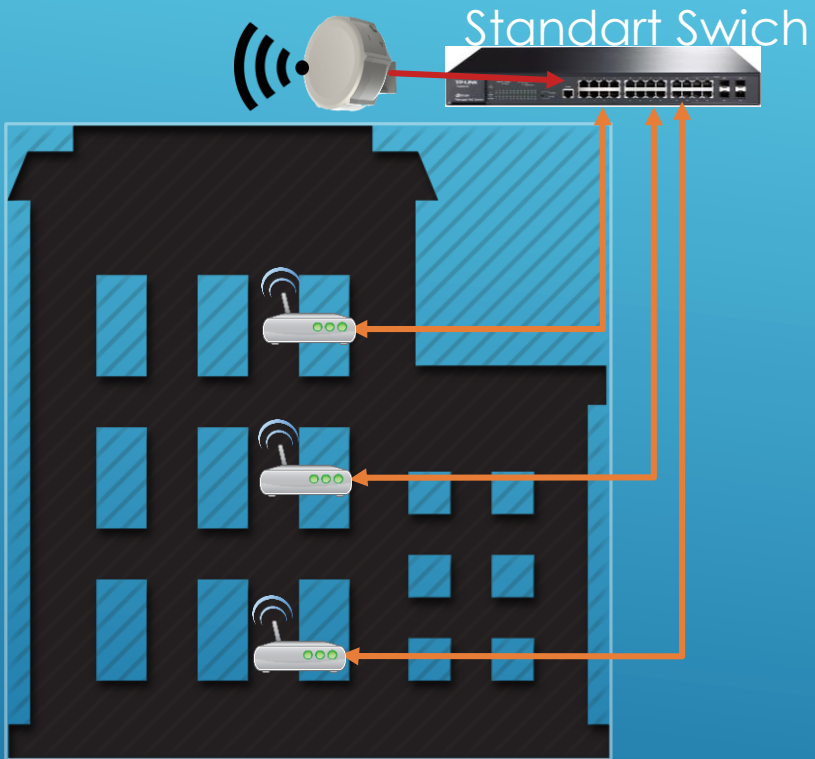
Standart Switch

AP / Router
DHCP , PPPOE Client
Firewall and Remote
Control Enabled
More Cost Product's

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



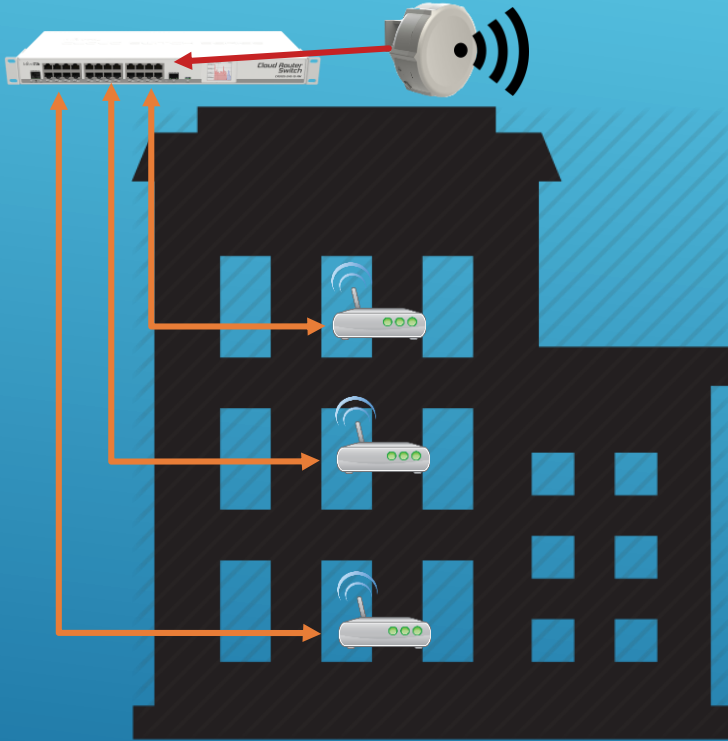
Standart AP
Don't Need DHCP
or PPPOE Client
Cost Effectly



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 SWICH 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

The screenshot shows the Mikrotik WinBox configuration interface for the wlan1 interface. The 'Wireless' tab is selected, showing settings for Mode (station bridge), Band (5GHz-A/N), Channel Width (20/40MHz Ce), Frequency (5180 MHz), SSID (MikroTik), and Wireless Protocol (802.11). Red arrows point from the text on the left to specific settings in the interface:

- Arrow 1 points to the 'Wireless' menu item in the left sidebar.
- Arrow 2 points to the wlan1 interface in the 'Interface List' table.
- Arrow 3 points to the 'Mode' dropdown menu.
- Arrow 4 points to the 'Band' dropdown menu.
- Arrow 5 points to the 'Channel Width' dropdown menu.
- Arrow 6 points to the 'OK' button in the configuration dialog.

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

Safe Mode Session: YAVUZ

Quick Set
CAPsMAN
Interfaces
Wireless
Bridge **1**
PPP
Switch
Mesh
IP
IPv6
MPLS
OpenFlow
Routing
System
Queues
Files
Log

Interface List

Name	Type	L2 MTU	Tx	Rx
0 items out of 2				

New Interface

General STP Status Traffic

3 Name: WISP_BRIDGE
Type: Bridge
MTU:
Actual MTU:
L2 MTU:
MAC Address:
ARP: enabled
Admin. MAC Address:
4 OK
Cancel
Apply
Disable
Comment
Copy
Remove
Torch

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

The screenshot shows the Mikrotik WinBox configuration interface. The left sidebar has a red circle '1' around the 'Bridge' menu item. The main window shows the 'Interface List' with a red circle '2' around the 'Bridge' tab. Below the 'Bridge' tab, there is a '+' button with a red circle '3' around it. A 'New Bridge Port' dialog box is open, showing the 'Interface' dropdown menu with 'wlan1' selected, and a red circle '4' around it. The 'Bridge' dropdown menu shows 'WISP_BRIDGE' selected. A red circle '5' is around the 'OK' button in the dialog box.

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

The screenshot shows the Mikrotik WinBox configuration interface. The left sidebar contains a menu with 'Bridge' highlighted (1). The main window shows the 'Bridge' configuration page (2) with a 'New Bridge Port' dialog box open. In the dialog, the 'Interface' dropdown is set to 'ether1' (3) and the 'Bridge' dropdown is set to 'WISP_BRIDGE' (4). The 'OK' button is circled in red (5). The 'New Bridge Port' dialog also shows fields for Priority (80), Path Cost (10), Horizon, Edge (auto), Point To Point (auto), External FDB (auto), and an 'Auto Isolate' checkbox.

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 configuration interface. The left sidebar contains a tree view of configuration categories. The main window displays the 'DHCP Client' configuration for the 'WISP_BRIDGE' interface. The configuration is as follows:

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

The 'DHCP Client' configuration window shows the following settings:

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

The configuration is saved and applied. The 'New DHCP Client' dialog box is shown with the 'Interface' set to 'WISP_BRIDGE' and the 'Status' set to 'OK'.

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)

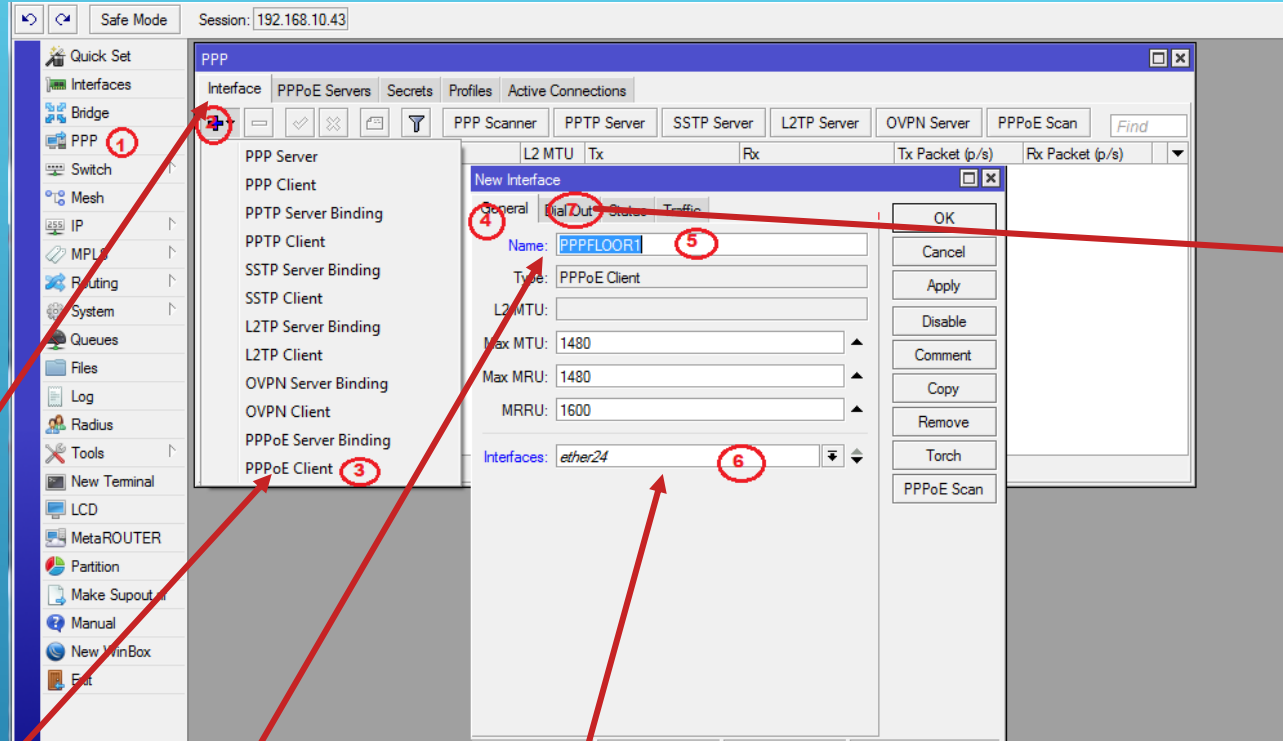
CRS devices basic configuration steps.



- 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

PPP

Interface PPPoE Servers Secrets Profiles Active Connections

PPP Scanner PPTP Server SSTP Server L2TP Server OVPN Server PPPoE Scan Find

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

New Interface

General Dial Out Status Traffic

Service: [dropdown] (4)

AC Name: [dropdown]

User: floor1 (5)

Password: floor1 (6)

Profile: default

Keepalive Timeout: 60

Dial On Demand
 Use Peer DNS
 Add Default Route (7)

Default Route Distance: 1

Allow: mschap2 mschap1
 chap pap

OK (8) 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
❖❖PPPFLOOR1	PPPoE Client			0 bps
❖❖PPPFLOOR2	PPPoE Client			0 bps
❖❖PPPFLOOR3	PPPoE Client			0 bps
❖❖PPPFLOOR4	PPPoE Client			0 bps
❖❖PPPFLOOR5	PPPoE Client			0 bps
❖❖PPPFLOOR6	PPPoE Client			0 bps
❖❖PPPFLOOR10	PPPoE Client			0 bps

Add PPPOE Client All Floor account's



Configuration RouterOS Switch / GW (CRS125 or Another)

The screenshot shows the RouterOS WinBox interface. On the left, the 'IP' menu is highlighted with a red circle '1'. Below it, the 'Pool' option is highlighted with a red circle '2'. In the main window, the 'IP Pool' list is shown with a '+' button highlighted by a red circle '3'. A 'New IP Pool' dialog box is open, showing the 'Name' field with 'Pool_Floor1' and a red circle '4', and the 'Addresses' field with '192.168.1.20-192.168.1.254' and a red circle '5'. The 'Next Pool' field is set to 'none'.

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
```

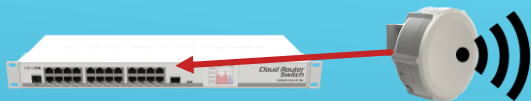
Name	Addresses	Next Pool
Pool_Floor1	192.168.1.20-192.168.1.254	none
Pool_Floor2	192.168.2.20-192.168.2.254	none
Pool_Floor3	192.168.3.20-192.168.3.254	none



Configuration RouterOS Switch / GW (CRS125 or Another)

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)

The screenshot shows the Mikrotik WinBox interface for configuring a NAT rule. The 'New NAT Rule' dialog box is open, and the following settings are visible:

- Chain:** srcnat (highlighted with a red circle 3)
- Src. Address:** 192.168.1.0/24 (highlighted with a red circle 4)
- Action:** masquerade (highlighted with a red circle 5)

Red arrows point from the numbered circles to the corresponding elements in the interface:

- 1: Points to the 'IP' menu item in the left sidebar.
- 2: Points to the 'Firewall' menu item in the left sidebar.
- 3: Points to the 'Chain' dropdown menu.
- 4: Points to the 'Src. Address' text input field.
- 5: Points to the 'Action' dropdown menu.

Masquerade Local Network - (all internal floor ip add masq)

`/ip firewall nat add chain=srcnat src-address=192.168.1.0/24 action=masquerade`

Configuration RouterOS Switch / GW (CRS125 or Another)



The screenshot displays the MikroTik WinBox Firewall configuration interface. The 'Mangle' tab is selected, and the 'New Mangle Rule' dialog box is open. The configuration is as follows:

- Chain:** prerouting (4)
- Src. Address:** 192.168.1.0/24 (5)
- Action:** mark connection (6)
- New Connection Mark:** Conn_Floor1 (7)
- Passthrough:**

The background shows the Firewall menu with 'Mangle' (3) and 'Firewall' (2) highlighted.

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)



Route List

	Routes	Nexthops	Rules	VRF
DAS	0.0.0.0/0	192.168.10.1 reachable	ether1	
DAC	192.168.1.0/24	ether1 reachable		
DC	192.168.2.0/24	ether2 unreachable		
DC	192.168.3.0/24	ether3 unreachable		
DAC	192.168.10.0/24	ether1 reachable		

New Route

General Attributes

Dst. Address: 0.0.0.0/0

Gateway: PPPFLOOR1

Check Gateway: []

Type: unicast

Distance: 1

Scope: 3

Target Scope: 10

Routing Mark: Route_Floor1

Pref. Source: []

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
						<input type="text" value="Find"/> <input type="text" value="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 ;

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