



MICROSYSTEM

SMART WI-FI PLATFORM

Smart WiFi Solutions





- ✓ What is Microsystem Smart WI-FI Platform.
- ✓ What is Mikrotik Load Balancing (PCC Method).
- ✓ What are the difficulties in (PCC Method).
- ✓ How to connect Mikrotik with a Microsystem Smart WI-FI Platform .
- ✓ How to Skip all difficulties in (PCC Method) using Microsystem Smart WI-FI Platform .
- ✓ LIVE DEMO



Microsystem Smart WI-FI Platform



**Microsystem Smart WI-FI
Platform is web platform
multi tenant, using for WiFi
marketing, monetization
solutions and automated
internet management.**





Introduction

PCC matcher will allow you to divide traffic into equal streams with ability to keep packets with specific set of options in one particular stream (you can specify this set of options from src-address, src-port, dst-address, dst-port)

Theory

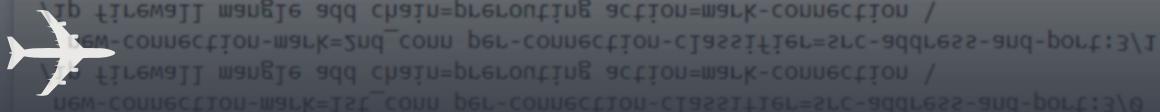
PCC takes selected fields from IP header, and with the help of a hashing algorithm converts selected fields into 32-bit value. This value then is divided by a specified *Denominator* and the remainder then is compared to a specified *Remainder*, if equal then packet will be captured. You can choose from src-address, dst-address, src-port, dst-port from the header to use in this operation.

```
per-connection-classifier=
PerConnectionClassifier ::= [!]ValuesToHash:Denominator/Remainder
    Remainder ::= 0..4294967295      (integer number)
    Denominator ::= 1..4294967295    (integer number)
    ValuesToHash ::= both-addresses|both-ports|dst-address-and-port|
                    src-address|src-port|both-addresses-and-ports|dst-address|dst-port|src-address-and-port
```

Example

This configuration will divide all connections into 3 groups based on source address and port

```
/ip firewall mangle add chain=prerouting action=mark-connection \
    new-connection-mark=1st_conn per-connection-classifier=src-address-and-port:3/0
/ip firewall mangle add chain=prerouting action=mark-connection \
    new-connection-mark=2nd_conn per-connection-classifier=src-address-and-port:3/1
/ip firewall mangle add chain=prerouting action=mark-connection \
    new-connection-mark=3rd_conn per-connection-classifier=src-address-and-port:3/2
```





```
/ ip address  
add address=192.168.0.1/24 network=192.168.0.0 broadcast=192.168.0.255 interface=LAN  
add address=10.111.0.2/24 network=10.111.0.0 broadcast=10.111.0.255 interface=ISP1  
add address=10.112.0.2/24 network=10.112.0.0 broadcast=10.112.0.255 interface=ISP2
```

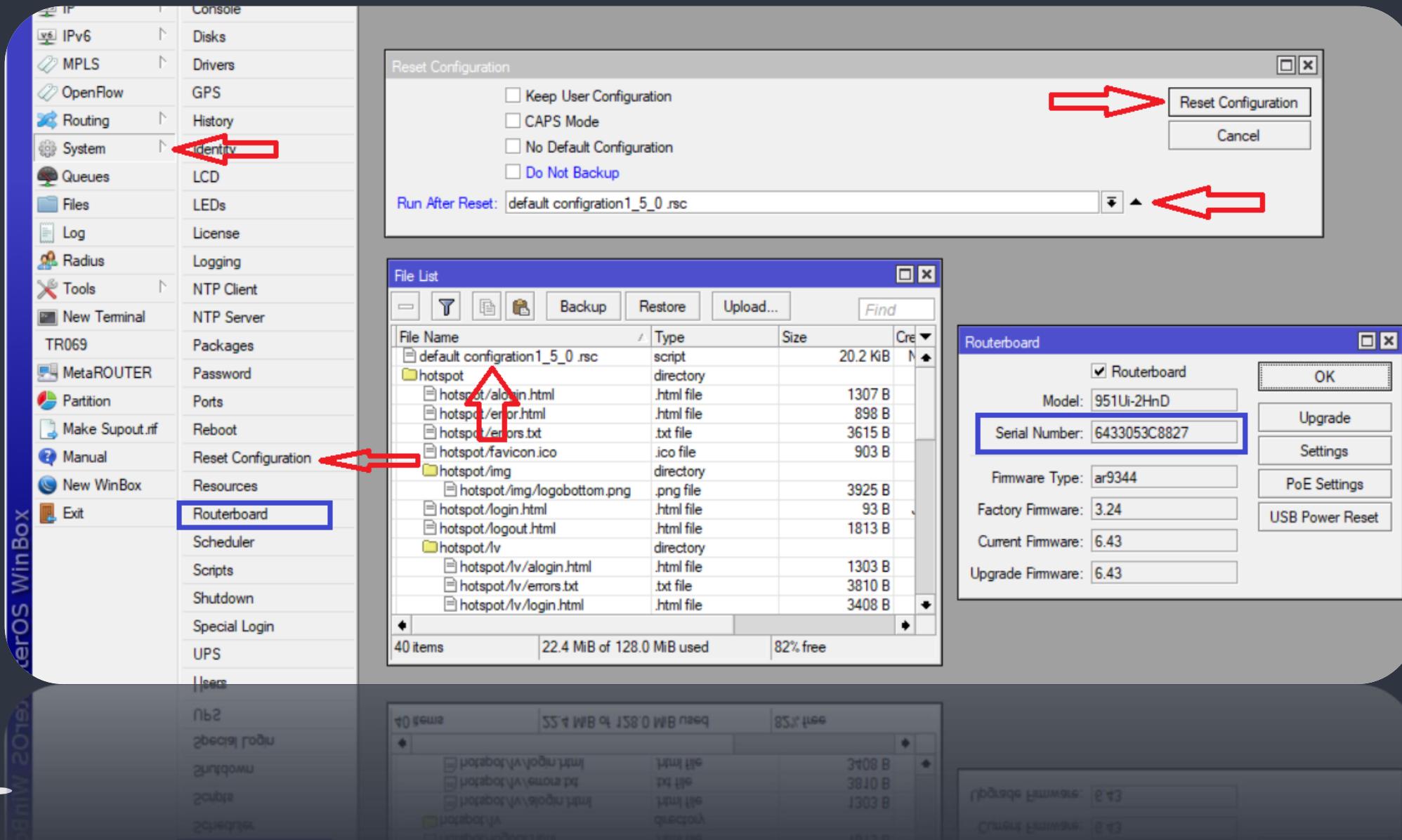
```
/ ip firewall mangle  
add chain=prerouting dst-address=10.111.0.0/24 action=accept in-interface=LAN  
add chain=prerouting dst-address=10.112.0.0/24 action=accept in-interface=LAN  
add chain=prerouting in-interface=ISP1 connection-mark=no-mark action=mark-connection \  
    new-connection-mark=ISP1_conn  
add chain=prerouting in-interface=ISP2 connection-mark=no-mark action=mark-connection \  
    new-connection-mark=ISP2_conn  
add chain=prerouting in-interface=LAN connection-mark=no-mark dst-address-type=!local \  
    per-connection-classifier=both-addresses:2/0 action=mark-connection new-connection-mark=ISP1_conn  
add chain=prerouting in-interface=LAN connection-mark=no-mark dst-address-type=!local \  
    per-connection-classifier=both-addresses:2/1 action=mark-connection new-connection-mark=ISP2_conn  
add chain=prerouting connection-mark=ISP1_conn in-interface=LAN action=mark-routing \  
    new-routing-mark=to_ISP1  
add chain=prerouting connection-mark=ISP2_conn in-interface=LAN action=mark-routing \  
    new-routing-mark=to_ISP2  
add chain=output connection-mark=ISP1_conn action=mark-routing new-routing-mark=to_ISP1  
add chain=output connection-mark=ISP2_conn action=mark-routing new-routing-mark=to_ISP2
```

```
/ ip route  
add dst-address=0.0.0.0/0 gateway=10.111.0.1 routing-mark=to_ISP1 check-gateway=ping  
add dst-address=0.0.0.0/0 gateway=10.112.0.1 routing-mark=to_ISP2 check-gateway=ping  
add dst-address=0.0.0.0/0 gateway=10.111.0.1 distance=1 check-gateway=ping  
add dst-address=0.0.0.0/0 gateway=10.112.0.1 distance=2 check-gateway=ping
```

```
/ ip firewall nat  
add chain=srcnat out-interface=ISP1 action=masquerade  
add chain=srcnat out-interface=ISP2 action=masquerade
```



qqq cmařu=srcařu řtouf-řnterřtce=Išřs ačřtou=mawspuřeře
qqq cmařu=srcařu řtouf-řnterřtce=Išřs ačřtou=mawspuřeře
\\ řtouf-řnterřtce=Išřs ačřtou=mawspuřeře
qqq qstfoucse=5 cmeck-Bařemel=řtouf



The screenshot shows the WinBox interface for managing a MikroTik router. The left sidebar lists various system and network settings. The 'Routerboard' option is highlighted with a blue box and a red arrow pointing to it.

The main window contains three overlapping dialog boxes:

- Reset Configuration**: A dialog with checkboxes for configuration options like 'Keep User Configuration' and 'Do Not Backup'. It includes a 'Run After Reset' field set to 'default configuration1_5_0.rsc'. A red arrow points to the 'Reset Configuration' button.
- File List**: A file browser showing the contents of the 'hotspot' directory. The 'hotspot' folder is highlighted with a red box and a red arrow. The list includes files like 'allogin.html', 'error.html', 'errors.txt', 'favicon.ico', 'logobottom.png', 'login.html', 'logout.html', and 'lv' sub-directories.
- Routerboard**: A configuration dialog for the router's hardware. It shows the 'Model' as '951Ui-2HnD', 'Serial Number' as '6433053C8827', 'Firmware Type' as 'ar9344', and other details. A red box highlights the 'Serial Number' field, and a red arrow points to the 'OK' button.



Mikrotik & Smart WI-FI Platform



url = <http://your-company.microsystem.com.eg/branches>

Basic settings

Hardware Type

Mikrotik

Mikrotik Username

username

Mikrotik Password

password

Radius Secret



Serial

6433053C8827

IP Address

000.000.000.000

Device Mac

00:00:00:00:00:00

Monthly Quota GB

300

Renew day

15





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url = <http://your-company.microsystem.com.eg/branches>

Internet Connection

Connection type

Load balancing



IP/Gateway

Speed

IP

192.168.1.10

Gateway

192.168.1.1

2 M ▾



IP

192.168.2.10

Gateway

192.168.2.1

4 M ▾



192.168.2.6

GWMS





LIVE DEMO





THANK YOU

