WELCOME TO MUM INDIA 2015

TARA CONSULTANTS PVT LTD

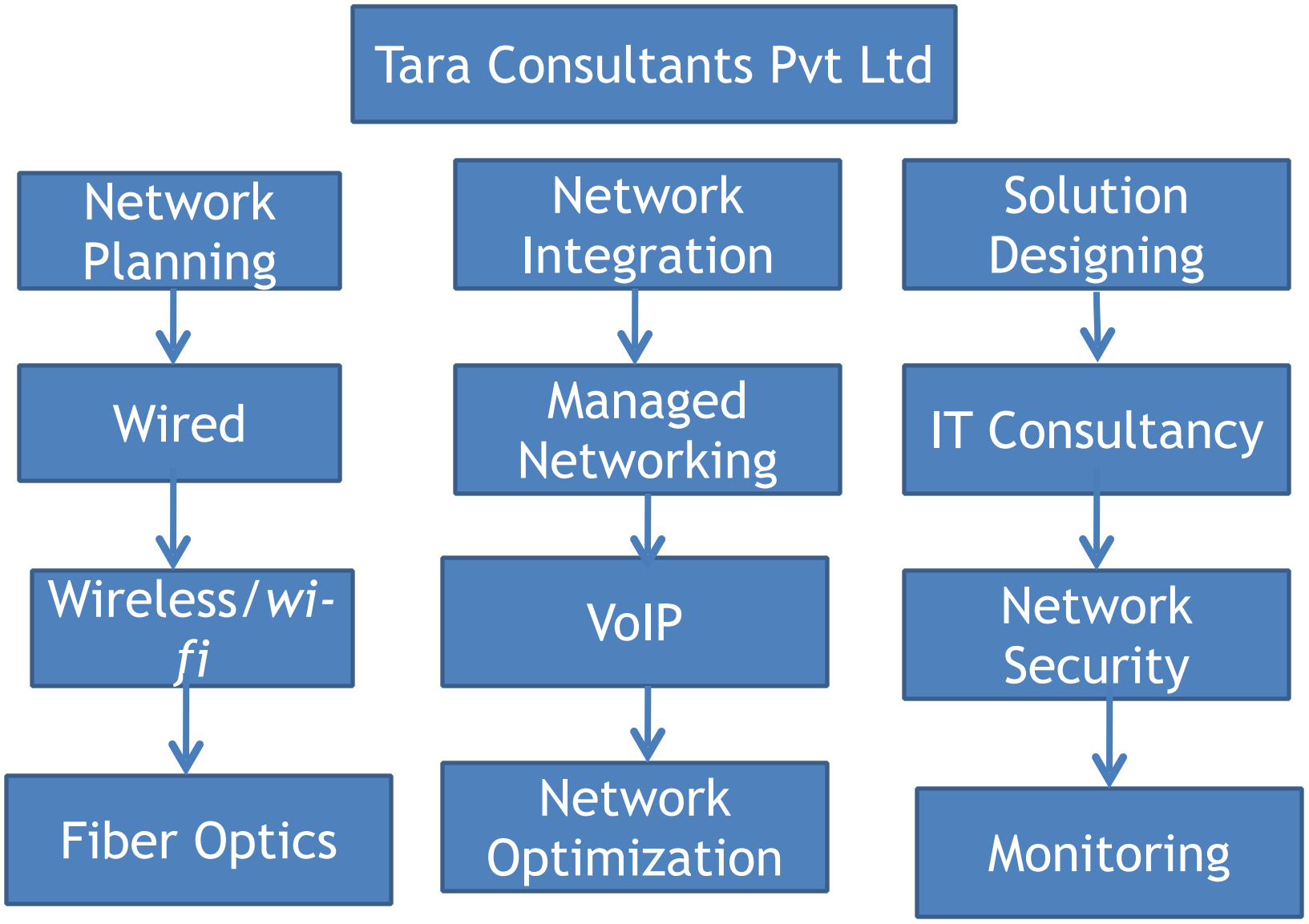
tcpl online

WELCOME TO MUM INDIA 2015

About Us

Tara Consultants Pvt Ltd, a multi-faceted and multi-activity Group, a trusted name in developing Mass Marketing Concepts, Software Development. Networking Solutions – Wired and Wireless and Target based mass Marketing, TCPL is also commended and known for meticulous and time scheduled planning, implementation, Delivery and completion of large-scale solutions and projects. TCPL is energized and managed by a team of Professionals.

What We Do


Tara Consultants Pvt Ltd
Network Planning
Wired
Wireless/*wi-fi*
Fiber Optics
Network Integration
Managed Networking
VoIP
Network Optimization
Solution Designing
IT Consultancy
Network Security
Monitoring

Agenda

User's Self Service Portal
- For PPPoE Users
- For Hotspot Users

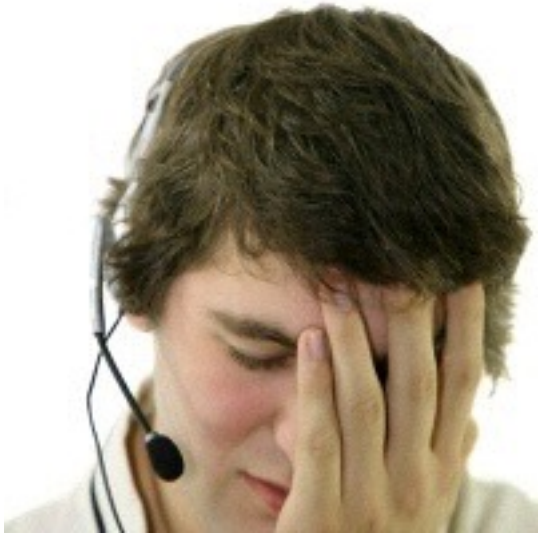
Internet Load Balancing
- PCC(Per Connection Classifier)
- Routing Policy
- Spillover

By Vikas Kumar Gupta

Why User's Self Service Portal

- Are you frustrated with client's/User's daily calls for asking data usage or password change requests

- Does it irritates you when client asks that he/she haven't login, how there data consumes so much.



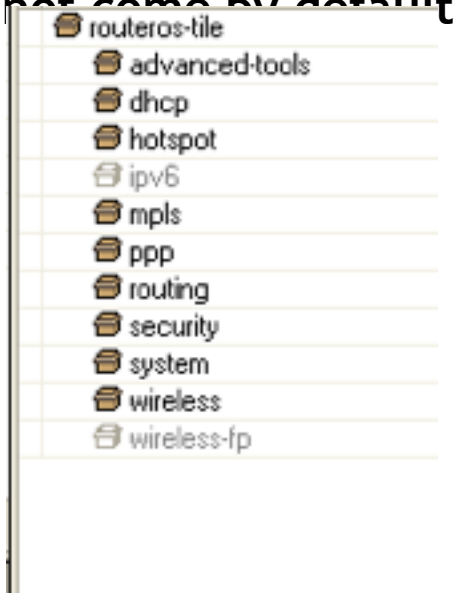
Here is the Answer

MikroTik User Manager
A Radius manager package for Mikrotik, to enable Centralized authentication of Users

Level number	0 (Trial mode)	1 (Free Demo)	3 (WISP CPE)	4 (WISP)	5 (WISP)	6 (Controller)
User manager active sessions	24h trial	1	10	20	50	Unlimited

MikroTik User Manager does not come by default in packages

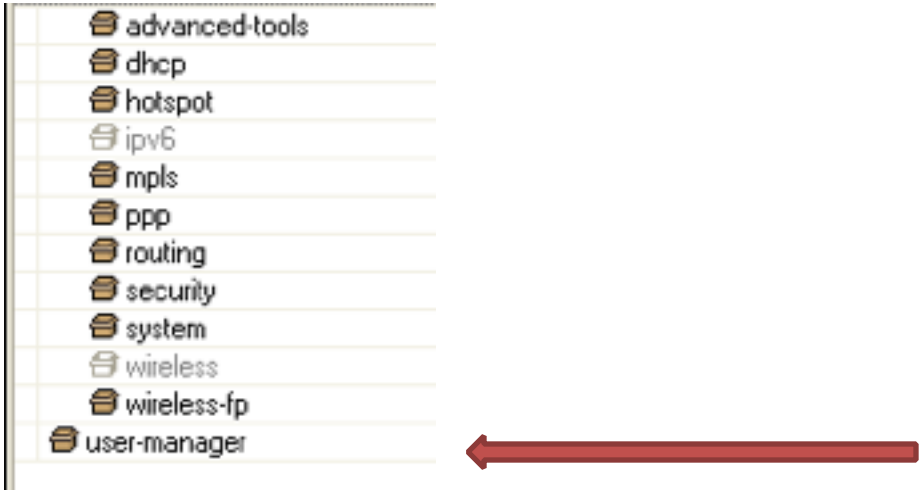
System > Packages



Install User Manager available in Extra Package from MikroTik Download Page

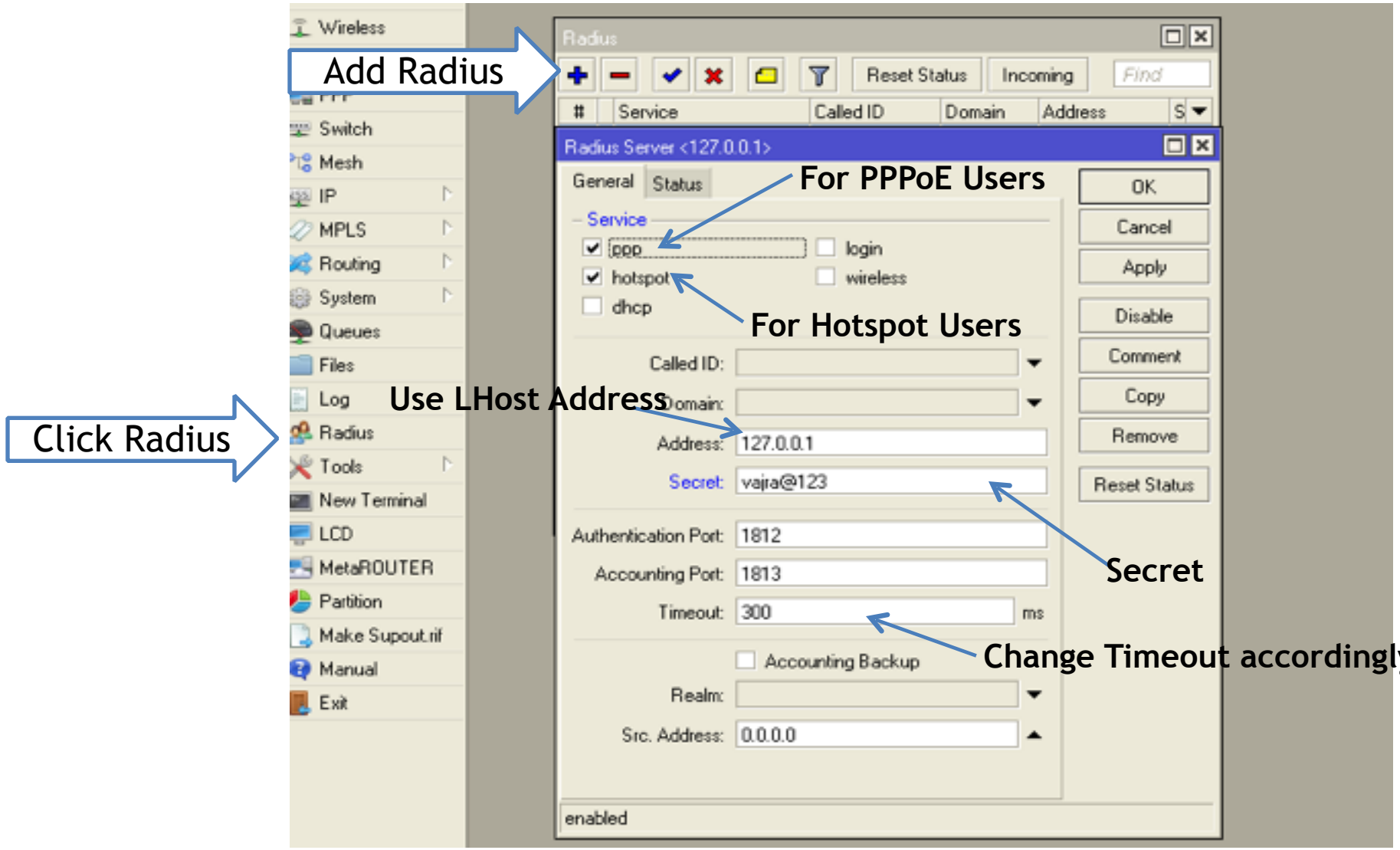
http://www.mikrotik.com/download

After adding user manager

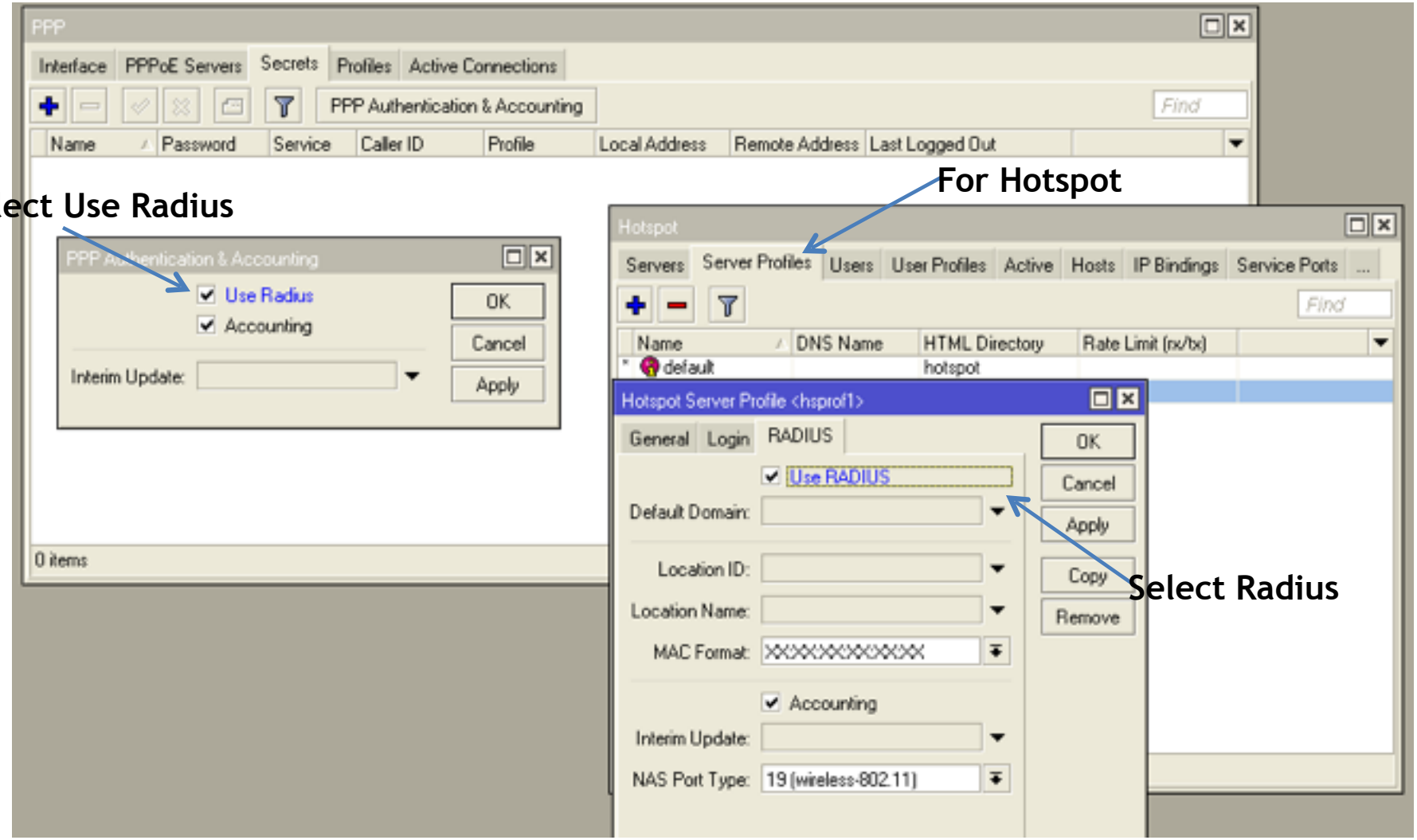


Note: Download User manager version according to the ROS version and ROS architecture.

Configure RouterOS to enable authentication of Users from User Manager



Configure RouterOS to enable authentication of Users from User Manager

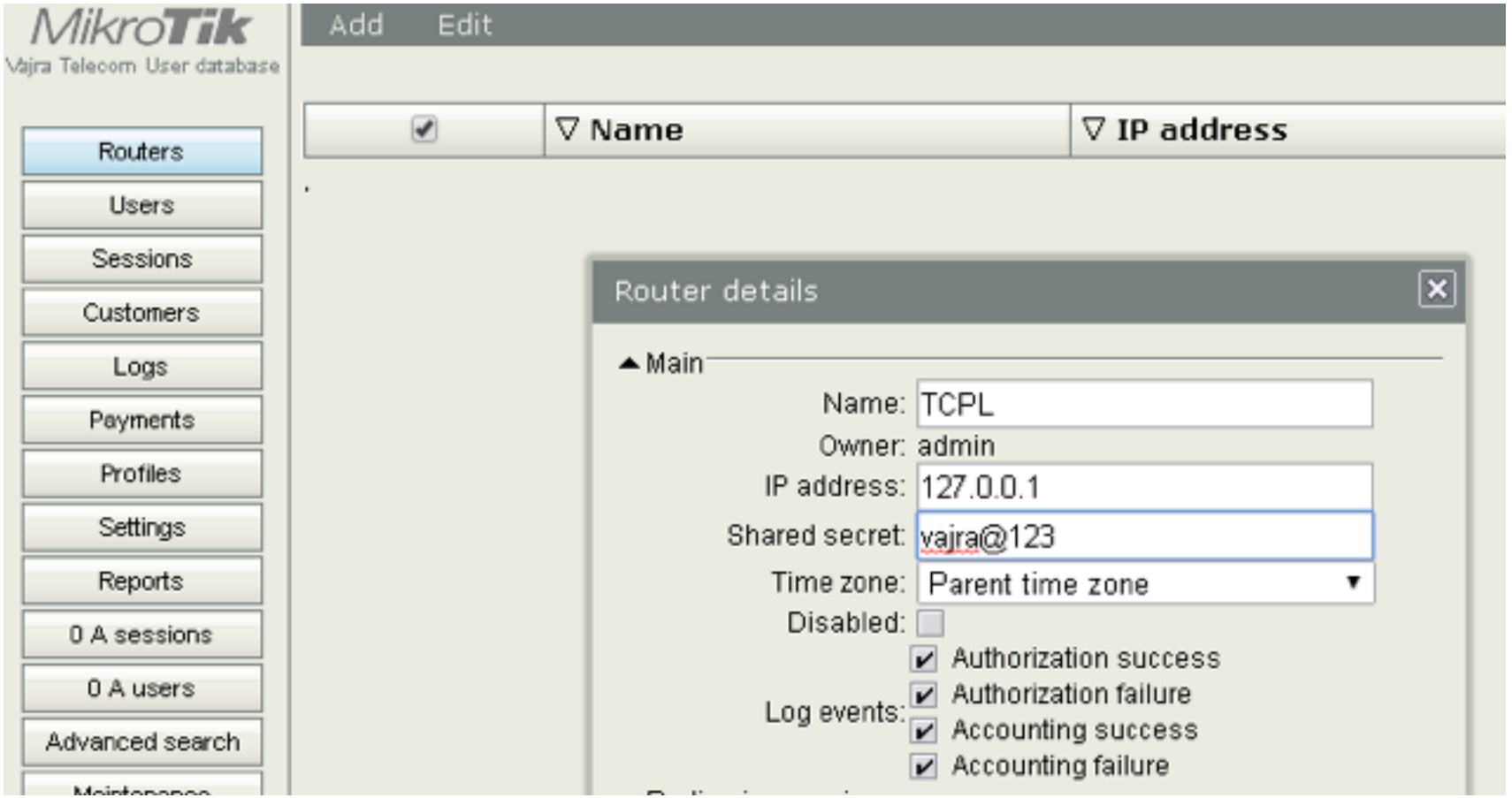


Time to Configure User Manager for Self Service Portal

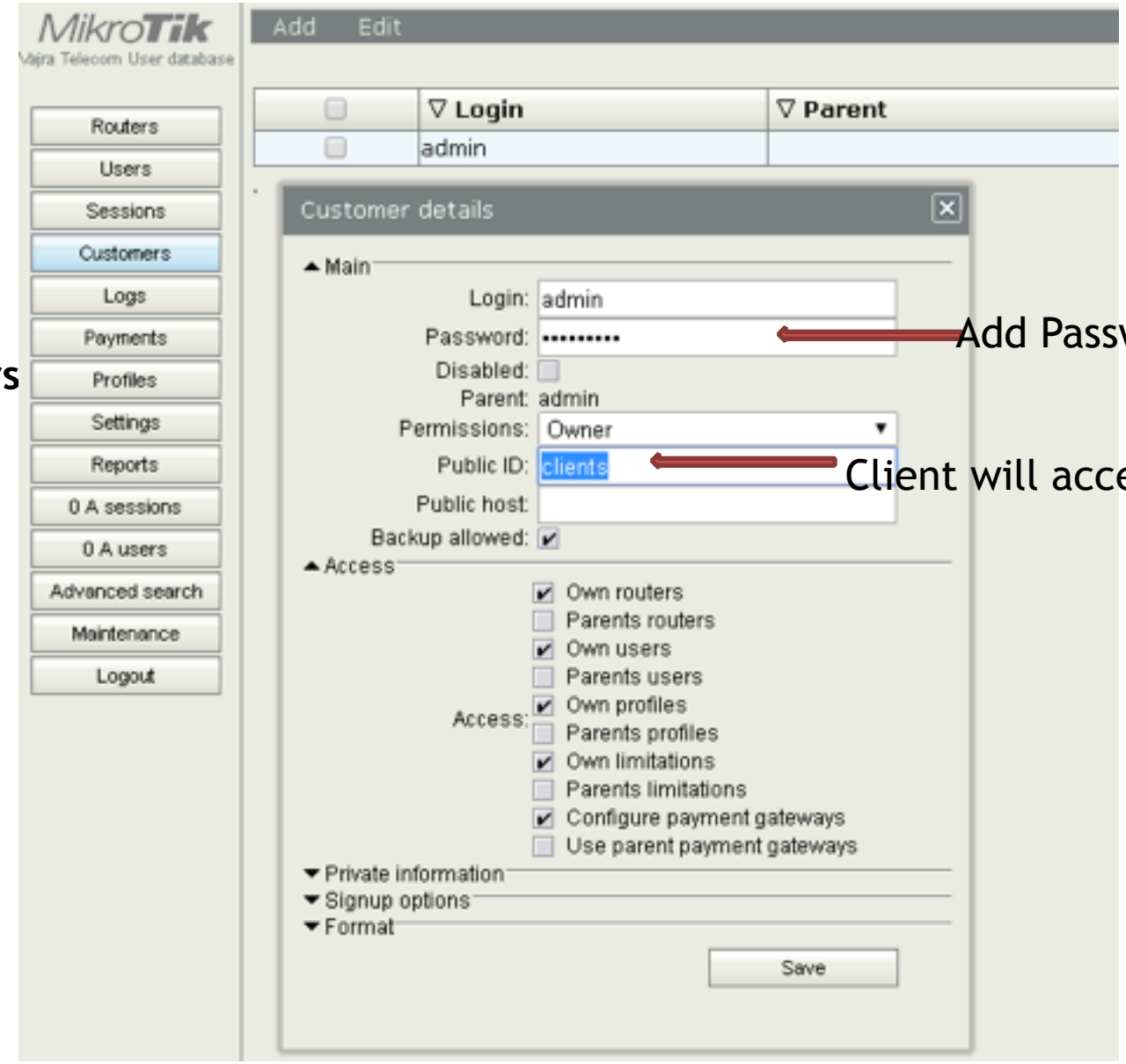
1. Open Web browser and type address http://Router_IP/userman

1. Default Username is “admin” with no password.

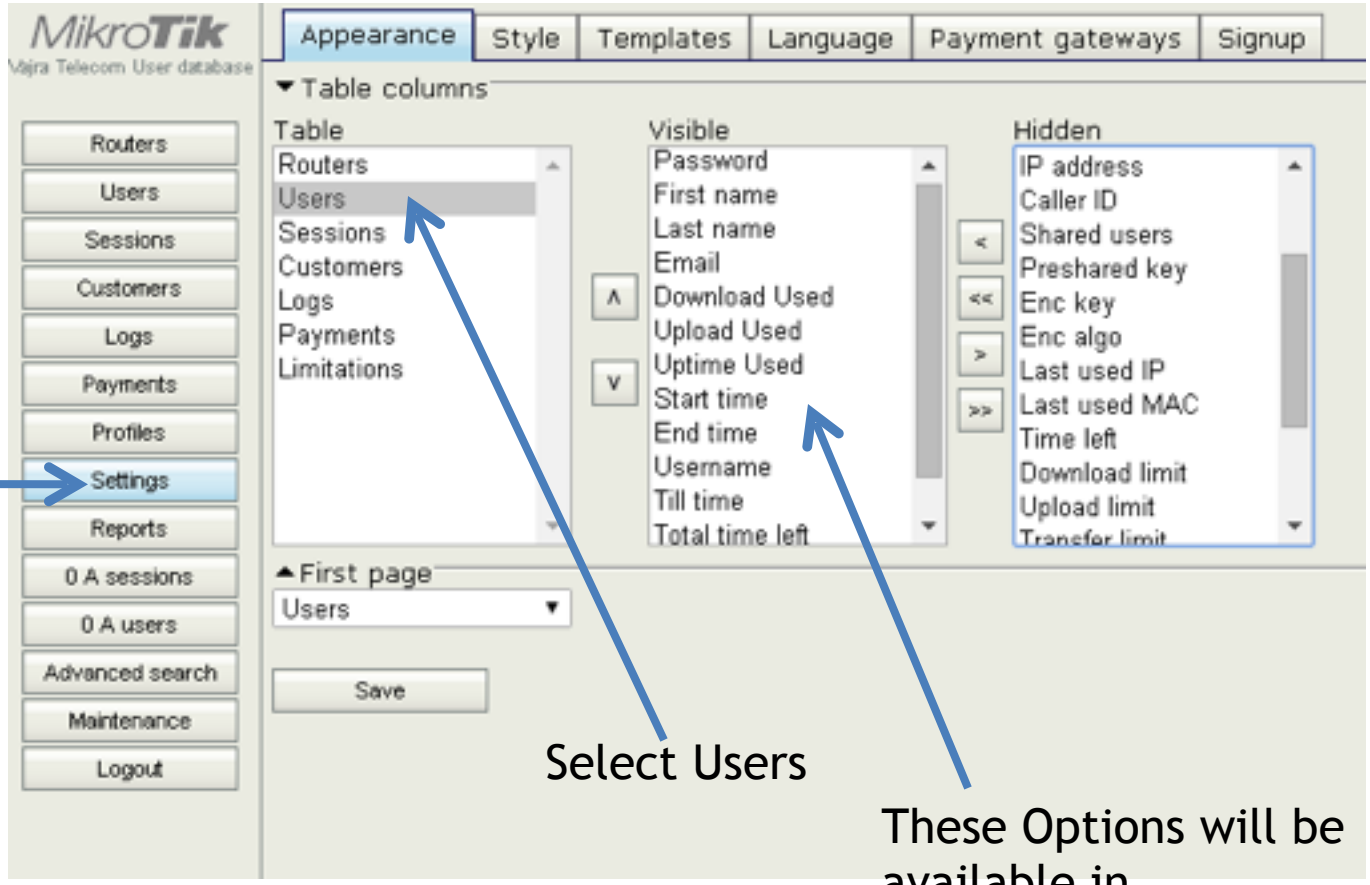
2. Add Router


MikroTik
Vajra Telecom User database
Routers
Users
Sessions
Customers
Logs
Payments
Profiles
Settings
Reports
0 A sessions
0 A users
Advanced search
Add
Edit
Name
IP address
Router details
Main
Name: TCPL
Owner: admin
IP address: 127.0.0.1
Shared secret: vajra@123
Time zone: Parent time zone
Disabled:
Log events:
Authorization success
Authorization failure
Accounting success
Accounting failure

3. Add Customers

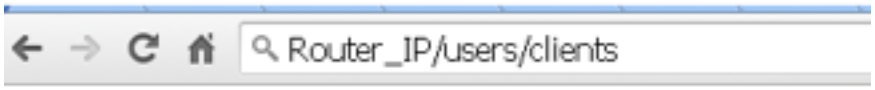


4. Change Appearance of User's Self Service Portal

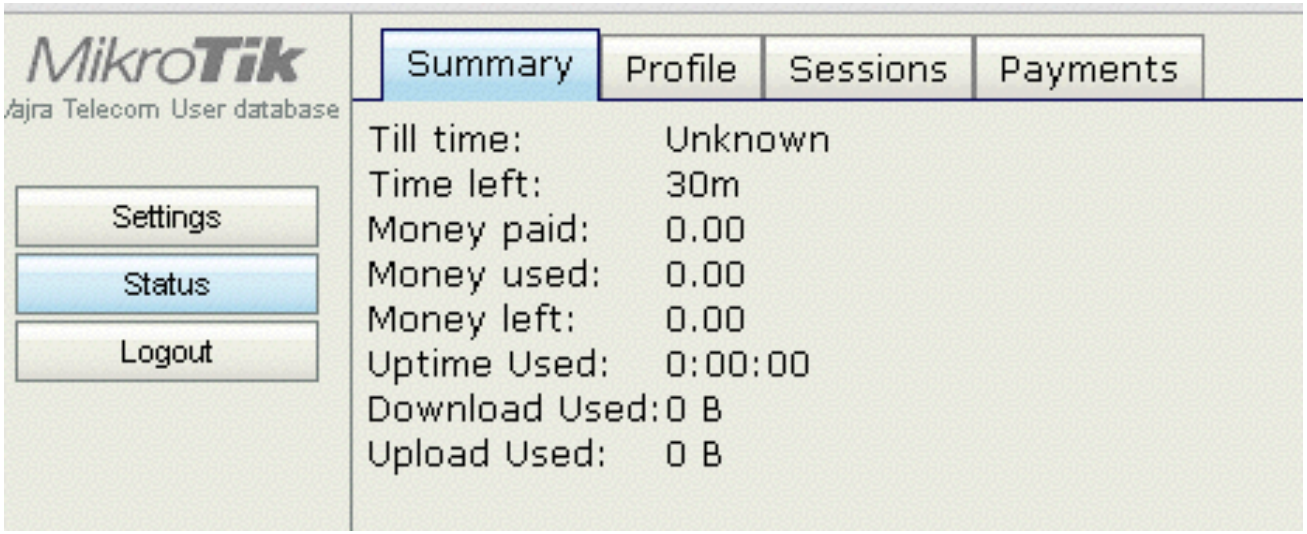


5. Now Add Profiles and Users Accordingly

6. Now its time to check User's Self Service Portal
   - Type http://Router_IP/users/clients in Address Bar

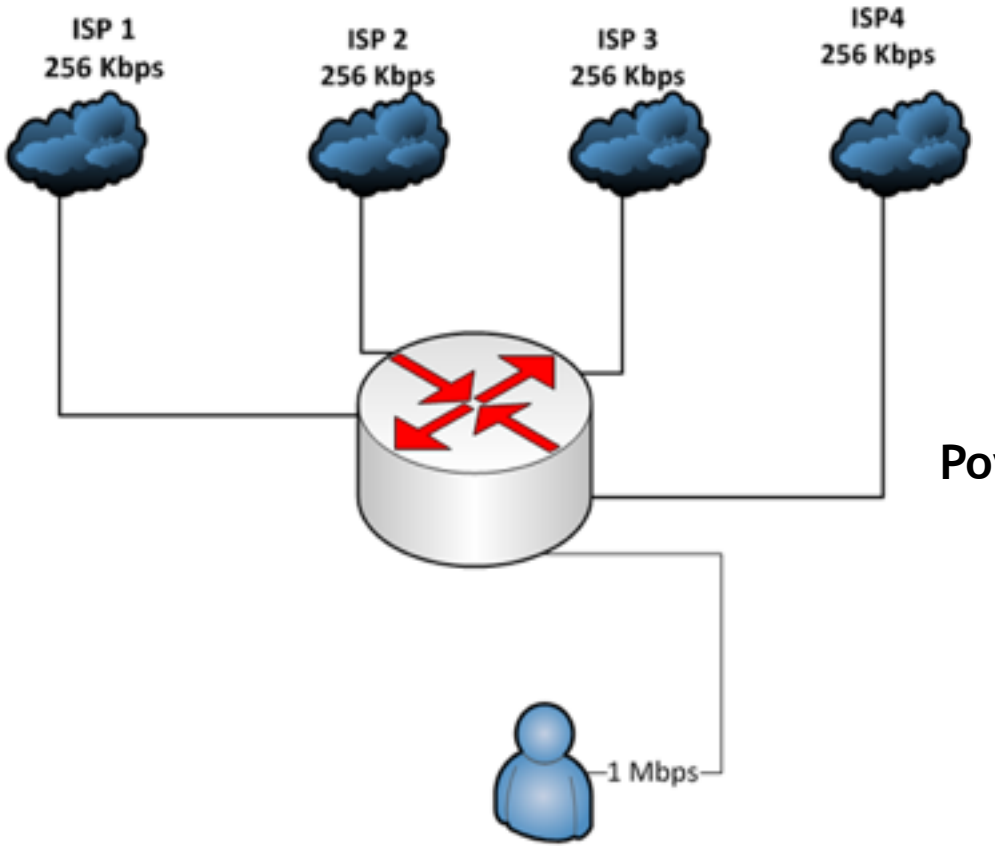


7. Client/User can check the available options provided by admin



Why Internet Load Balancing

1. **Multiple Slow Speed Internet connections.**



Power in Unity

How to do that

1. **IP Addressing**

```
/ ip address
    add address=192.168.0.1/24 network=192.168.0.0 interface=LAN

    add address=10.111.0.2/24 network=10.111.0.0 interface=ISP1

    add address=10.112.0.2/24 network=10.112.0.0 interface=ISP2

    add address=10.113.0.2/24 network=10.113.0.0 interface=ISP3

    add address=10.114.0.2/24 network=10.114.0.0 interface=ISP4
```

Marking Connections

```
/ 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 dst-address=10.113.0.0/24  action=accept in-interface=LAN
add chain=prerouting dst-address=10.114.0.0/24  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=ISP2 connection-mark=no-mark action=mark-connection
    new-connection-mark=ISP3_conn
add chain=prerouting in-interface=ISP2 connection-mark=no-mark action=mark-connection
    new-connection-mark=ISP4_conn
```

Marking Continued…….

```
add chain=prerouting  in-interface=LAN connection-mark=no-mark dst-address-type=!local \
   per-connection-classifier=both-addresses:4/0 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:4/1 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:4/2 action=mark-connection new-connection-
mark=ISP3_conn

add chain=prerouting  in-interface=LAN connection-mark=no-mark dst-address-type=!local \
   per-connection-classifier=both-addresses:4/3 action=mark-connection new-connection-
mark=ISP4_conn
```

PCC for 4 Connections

Marking Continued….

```
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=prerouting connection-mark=ISP3_conn in-interface=LAN action=mark-routing \
    new-routing-mark=to_ISP3
add chain=prerouting connection-mark=ISP4_conn in-interface=LAN action=mark-routing \
    new-routing-mark=to_ISP4

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
add chain=output connection-mark=ISP3_conn action=mark-routing new-routing-mark=to_ISP3
add chain=output connection-mark=ISP4_conn action=mark-routing new-routing-mark=to_ISP4
```

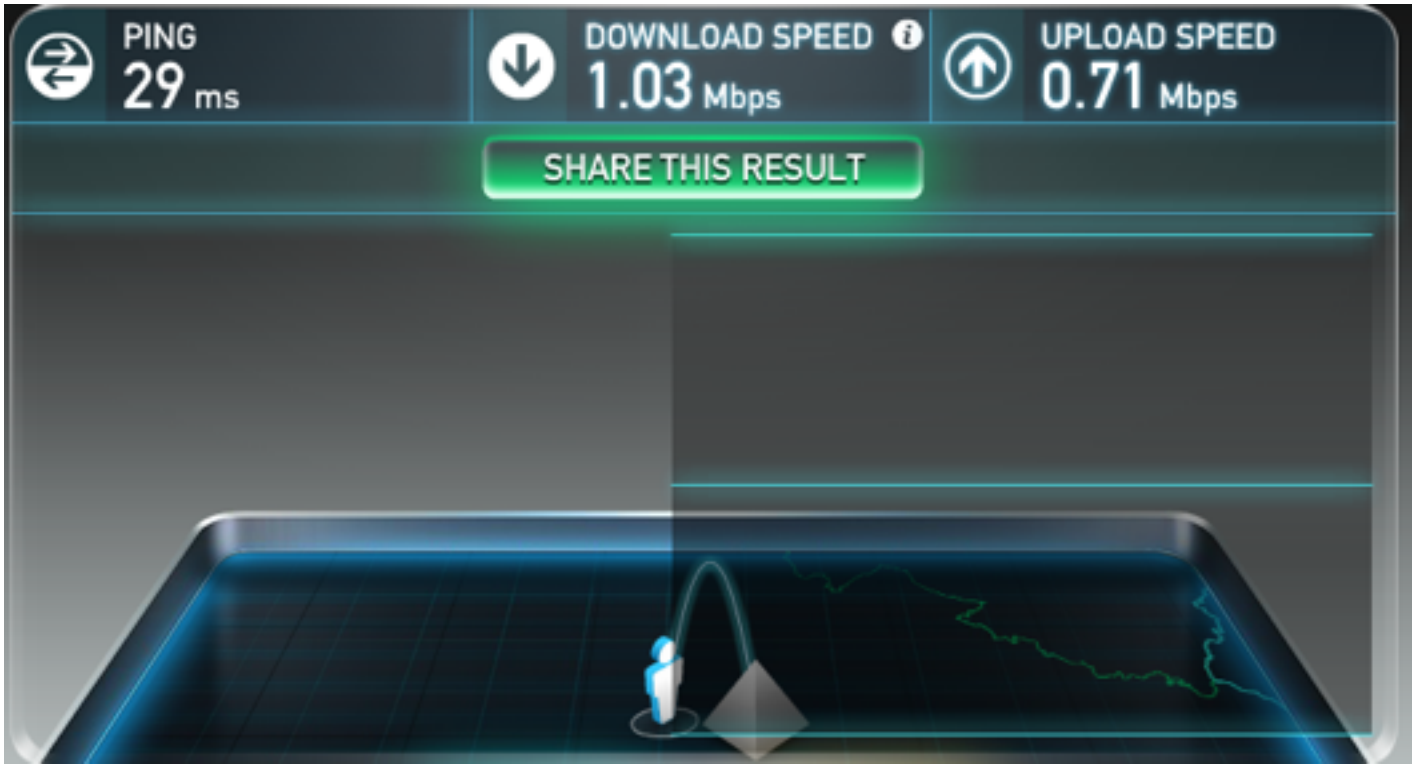
IP Routing

```
/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=10.113.0.1 routing-mark=to_ISP3 check-gateway=ping
add dst-address=0.0.0.0/0 gateway=10.114.0.1 routing-mark=to_ISP4 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
add dst-address=0.0.0.0/0 gateway=10.113.0.1 distance=3 check-gateway=ping
add dst-address=0.0.0.0/0 gateway=10.114.0.1 distance=4 check-gateway=ping
```

IP Nating

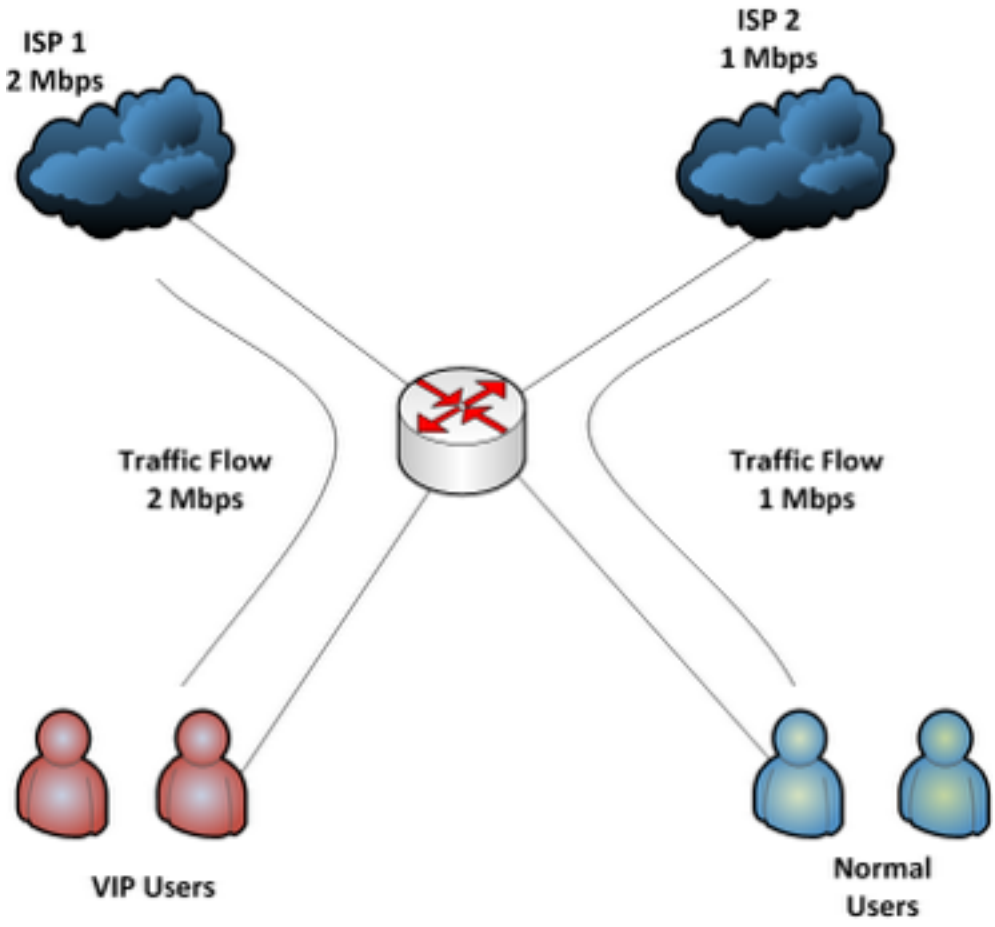
```
/ ip firewall nat

add chain=srcnat out-interface=ISP1 action=masquerade

add chain=srcnat out-interface=ISP2 action=masquerade

add chain=srcnat out-interface=ISP3 action=masquerade

add chain=srcnat out-interface=ISP4 action=masquerade
```

Result at User's Machine



This is on Broadband Internet Connections

2. Want to provide high speed connections to VIP members only



IP Addressing

```
/ ip address
    add address=192.168.0.1/24 network=192.168.0.0 interface=LAN

    add address=10.111.0.2/24 network=10.111.0.0 interface=ISP1 _2Mb

    add address=10.112.0.2/24 network=10.112.0.0 interface=ISP2 _1Mb
```

Marking

```
/ip firewall mangle

add chain=prerouting  src-address=192.168.0.2/32 action=mark-routing
new-routing-mark=vip_2Mb
add chain=prerouting  src-address=192.168.0.3/32 action=mark-routing
new-routing-mark=vip_2Mb
add chain=prerouting src-address=192.168.0.11/32 action=mark-routing
new-routing-mark=user_1Mb
add chain=prerouting src-address=192.168.0.12/32 action=mark-routing
new-routing-mark=user_1Mb
```

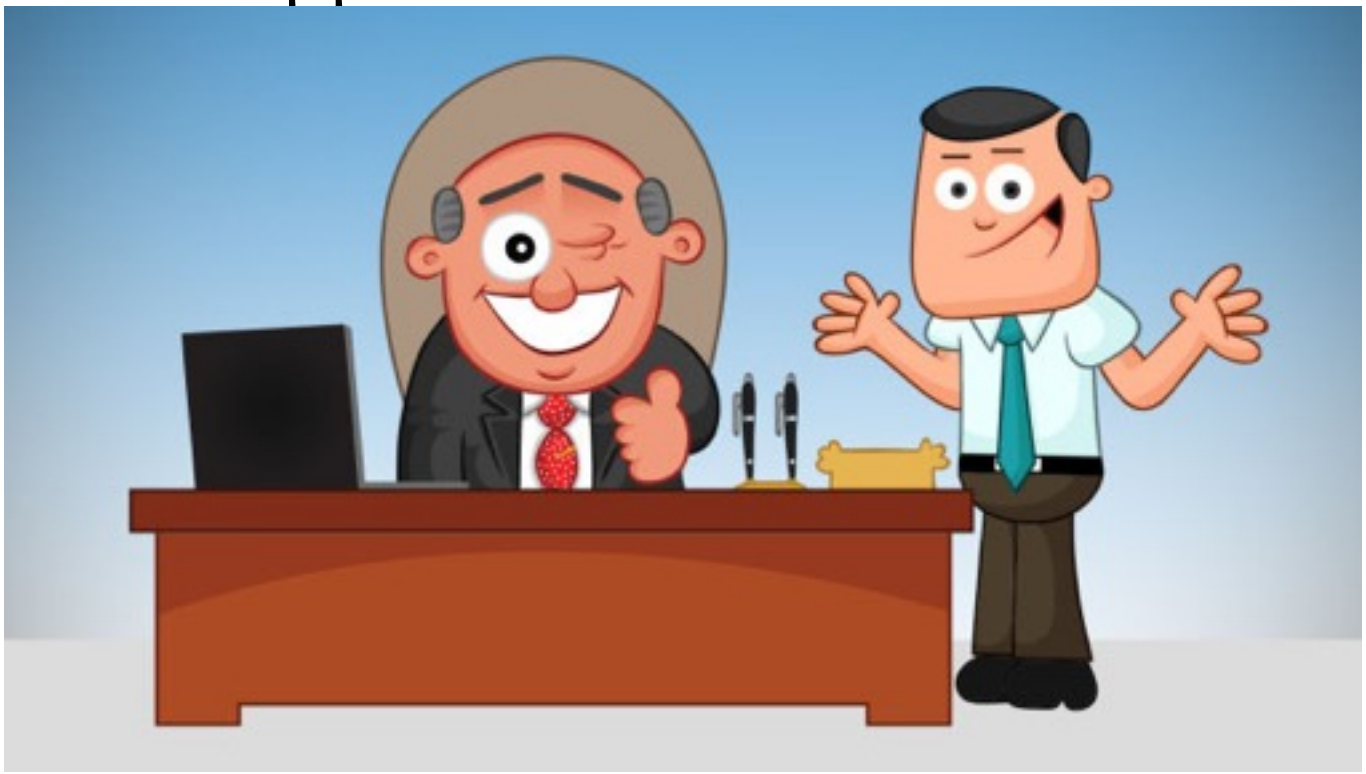
Natting

```
/ ip firewall nat
add chain=srcnat out-interface=ISP1_2Mb action=masquerade
add chain=srcnat out-interface=ISP2_1Mb action=masquerade
```

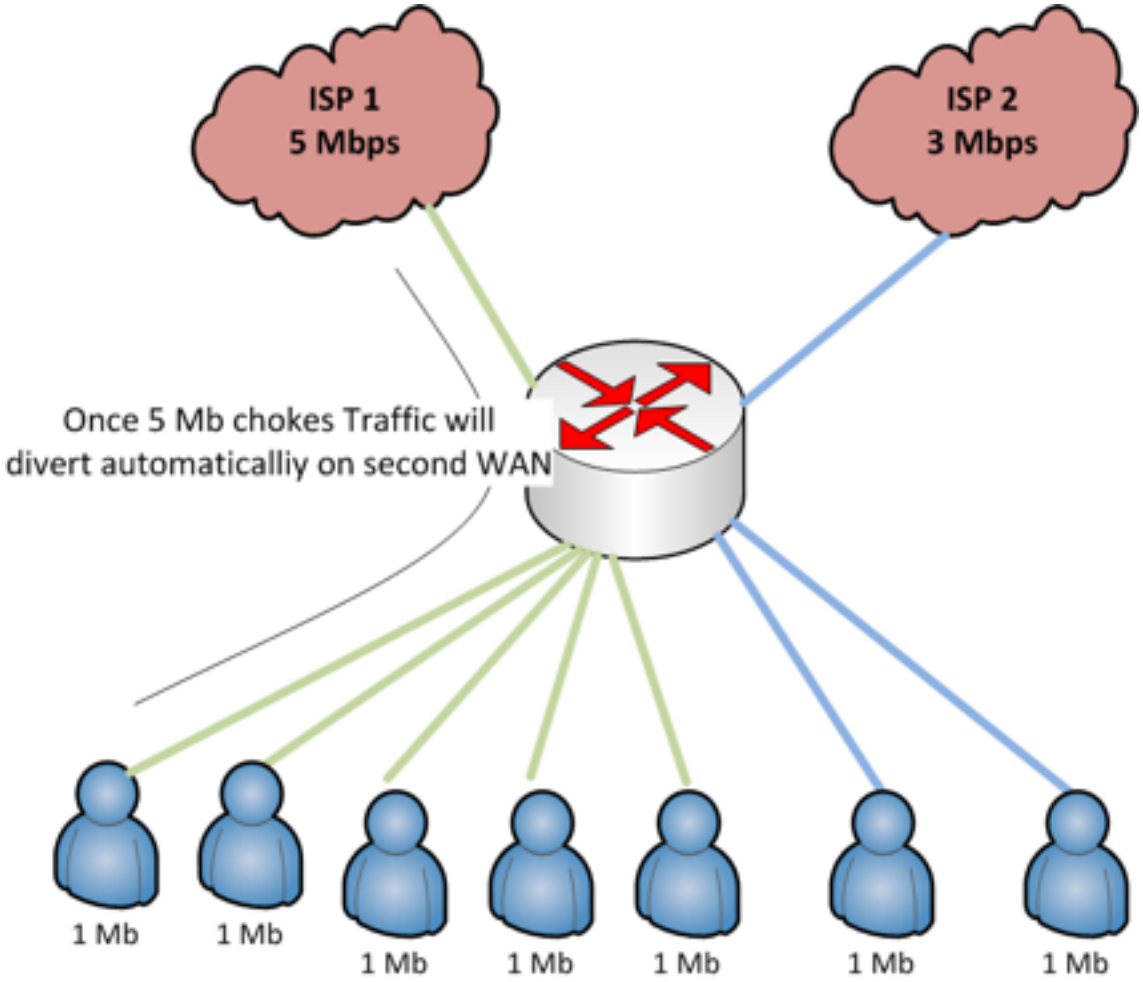
Routing

```
/ip route
add dst-address=0.0.0.0/0 gateway=10.111.0.1 routing-mark=ISP1_2Mb check-gateway=ping
add dst-address=0.0.0.0/0 gateway=10.112.0.1 routing-mark=ISP2_1Mb 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
```

Results : Appreciation



3. SpillOver : Want to shift traffic of fully consumed bandwidth of one ISP to Another



IP Addressing

```
/ ip address
    add address=192.168.0.1/24 network=192.168.0.0 interface=LAN

    add address=10.111.0.2/24 network=10.111.0.0 interface=ISP1

    add address=10.112.0.2/24 network=10.112.0.0 interface=ISP2
```

Marking

```
/ip firewall mangle

add chain=prerouting  src-address=192.168.0.0/24 action=mark-routing
new-routing-mark=to_ISP1
```

Nating

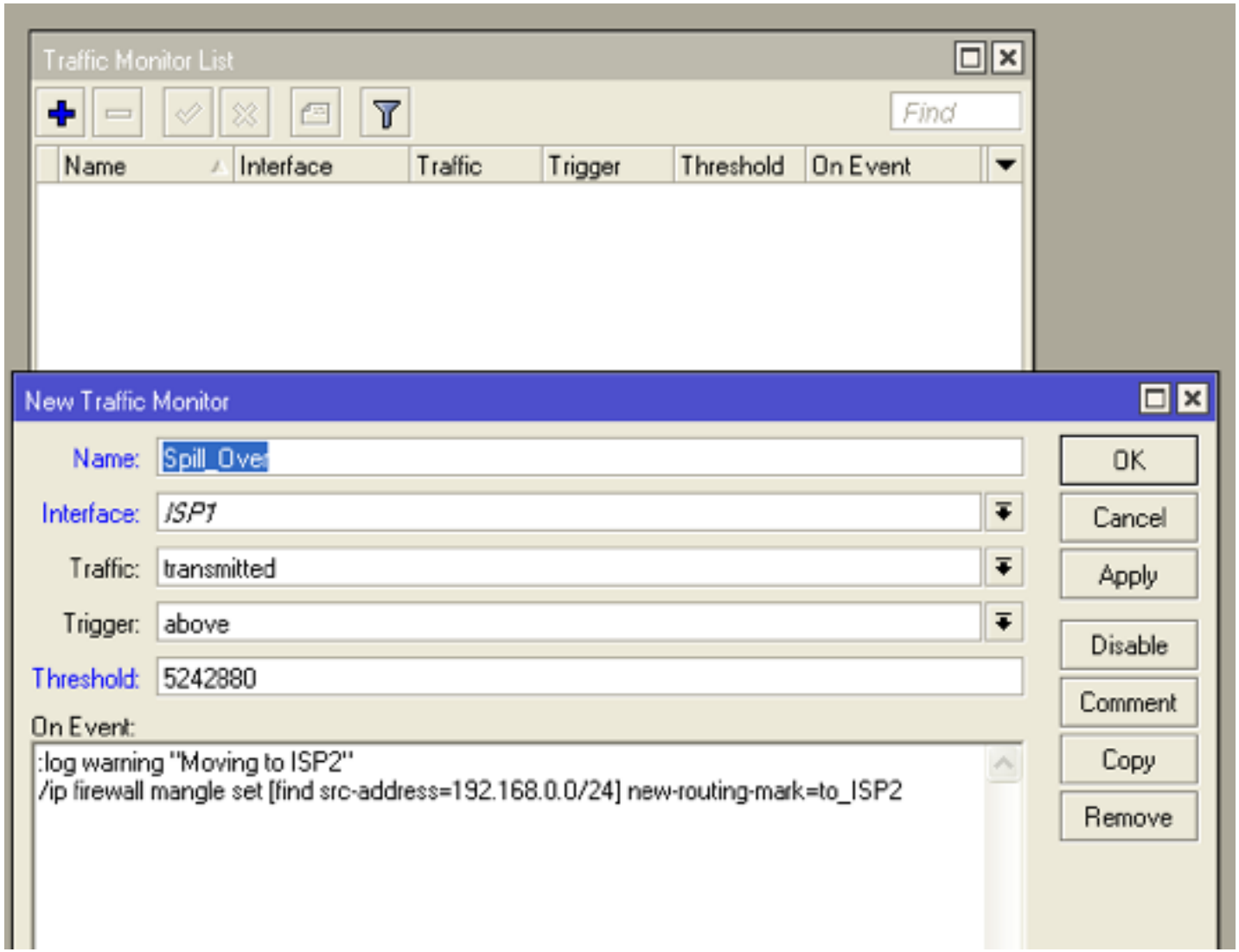
```
/ ip firewall nat
add chain=srcnat out-interface=ISP1 action=masquerade
add chain=srcnat out-interface=ISP2 action=masquerade
```

Routing

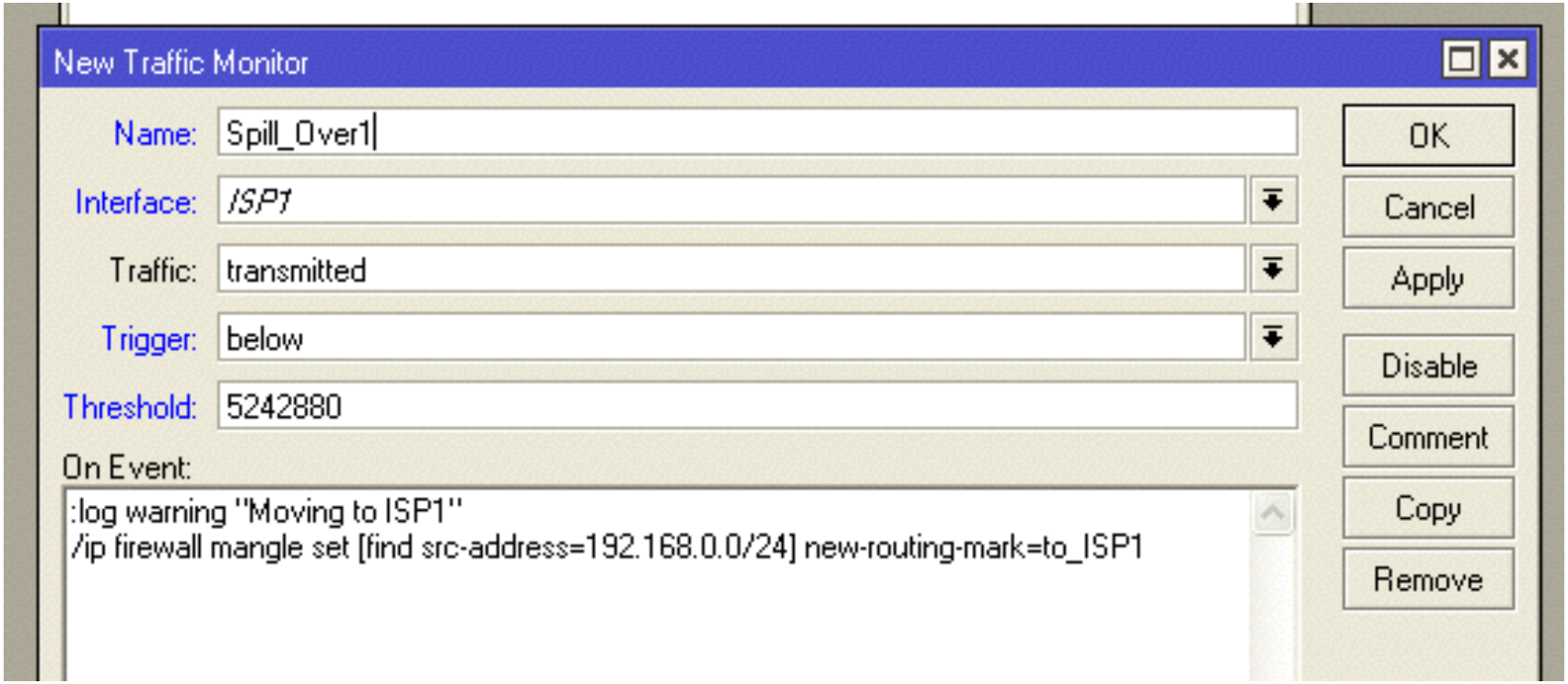
```
/ip route
add dst-address=0.0.0.0/0 gateway=10.111.0.1 routing-mark=to_ISP1 check-gateway=ping

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
```

Tools>Traffic Monitor

Trick 1: Shifting traffic to ISP 2



Trick 2: Shifting traffic back to ISP 1



Results :

Questions ?

MUM INDIA 2015

Thank You for Listening ☺

TARA CONSULTANTS PVT LTD

307, OSIAN BUILDING,
12, NEHRU PLACE,
NEW DELHI-110019
TEL: 011-46570273
Ph : +91-9311686026,
+91-9811686026
FAX:011-26448917
www.tcplonline.com
gamma@tcplonline.com