

Multilink Computers Pvt Ltd

WELCOMES

YOU @

MIKROTIK MUM



NEW DELHI

2 SEP 2016



Company Profile.....brief

- **Multilink Computers Pvt Ltd is one of the leading System integrator provider company offering Wireless LAN , WAN & FTTH solutions.**
- **Multilink's expertise**
- **Wireless**
- **FTTH**
- **GePON & GPON**
- **EOC**
- **VOIP APPLICATIONS**

- **MULTILINK Deals with**
REVO
MikroTik etc.....

Cont...



www.multilinkonline.com

We help you to create links!!

Company Profile.....brief

Multilink is authorized Master distributor for
INDIA & USA



MULTILINK COMPUTERS PVT LTD

Marketing & Support Offices – INDIA & USA

- **New Delhi (H.O & Corporate Office)**
- **Jhansi (U.P)**
- **Kolkata (W.B)**
- **Jaipur (Rajasthan)**
- **Indore (M.P)**
- **Bangalore (Karnataka)**
- **Cincinnati (USA)**



MULTILINK COMPUTERS PVT LTD

Gives you opportunity to work as a TECHNOLOGY PARTNER

- 1. Multilink will provide a total technical consultation to the technology partner.**
- 2. Multilink will arrange hardware used in ISP activity at economical cost for their subscriber.**
- 3. Multilink will sign an agreement with their technology partner to make a standard of business.**
- 4. Multilink will help in marketing and brand promotions.**



MULTILINK COMPUTERS PVT LTD

Major Sectors – INDIA & USA

- **Enterprise .**
- **Banking .**
- **Telecom /Service provider.**
- **Government .**
- **Semi-Government.**
- **Defense.**
- **Educational Institutions.**





Central Electronics Ltd



अजीत समाचार
उत्तर भारत का सम्पूर्ण अखबार



दैनिक सवेरा
संयोग से उजाले की ओर... टाइम्स



WHY CHOOSE MULTILINK

1. Centralised Call Center **8080808292.**
2. 24 x 7 Online/Offline Support.
3. Professional staff across the Globe.
4. We know what we Sell.
5. Technical Consultation.
6. Express RMA.
6. ERP with CRM for customer satisfaction.
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ONLINE PORTAL

Connect to Wi-Fi x Jaze Networks x Mikrotik Wireless Access F x

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- Revo Media Converter
- Revo Caching Server
- Fiber Splitter and Accessories
- Mikrotik RouterBoard
- Mikrotik Wireless Products
- Mikrotik Ethernet Routers
- Mikrotik Switches
- MikroTik Base Station
- Ubiquiti Products
- Security & Surveillance Products
- Wireless CPE
- Internet Bandwidth
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Mikrotik Wireless Products

FEATURED PRODUCTS

 MikroTik SXT Lite5 x 20 ☆☆☆☆☆ 0 Review(s) Your Price: Rs.70,000.00 Add To Cart	 MikroTik SXT Lite5 ★★★★★ 1 Review(s) Your Price: Rs.3,500.00 Add To Cart	 RB951G-2HnD ☆☆☆☆☆ 0 Review(s) Your Price: Rs.5,200.00 Add To Cart	 BaseBox5 (RB912UAG-SHPnD-OUT) ☆☆☆☆☆ 0 Review(s) Your Price: Rs.5,800.00 Add To Cart
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[Click Here to Submit RMA](#)

OFFER ZONE
REVO 610GZ 1 Port ONU
@ Rs. 1299/- Only



MikroTik SXT Lite5
@ Rs. 3500/- Only



Home Access Point hAP lite @ Rs. 1500/-



PRODUCTS (TOTAL ITEMS: 32)

Price: Low to High ▾



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ONLINE PORTAL

Connect to Wi-Fi x Jaze Networks x Mikrotik Wireless Access F x

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- Revo FTTH Products
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- Fiber Splitter and Accessories
- Mikrotik RouterBoard
- Mikrotik Wireless Products
- Mikrotik Ethernet Routers
- Mikrotik Switches
- MikroTik Base Station
- Ubiquiti Products
- Security & Surveillance Products
- Wireless CPE
- Internet Bandwidth
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Home > Mikrotik Wireless Products > LHG 5

LHG 5

Zoom

Your Price: Rs.4,700.00

Availability: In Stock

Part Number 826

Quantity

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Description Related Items

LHG 5

The Light Head Grid (LHG) is a compact and light 5GHz 802.11 a/n wireless device with an integrated dual polarization 24.5 dBi grid antenna at a revolutionary price. It is perfect for point to point links or for use as a CPE at longer distances and supports Nv2 TDMA protocol.

The grid design ensures protection against wind, and the fact that the antenna element is built into the wireless unit means no loss on cables.

Customer Care: 8080808292
Call between 10:00 AM to 6:30 PM on Mon-Sat

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REVO 610GZ 1 Port ONU
@ Rs. 1299/- Only

MikroTik SXT Lite5
@ Rs. 3500/- Only

Home Access Point hAP lite @ Rs. 1500/-



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CASESTUDY IN MIKROTIK

- 1. Router OS**
- 2. Point to Point**
- 3. Multipoint**
- 4. Hotspot**
- 5. Routing**
- 6. Switching**
- 7. Fiber GPON**

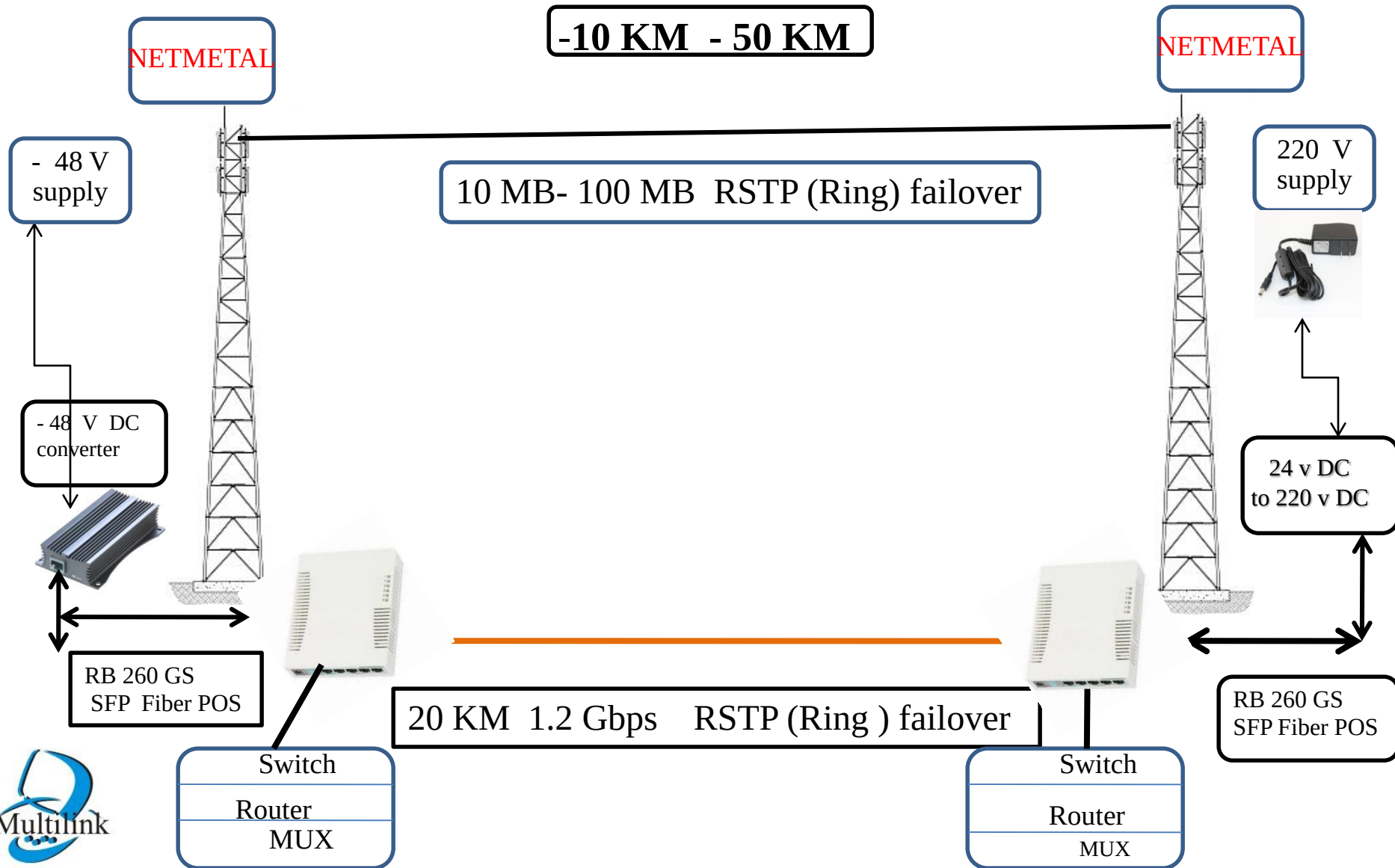


WIRELESS

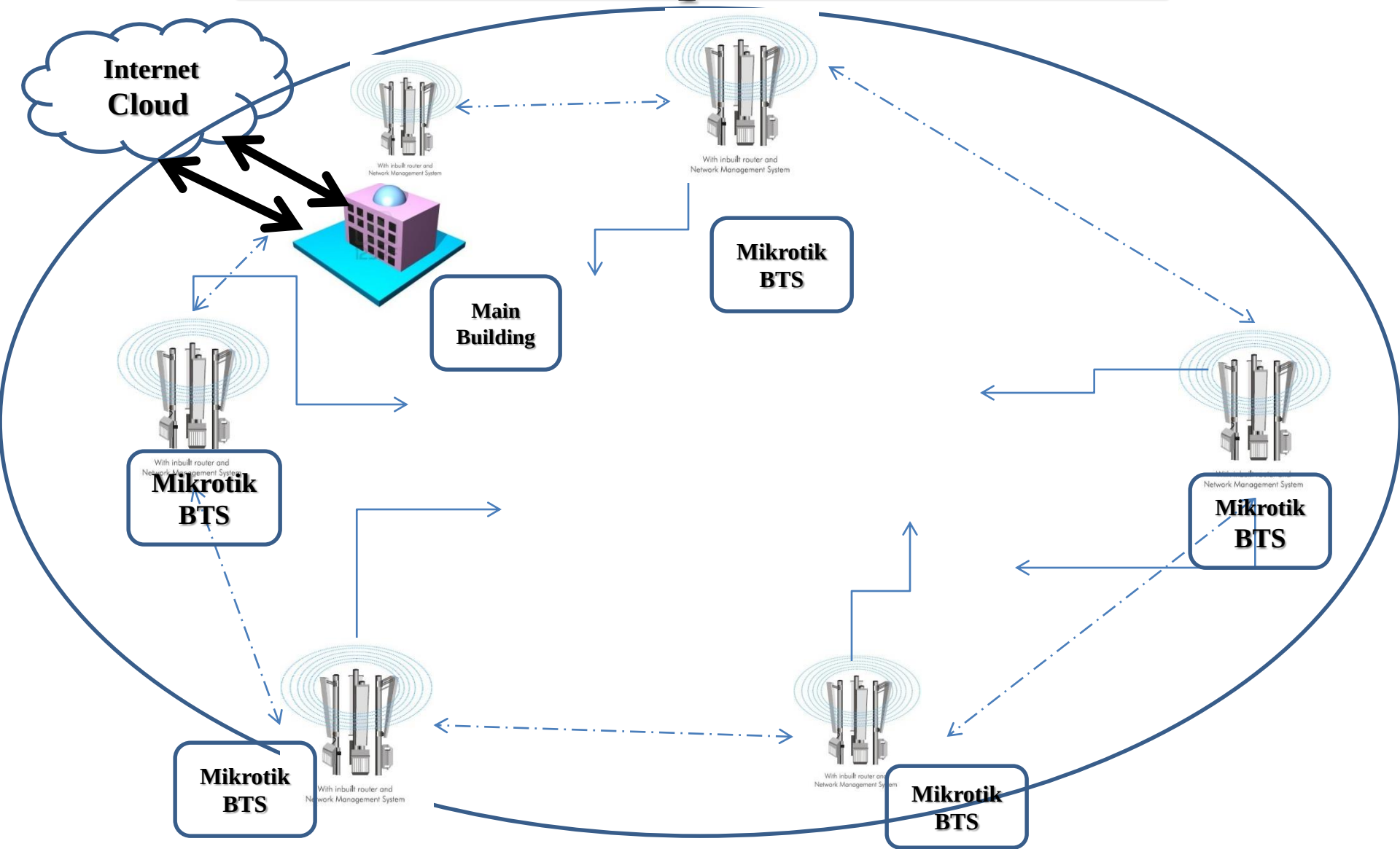
- **Very Easy to deployable**
- **Network Connectivity without wire**
- **Point to Point 802.11 ac series**
- **Multipoint Connectivity**
- **Wi- Fi Zone Creation**
- **Base Station/Hotspot**
- **Access Point**



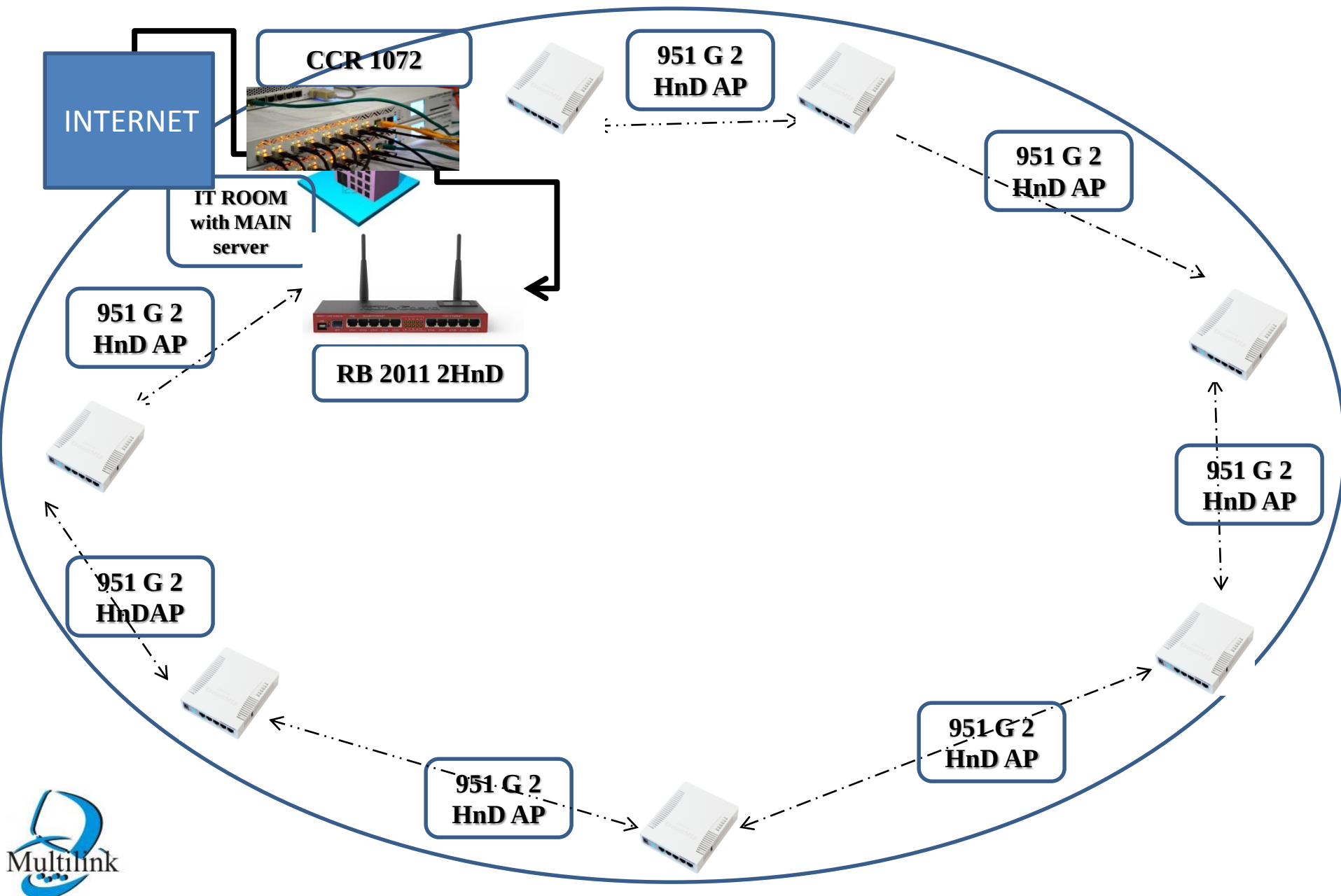
Mikrotik PTP RF link with Fiber in RSTP topology.



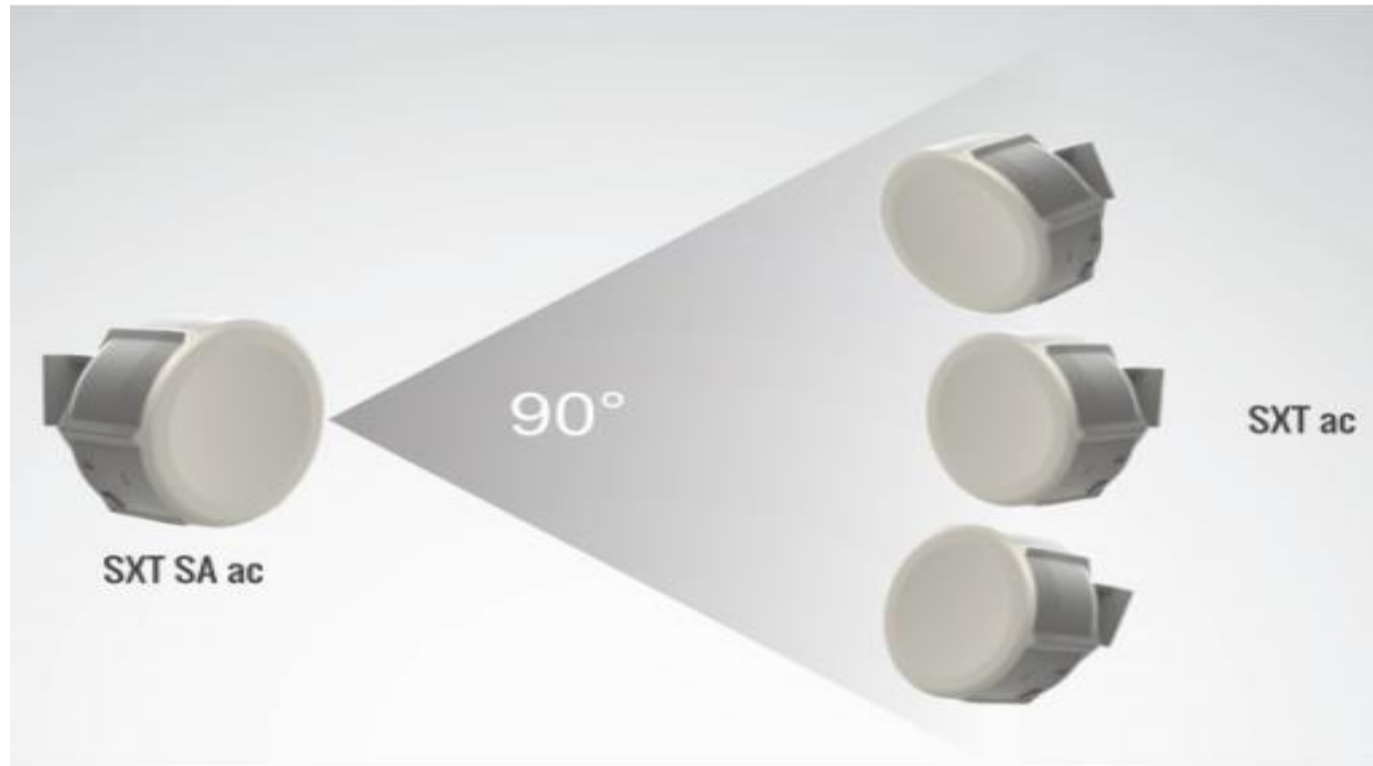
Mikrotik Campus Wi-Fi Zone



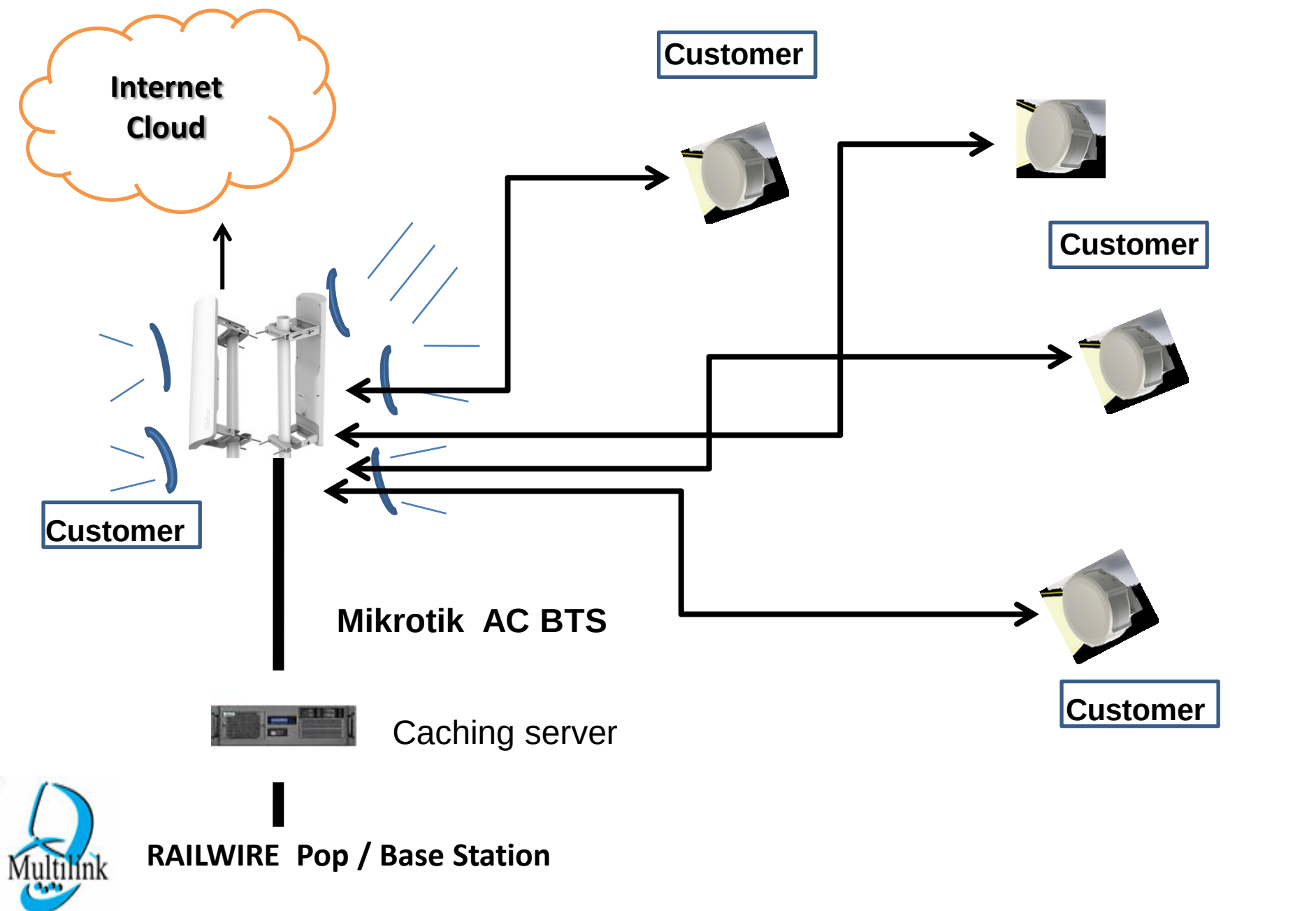
Wi-Fi Connectivity (with controller) diag.



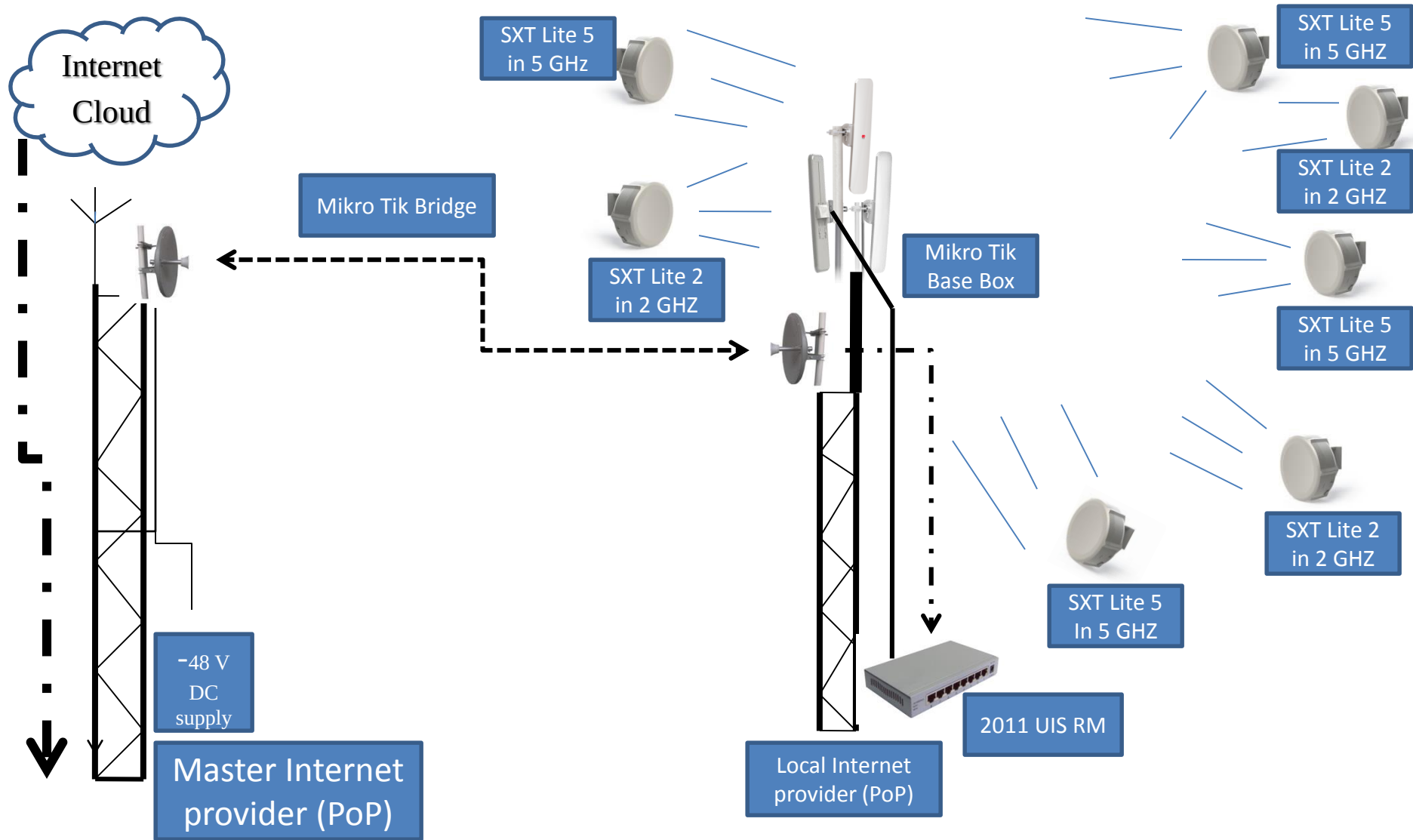
MIKROTIK IN MULTIPOINT



Base Station with Sectorcoverage 10 Km with 240/360 clients



Connectivity diagram:- Last mile with Local ISP setup



THANK YOU



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MikroTik



GPoN



1Gb per second

Fibre to the Home



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GPON

- **A passive optical network (PON) is a point-to-multipoint, fiber to the premises network architecture in which unpowered optical splitters are used to enable a single optical fiber to serve multiple premises, typically 32-128.**
- **ITU-T G.984**
GPON (Gigabit PON) is an evolution of the BPON standard. It supports higher rates 2.4 Gb/s upstream and 1.2 Gb/s.



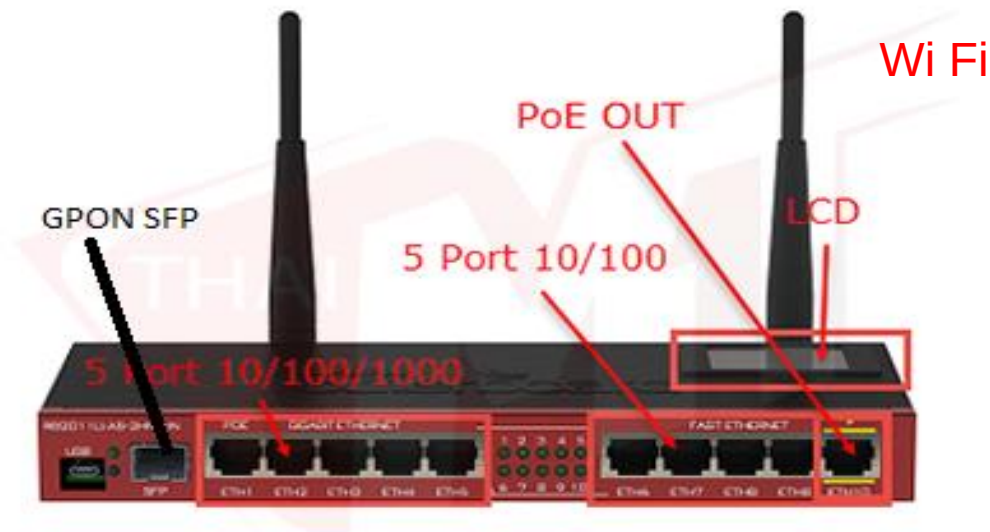
GPON

- **1. OLT**
- **2. ONT**
- **3.Splitter**
- **4. Power Meter**
- **5. Fiber Termination Box**
- **6. Single Core Fiber**
- **Mikrotik NAS**
- **Mikrotik L3 managed switch**

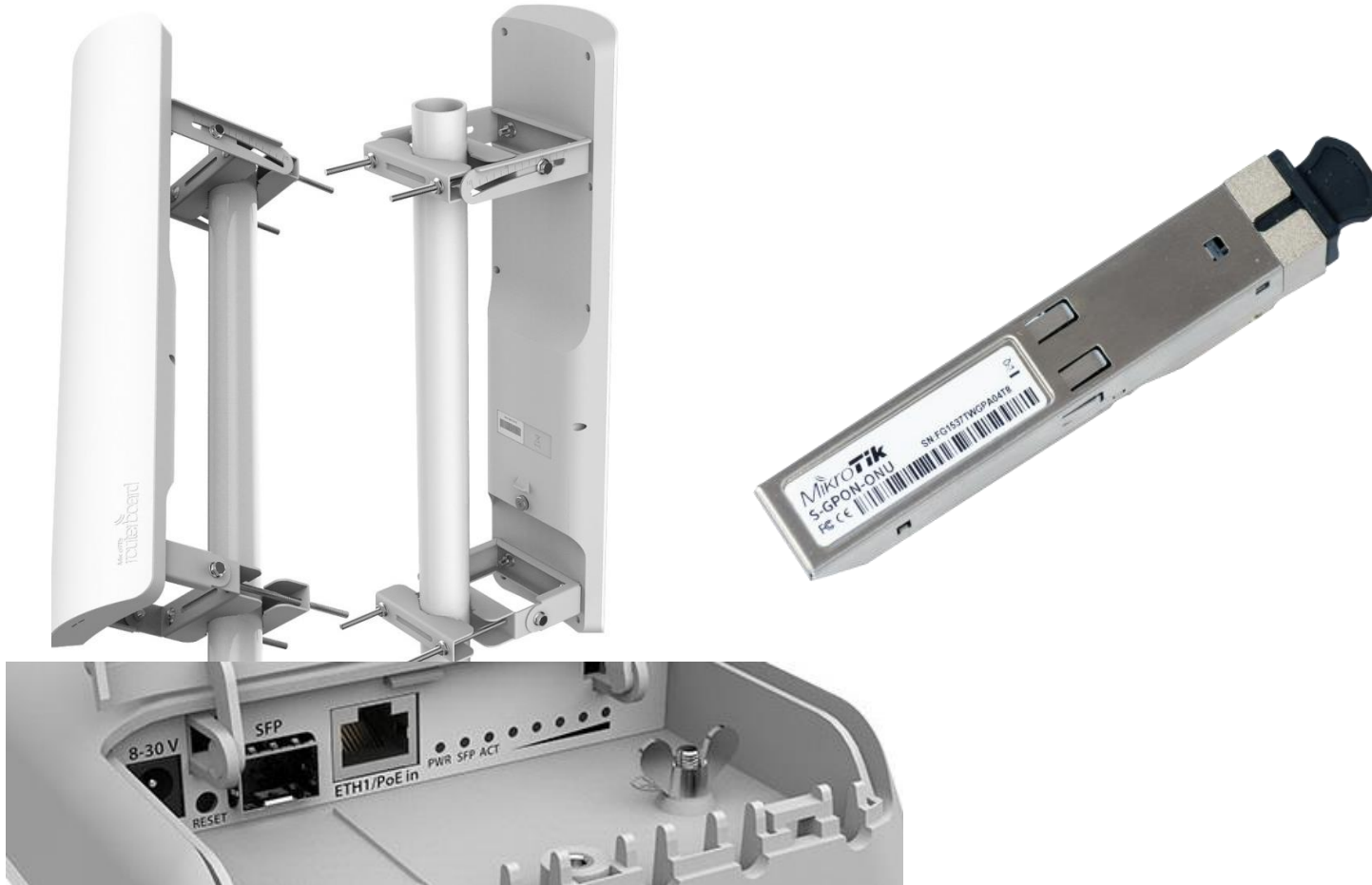


Mikrotik in GPON

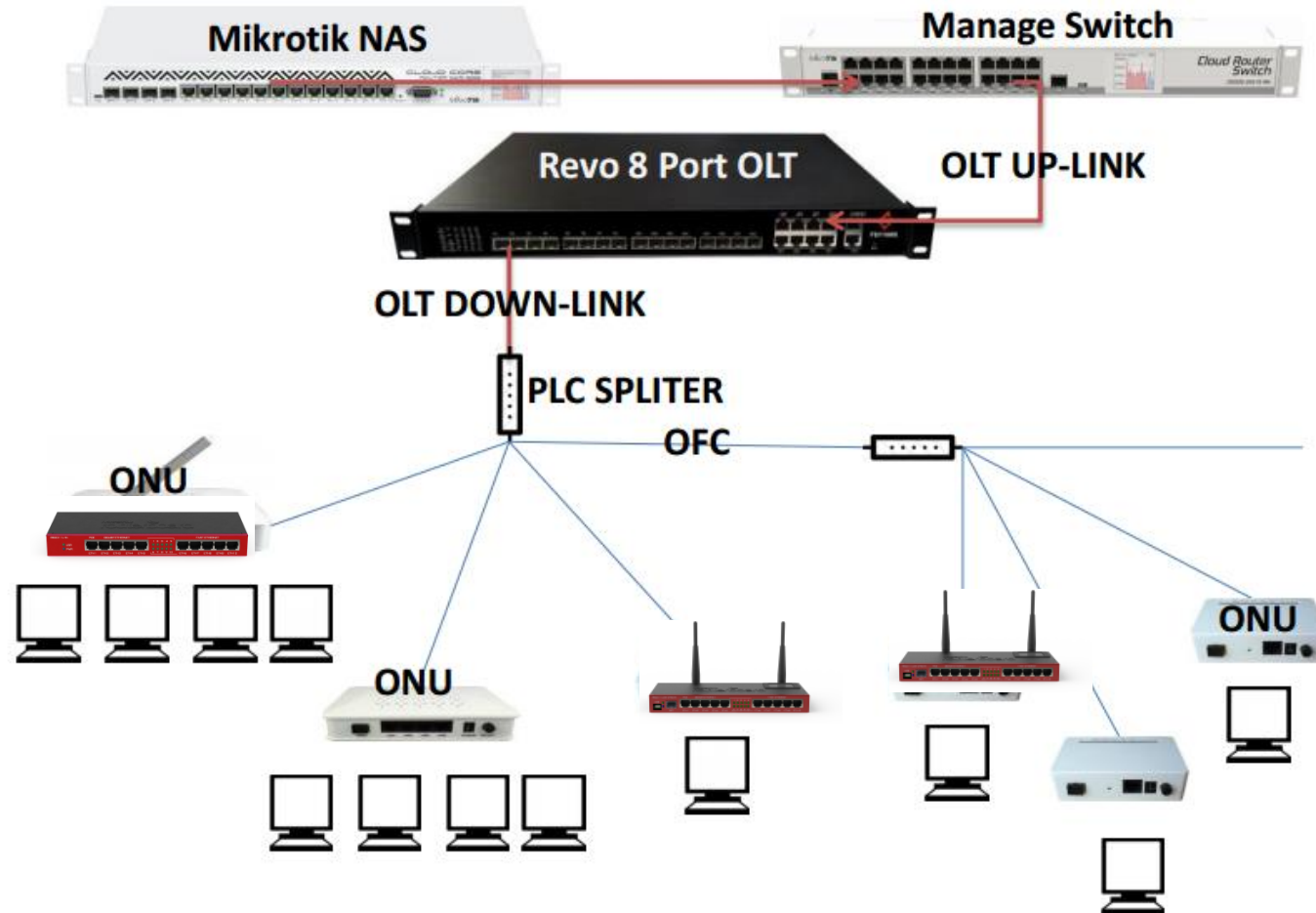
L3 Based ONU compatible with all OLT



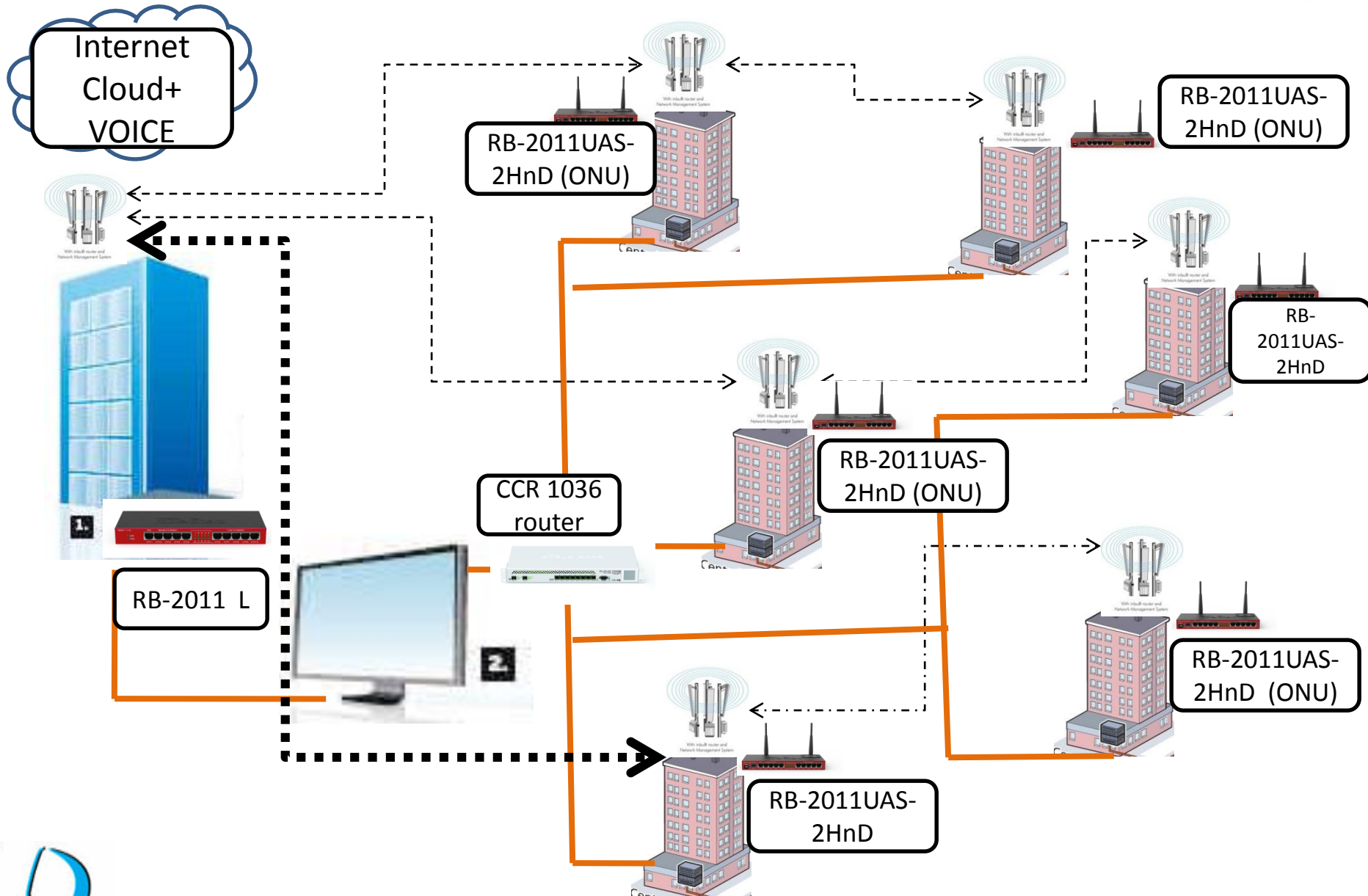
Mikrotik GPON ONU with Sector



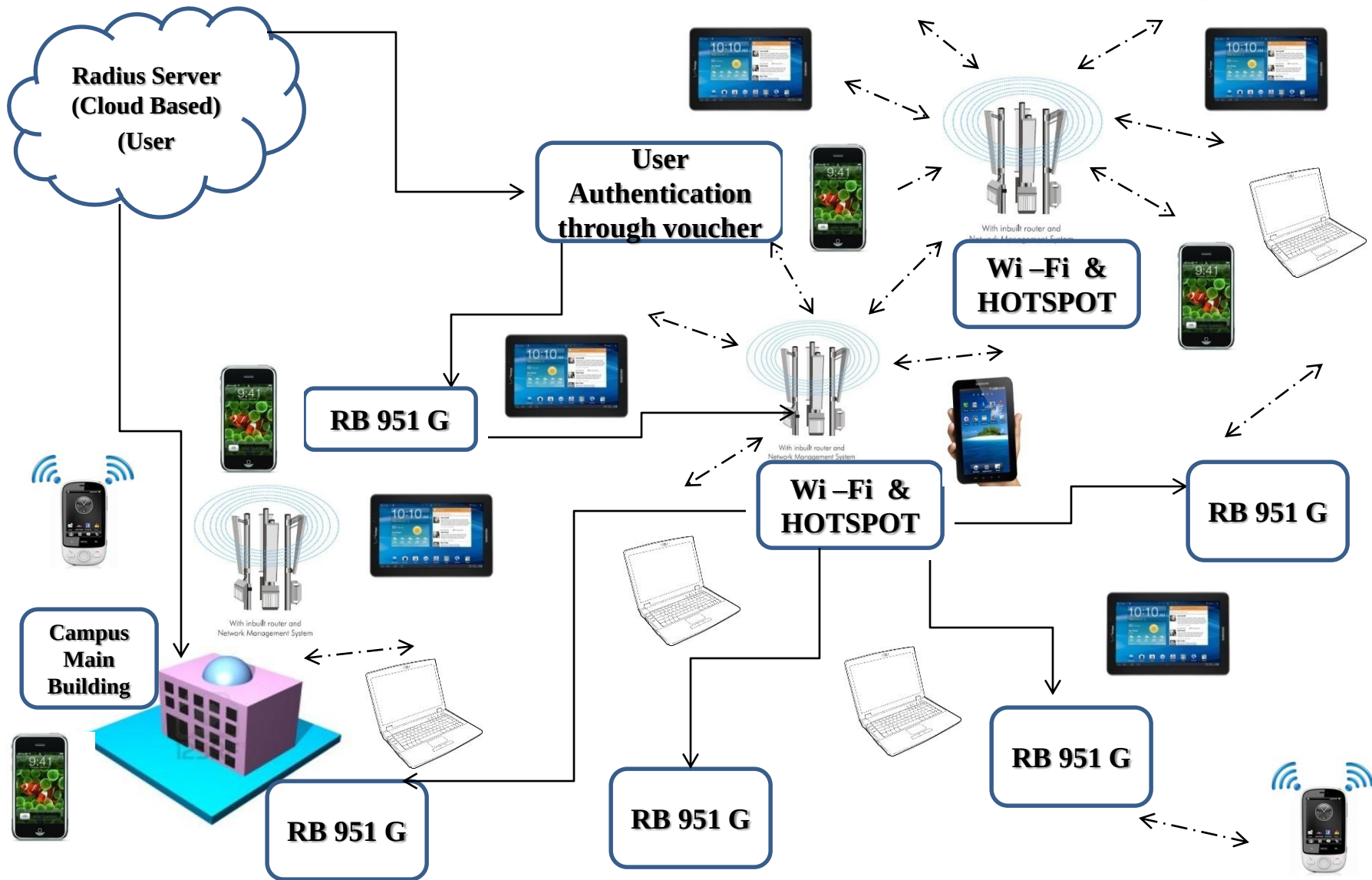
GPON



Community Broadband distribution - FTTH Connectivity



Use of MikroTik in FTTH - diag.



Mikrotik NAS (Network Access Server) Configure

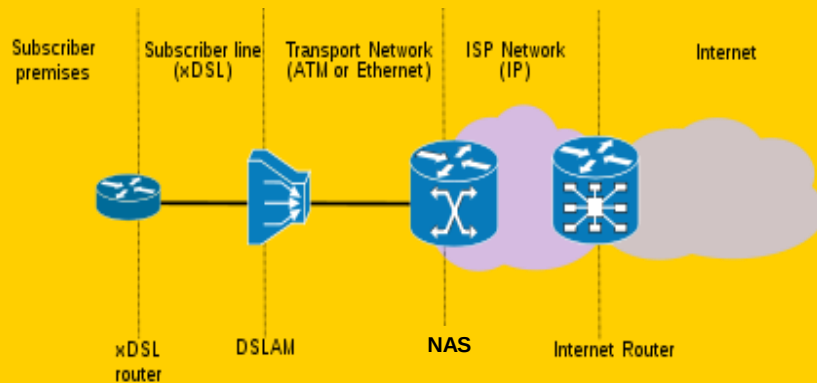
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❑ What is NAS

❑ Mikrotik NAS Setup with Hotspot

❑ Mikrotik NAS Setup with PPPOE

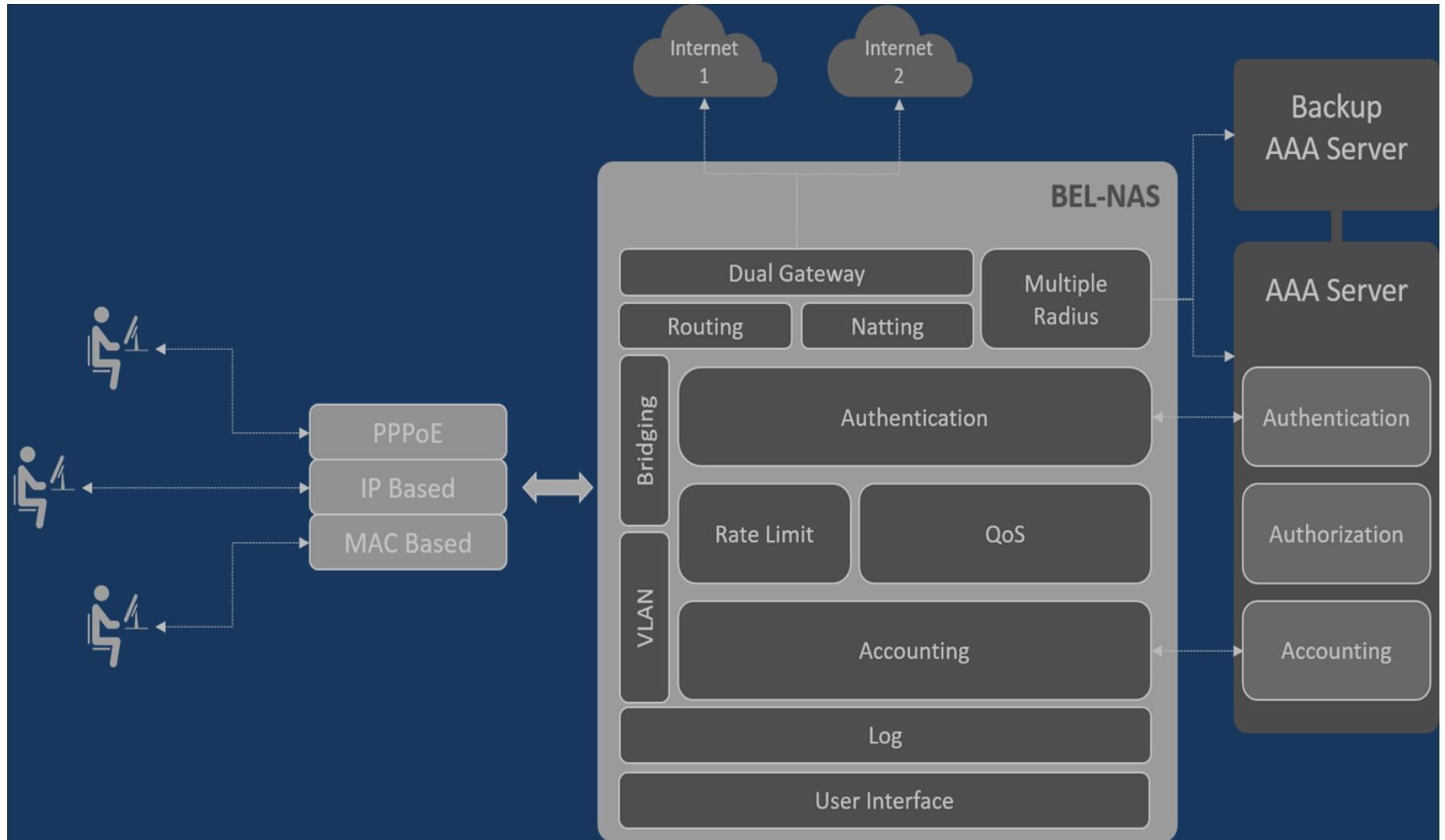
What Is NAS?



A Network Access Server (NAS) is a server that enables an independent service provider (ISP) to provide connected customers with Internet access. A network access server has interfaces to both the local telecommunication service provider such as the phone company and to the Internet backbone.

- The server authenticates users requesting login.
- It receives a dial-up call from each user host (such as your computer) that wants to access the Internet, performs the necessary steps to authenticate and authorize each user, usually by verifying a user name and password, and then allows requests to begin to flow between the user host and hosts (computers) elsewhere on the Internet.
- The term *network access server* may refer to a server devoted entirely to managing network access or to a server that also performs other functions as well.
- A network access server can be configured to provide a host of services such as VoIP, fax-over-IP, and voicemail-over-IP as well.

Mikrotik NAS Architecture (CMAYA & 24 Online)



Mikrotik NAS Datasheet

PROTOCOLS

- PPPoE (MPPE supported)
- IPPoE

SECURITY

- IP Address Tracking
- Duplicate Address Tracking (DAD)
- URPF (Unicast Reverse Path Forwarding)
- DDOS Control
- SPAM Control
- IP Filtering

DHCP SUPPORT

- DHCP Server for IPv4 / IPv6

QoS

- QoS per Service
- QoS per Group
- QoS per Subscriber
- Dynamic Bandwidth Management
- QoS on TOS
- QoS on Source/Destination
- IP address / Pool

SUBSCRIBER MANAGEMENT

- Radius Authentication – Full
- Radius Accounting
- PAP / CHAP /MSCHAP V-1/2
- Rate Limit
- BEL-RAS Pool / Radius Pool
- Static IP via Radius
- QoS via Radius (Hierarchical Module)
- Session Timeout
- Idle Session Timeout
- User Disconnect
- Radius CoA/DAE (Dynamic Authorisation Extension)

NATTING (N/W BEHIND IP)

- CG NAT (NAT 444)
- SNAT
- DNAT

LOGS

- Authentication
- Connection tracking logs
- Per session logging support
- Log to file
- Log to remote host

MANAGEMENT

- Basic User Statistics
- Full User Statistics
- Basic System Element Statistics
- Full System Element Statistics
- NTP
- Analytics

ADDITIONAL FEATURES

- IP Pools for – Wrong Password, Expired User, Wrong MAC
- Real time QoS user update
- Real time Group Policy Updating
- IP/URL Whitelisting

Mikrotik -NAS Value Proposition

Business Focus
Helps you focus on
customer acquisition
while we manage your
systems



Quick Deployment
SaaS based platform can
be implemented quickly
reducing go to market
time



Cost Savings
Pay as you go pricing
reduces Capex. Also
features helps you
reduce your other costs



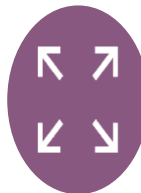
Management & Support
One stop solution
reduces your vendor
management efforts. Our
24x7 support also helps



Network Security
Highly secured system
protects you from the
network threats &
reduces losses

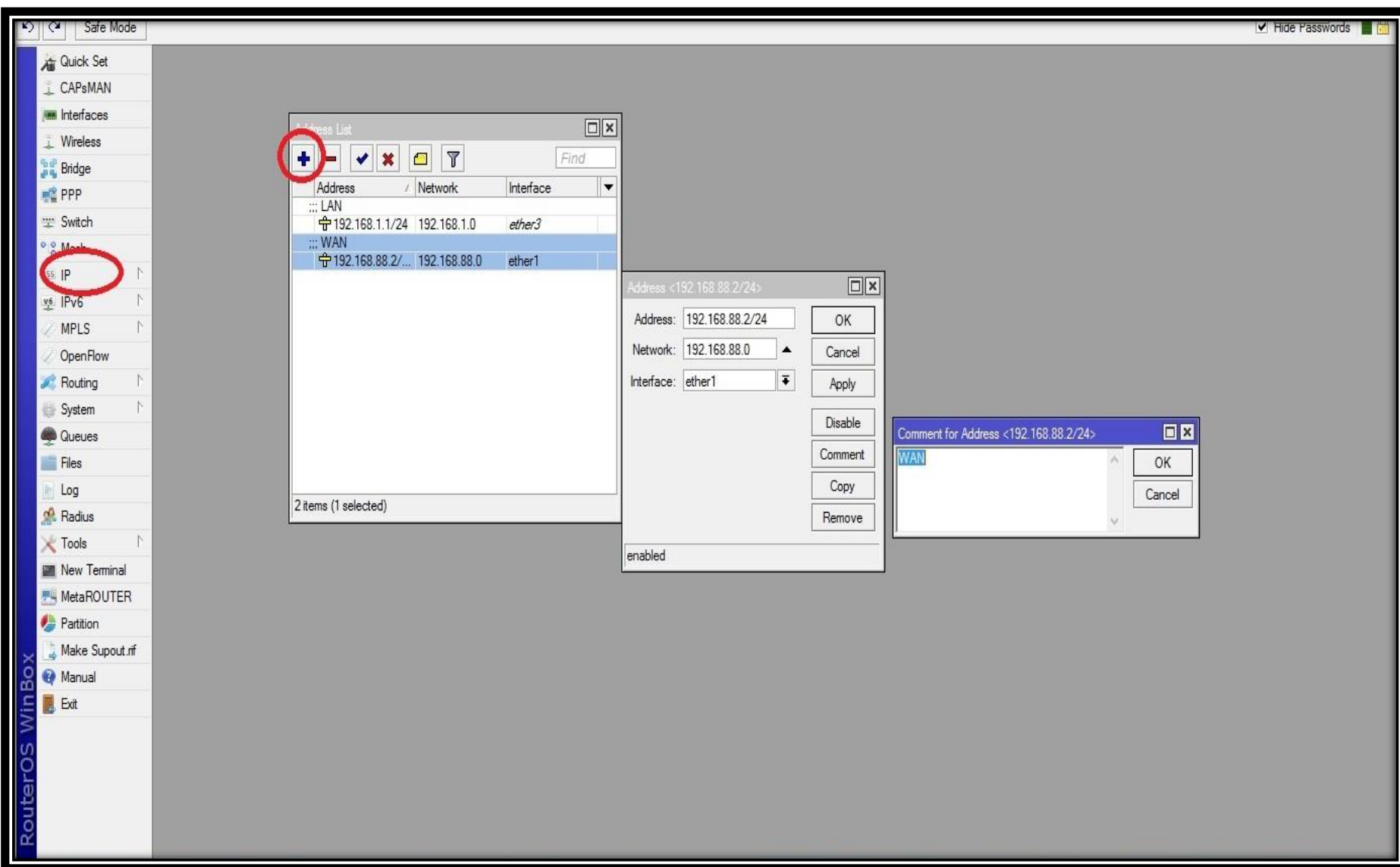


Scalability
Highly scalable system to
support the growth of
your user base



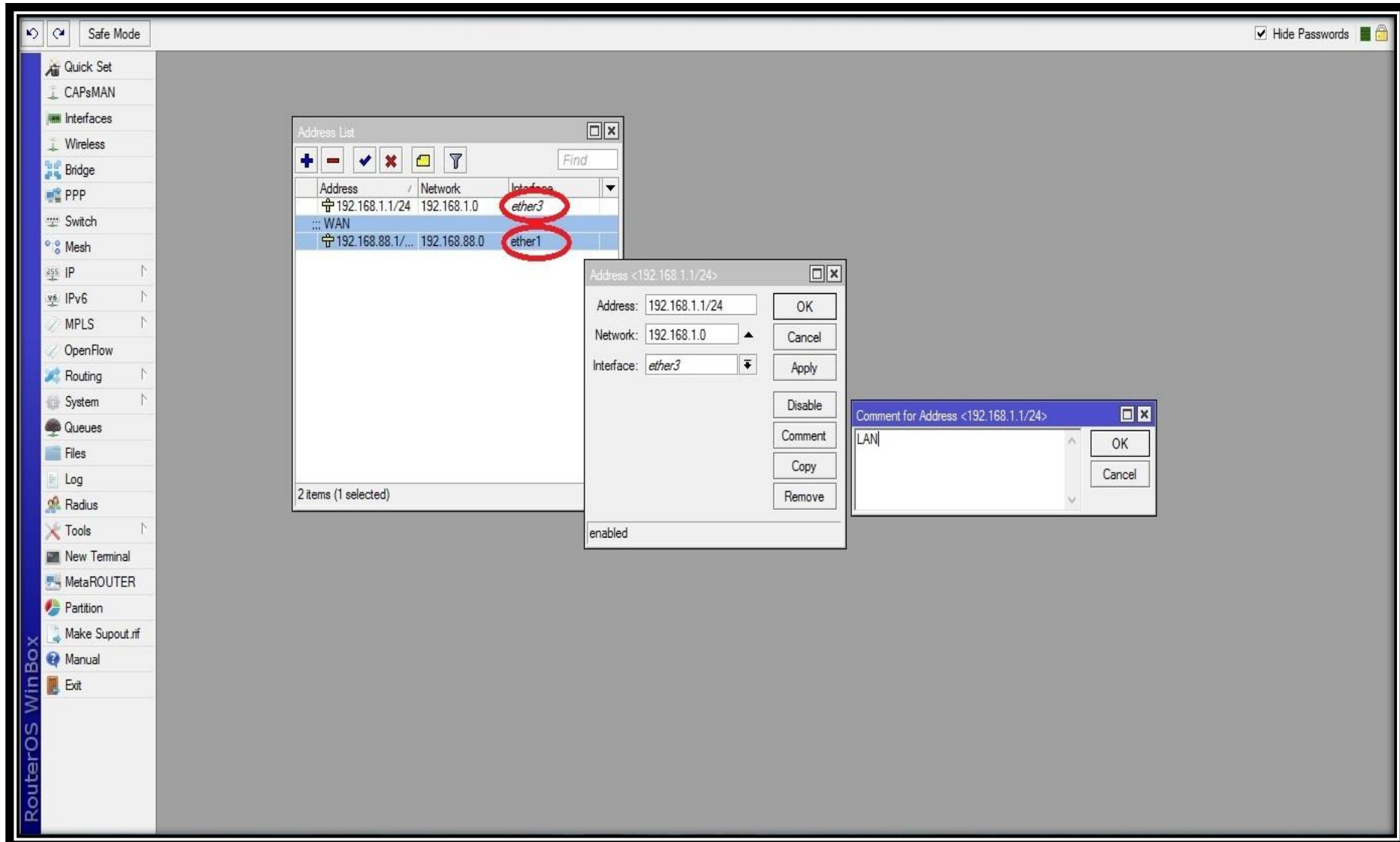
□ Mikrotik NAS Setup with Hotspot

Configuration LAN , WAN & RADIUS

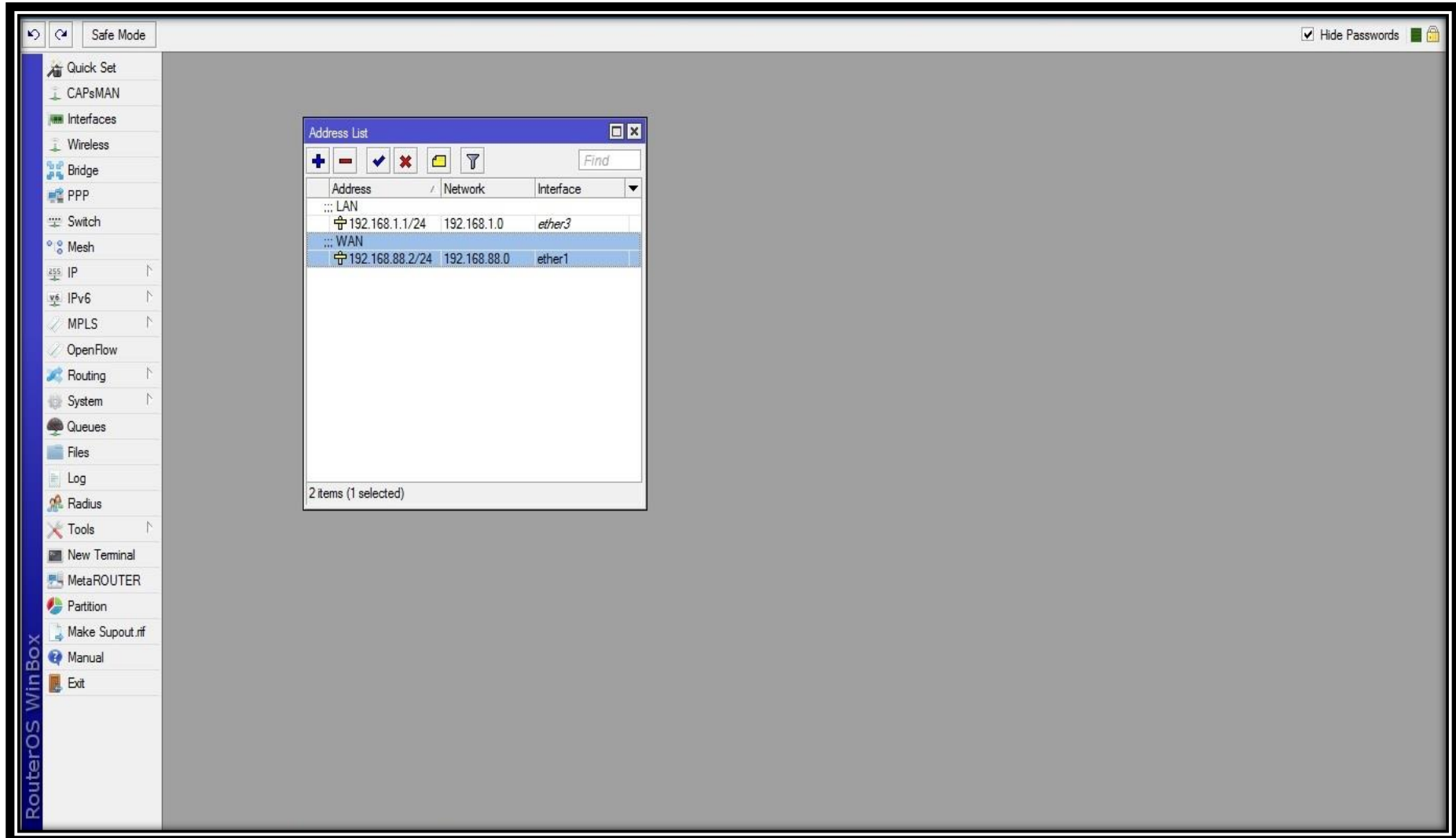


➤ Go to IP - Add IP For LAN & WAN

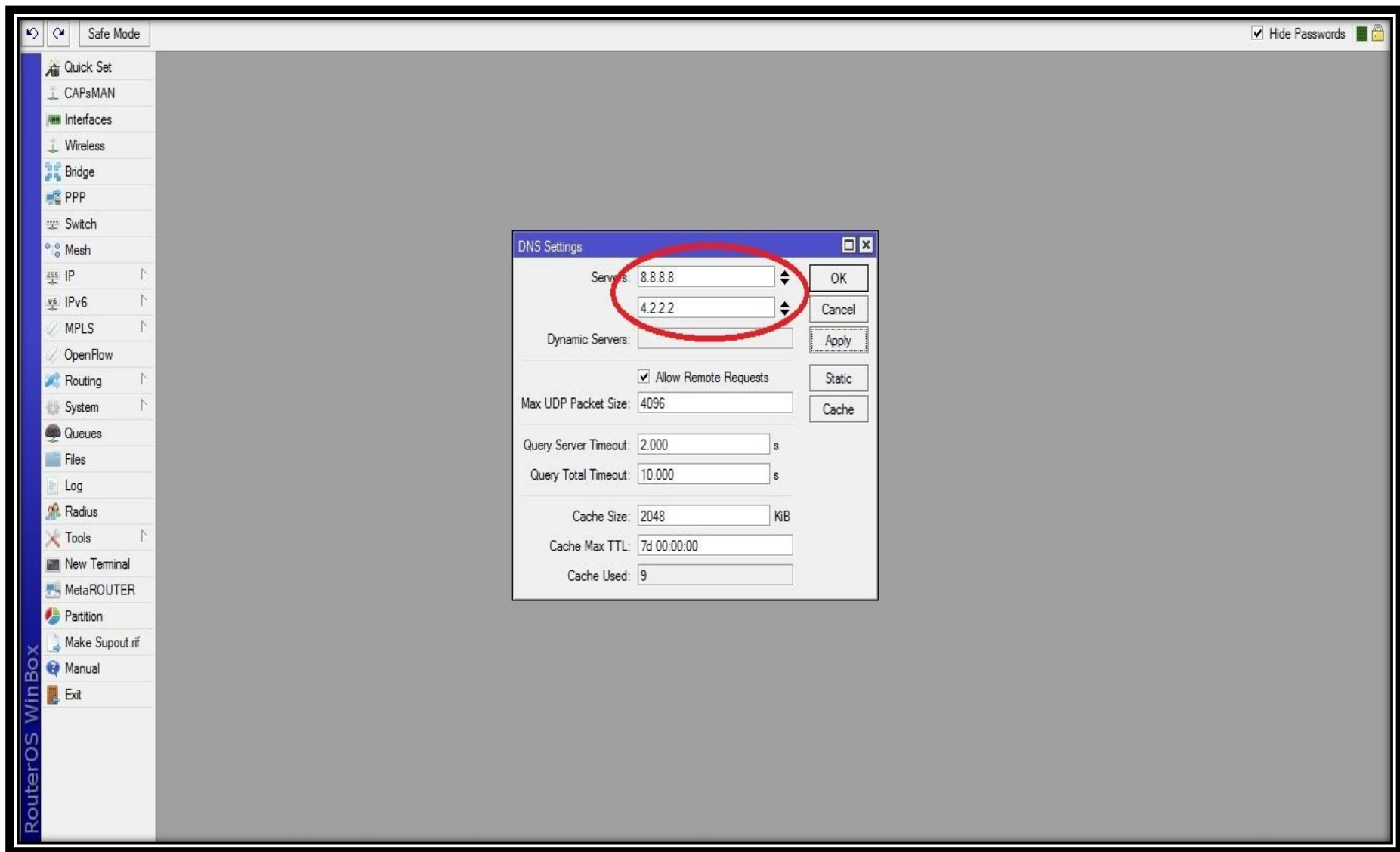
Configuration LAN , WAN & RADIUS



Configuration LAN , WAN & RADIUS



Configuration LAN , WAN & RADIUS



➤ Go to IP – DNS – Add DNS Server

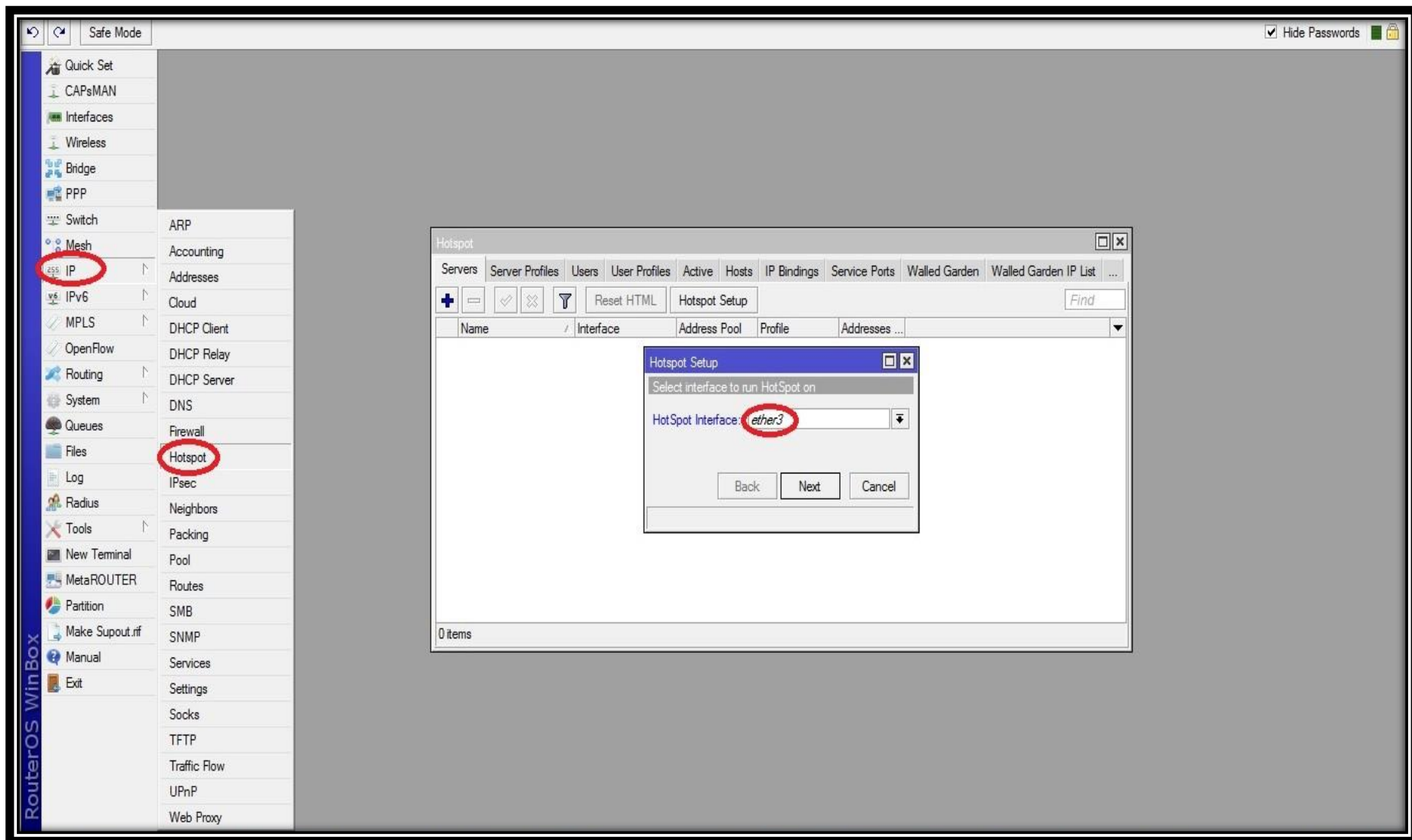
Configuration LAN , WAN & RADIUS

The screenshot displays the RouterOS WinBox interface. On the left sidebar, the 'IP' menu item is circled in red. The 'Routes' option under the 'IP' menu is also circled in red. The main window shows the 'Route List' table with the following data:

	Dest. Address	Gateway
AS	0.0.0.0/0	192.168.88.1 reachable ether1
DC	192.168.1.0/24	ether3 unreachable
DAC	192.168.88.0/...	ether1 reachable

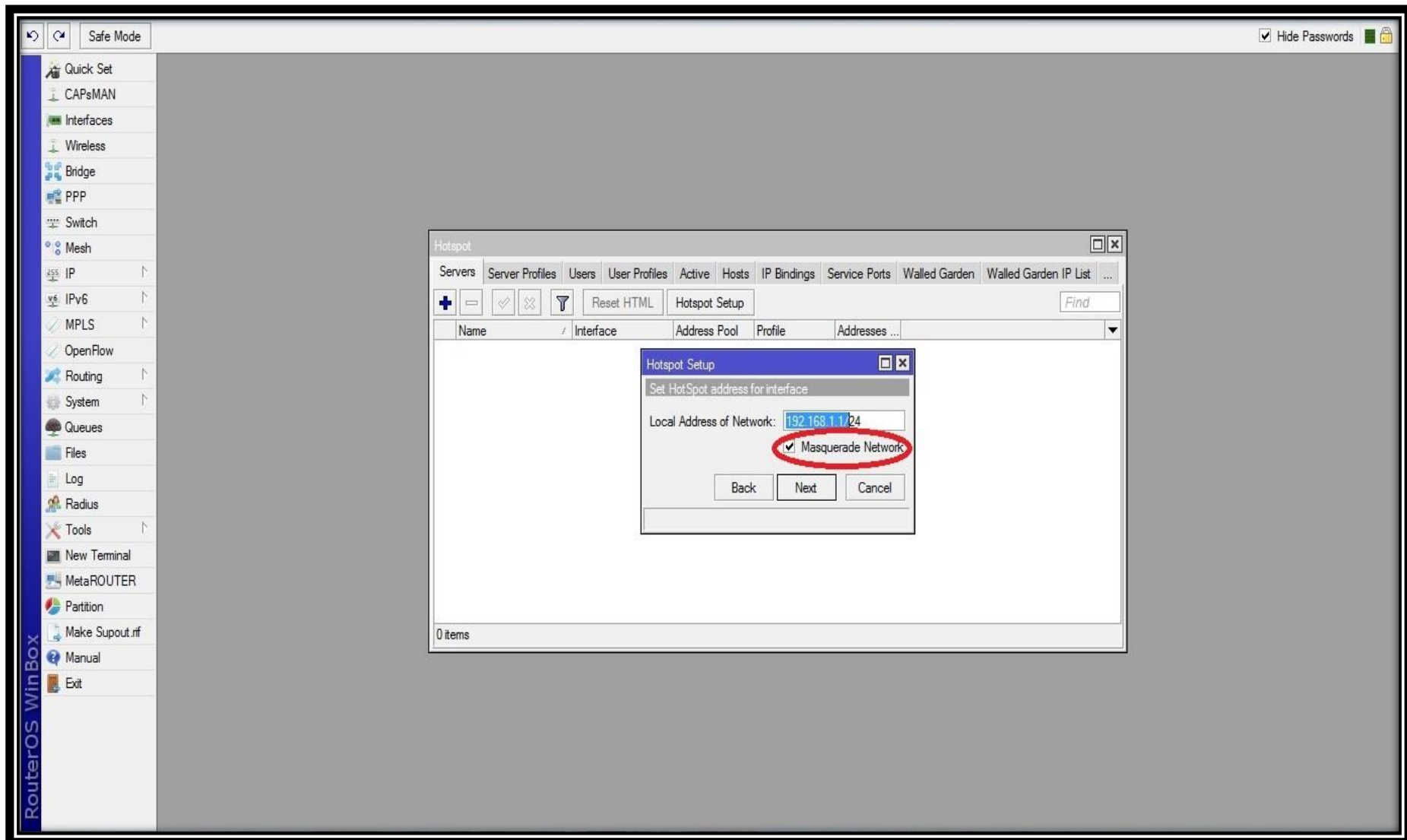
Below the table, it indicates '3 items (1 selected)'. To the right, the 'Route <0.0.0.0/0>' configuration window is open, showing the 'General' tab. The 'Dst. Address' is '0.0.0.0/0' and the 'Gateway' is '192.168.88.1', both of which are circled in red. Other settings include 'Check Gateway' (disabled), 'Type' (unicast), 'Distance' (1), 'Scope' (30), 'Target Scope' (10), 'Routing Mark' (empty), and 'Pref. Source' (empty). At the bottom, the status is 'enabled', 'active', and 'static'.

➤ Go to IP – Routes – Add Gateway



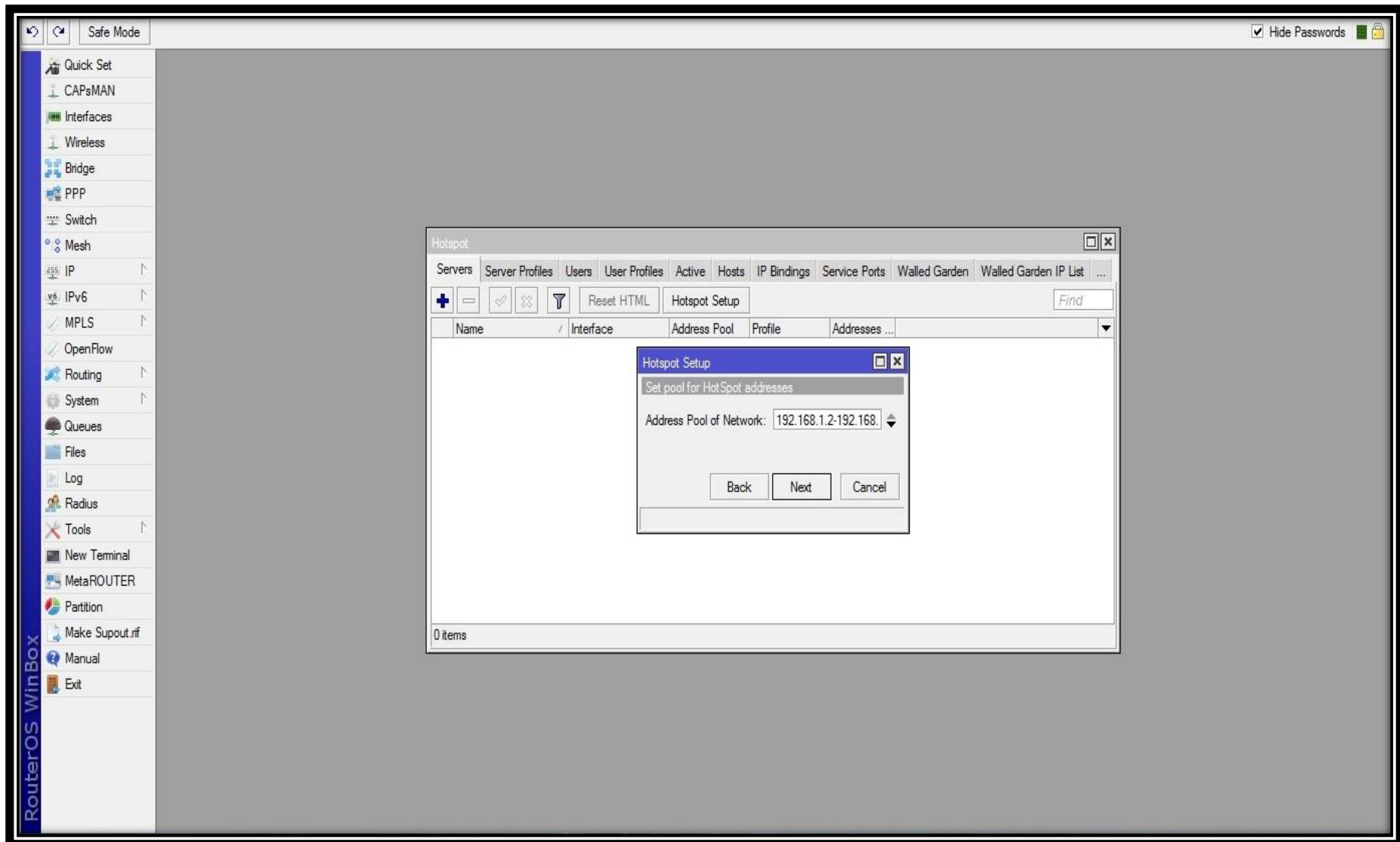
➤ **Go to IP – Hotspot – Hotspot Setup – Select Hotspot Interface (LAN Interface) – Click Next**

Configuration LAN , WAN & RADIUS

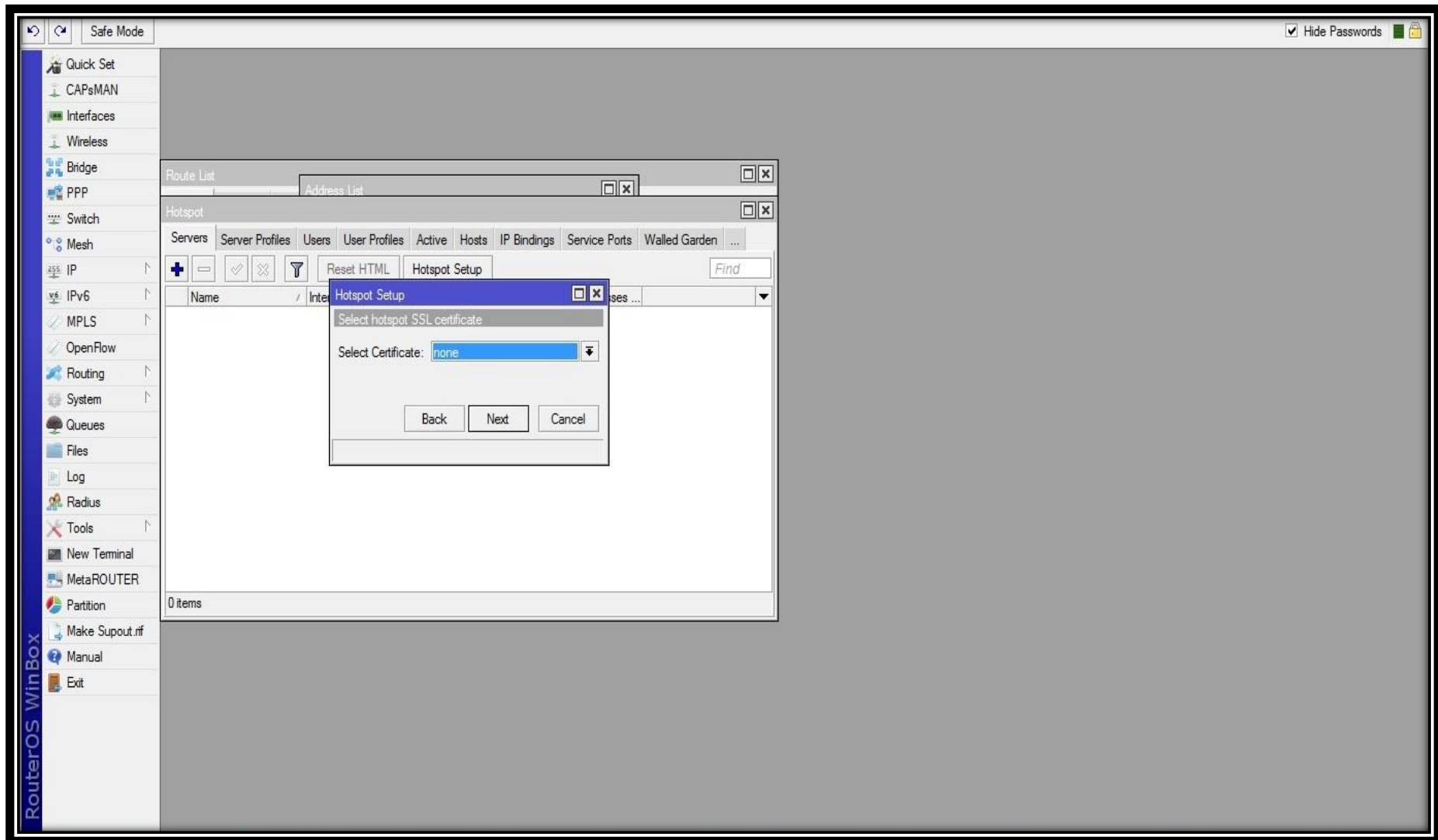


➤ Click Masquerade Network – Click Next

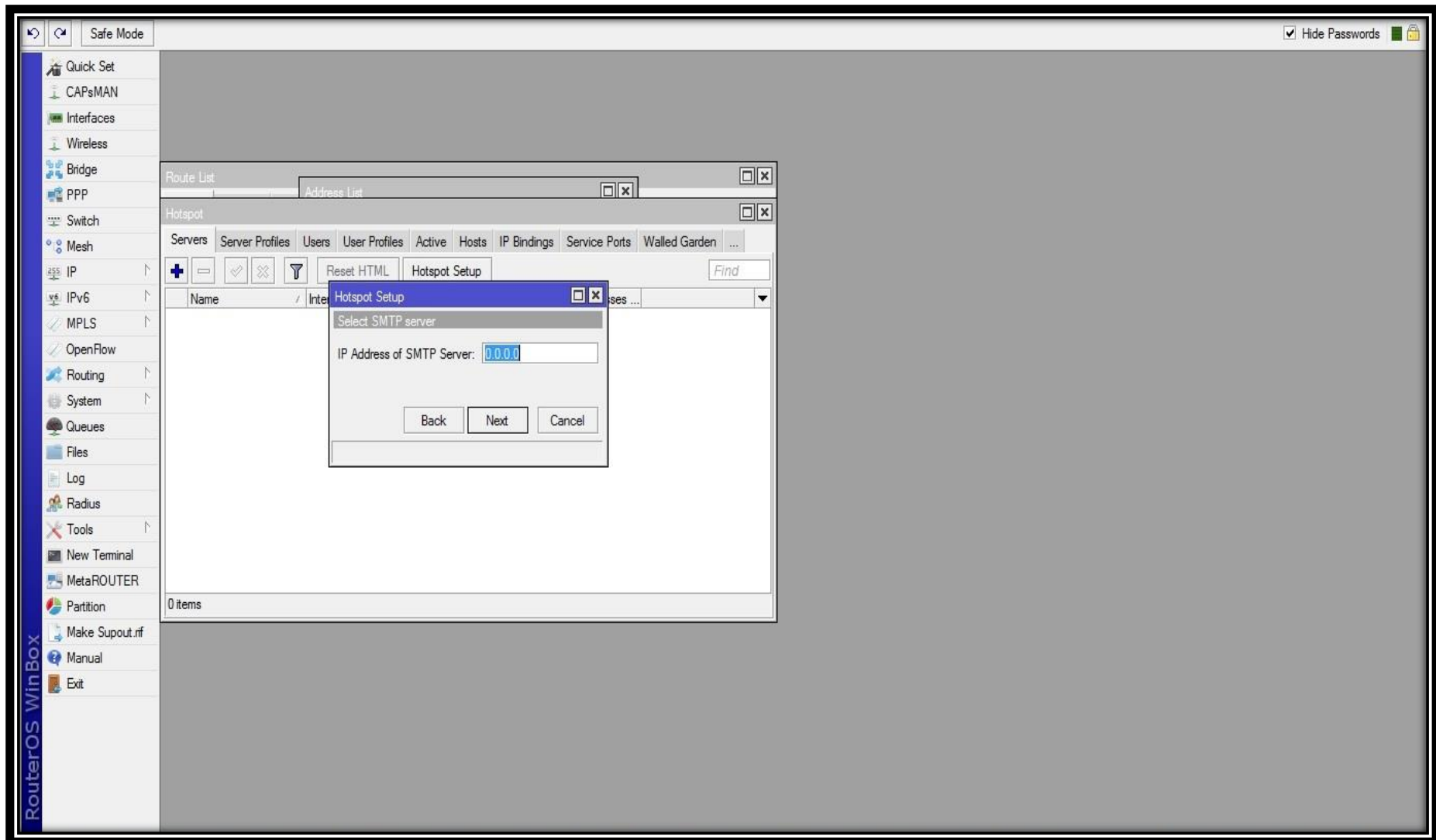
Configuration LAN , WAN & RADIUS



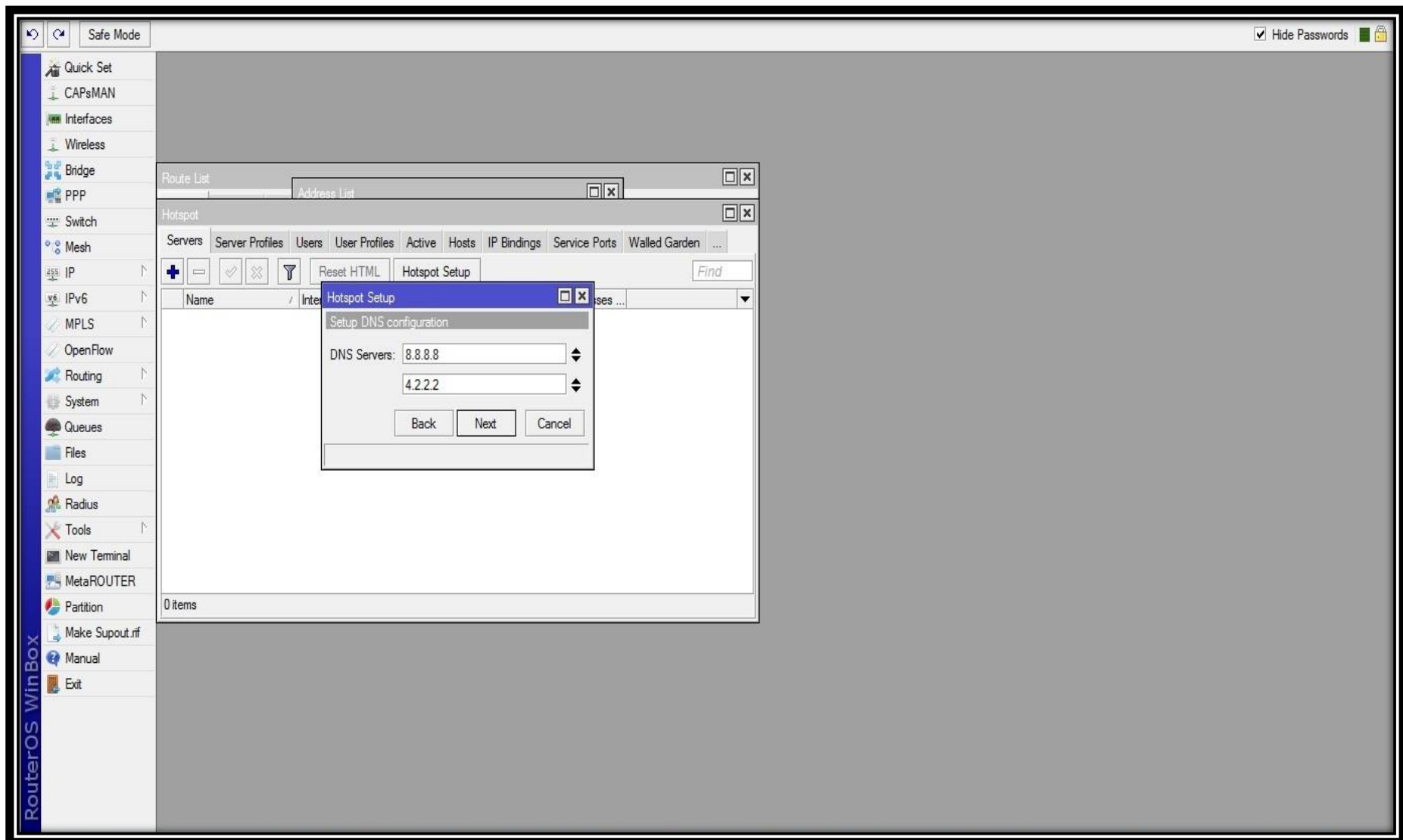
Configuration LAN , WAN & RADIUS



Configuration LAN , WAN & RADIUS

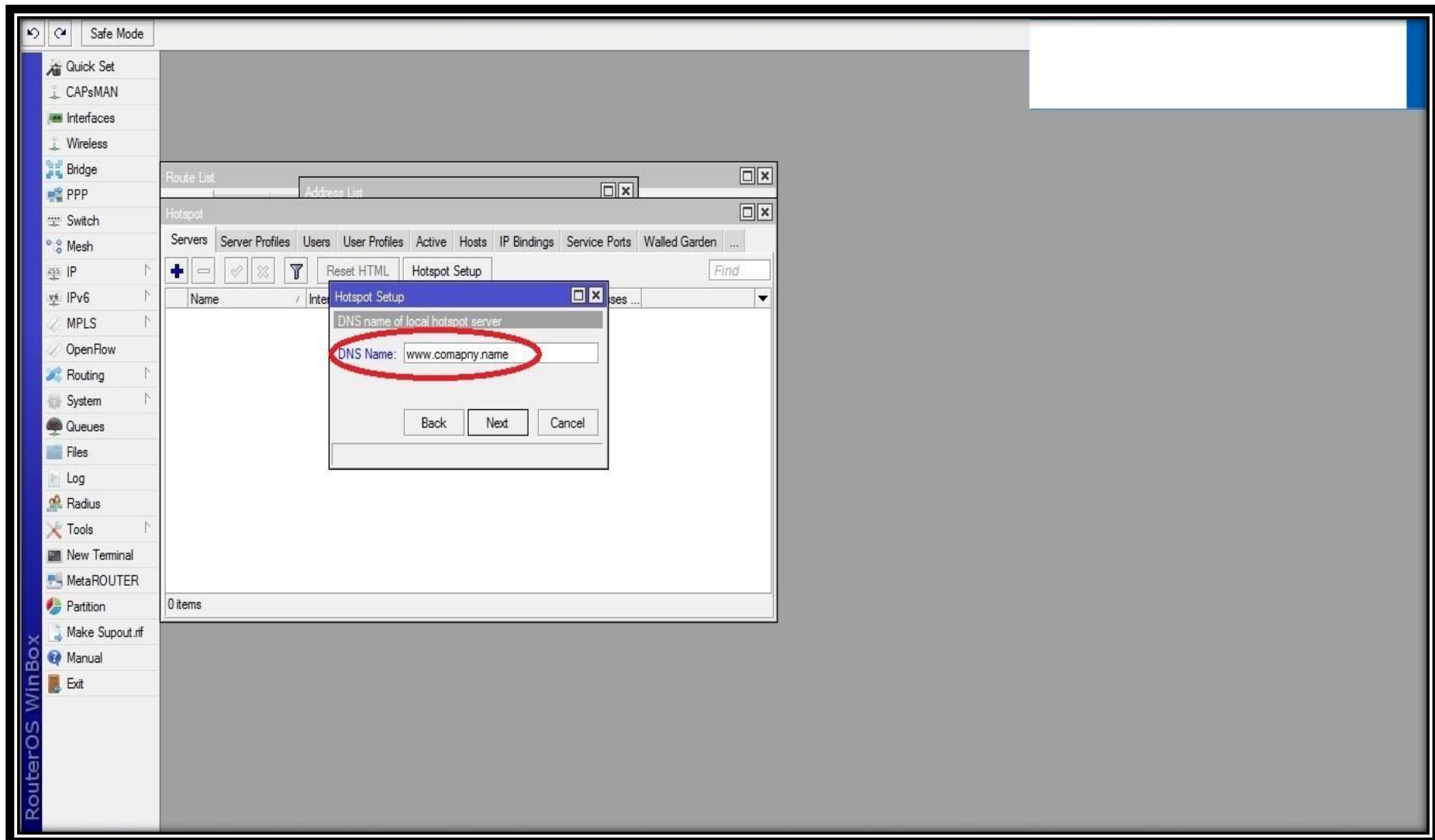


Configuration LAN , WAN & RADIUS



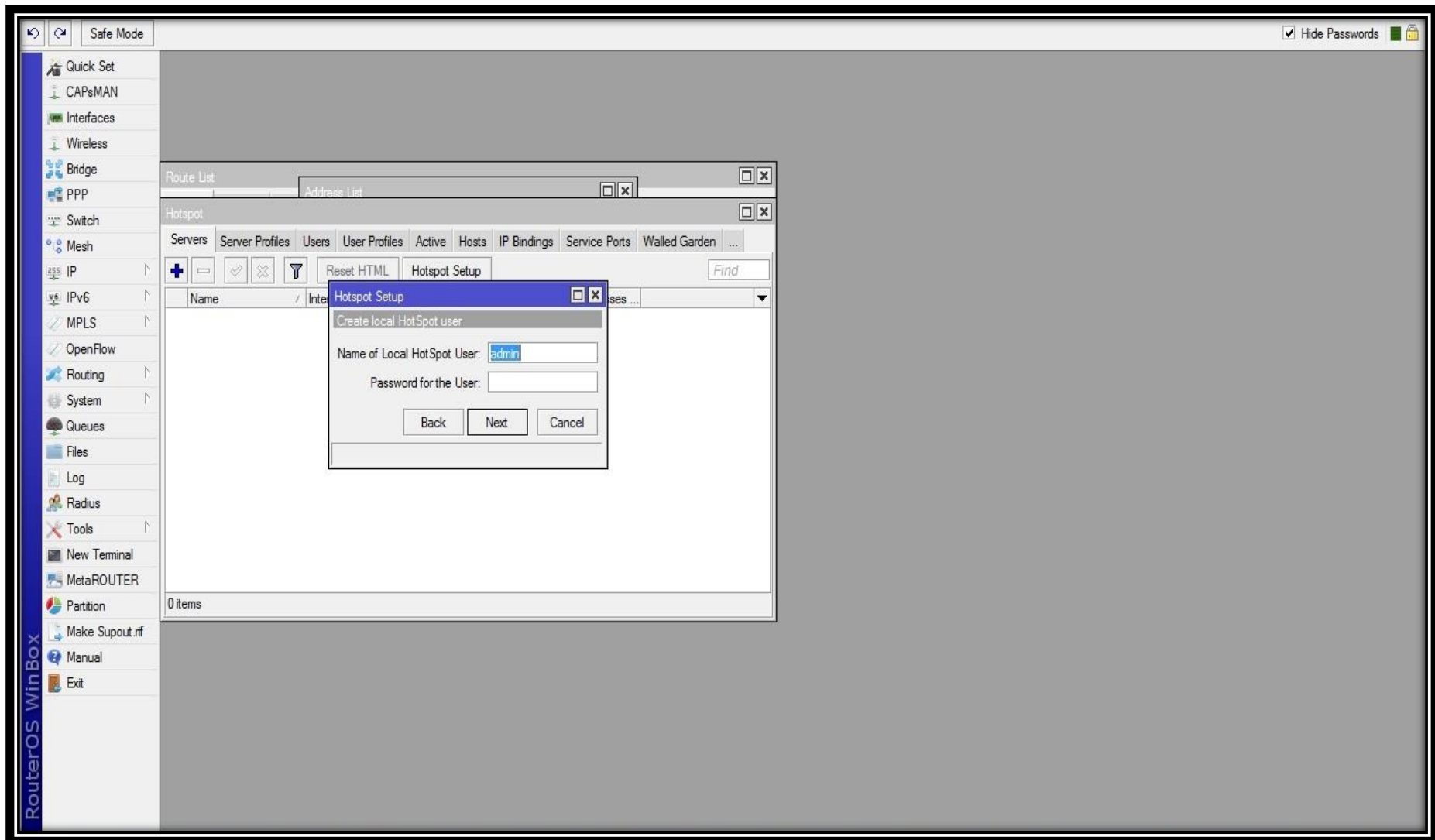
➤ Click Next & Check again DNS

Configuration LAN , WAN & RADIUS



➤ Put your DNS Server Name (Ex - www. company.name) – Click Next

Configuration LAN , WAN & RADIUS



Configuration Hotspot

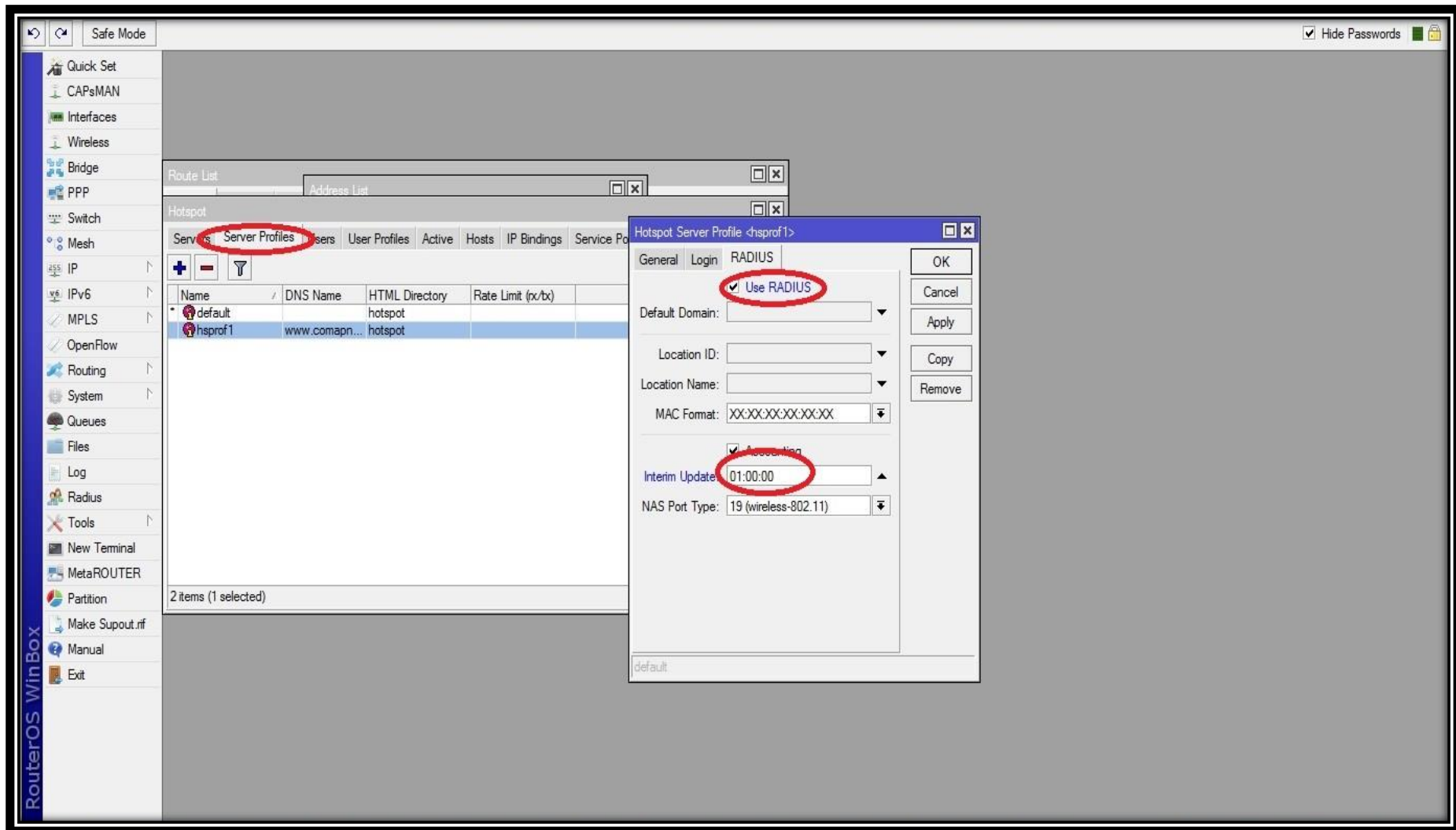
The screenshot shows the RouterOS WinBox interface. On the left is a sidebar with a menu including: Quick Set, CAPsMAN, Interfaces, Wireless, Bridge, PPP, Switch, Mesh, IP, IPv6, MPLS, OpenFlow, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, MetaROUTER, Partition, Make Supout.tif, Manual, and Exit. The main window displays the 'Hotspot' configuration page. At the top, there are tabs for Servers, Server Profiles, Users, User Profiles, Active, Hosts, IP Bindings, Service Ports, and Walled Garden. Below these is a 'Hotspot Setup' section with a table. The table has columns: Name, Interface, Address Pool, Profile, and Addresses. It contains one entry: 'hotspot1' on interface 'ether3', using address pool 'hs-pool-3', profile 'hsprof1', and having 2 addresses. A 'Hotspot Setup' dialog box is overlaid on the table, showing the message 'Setup has completed successfully' and an 'OK' button. The top of the WinBox window shows 'Safe Mode' and a 'Hide Passwords' checkbox.

Name	Interface	Address Pool	Profile	Addresses ...
hotspot1	ether3	hs-pool-3	hsprof1	2

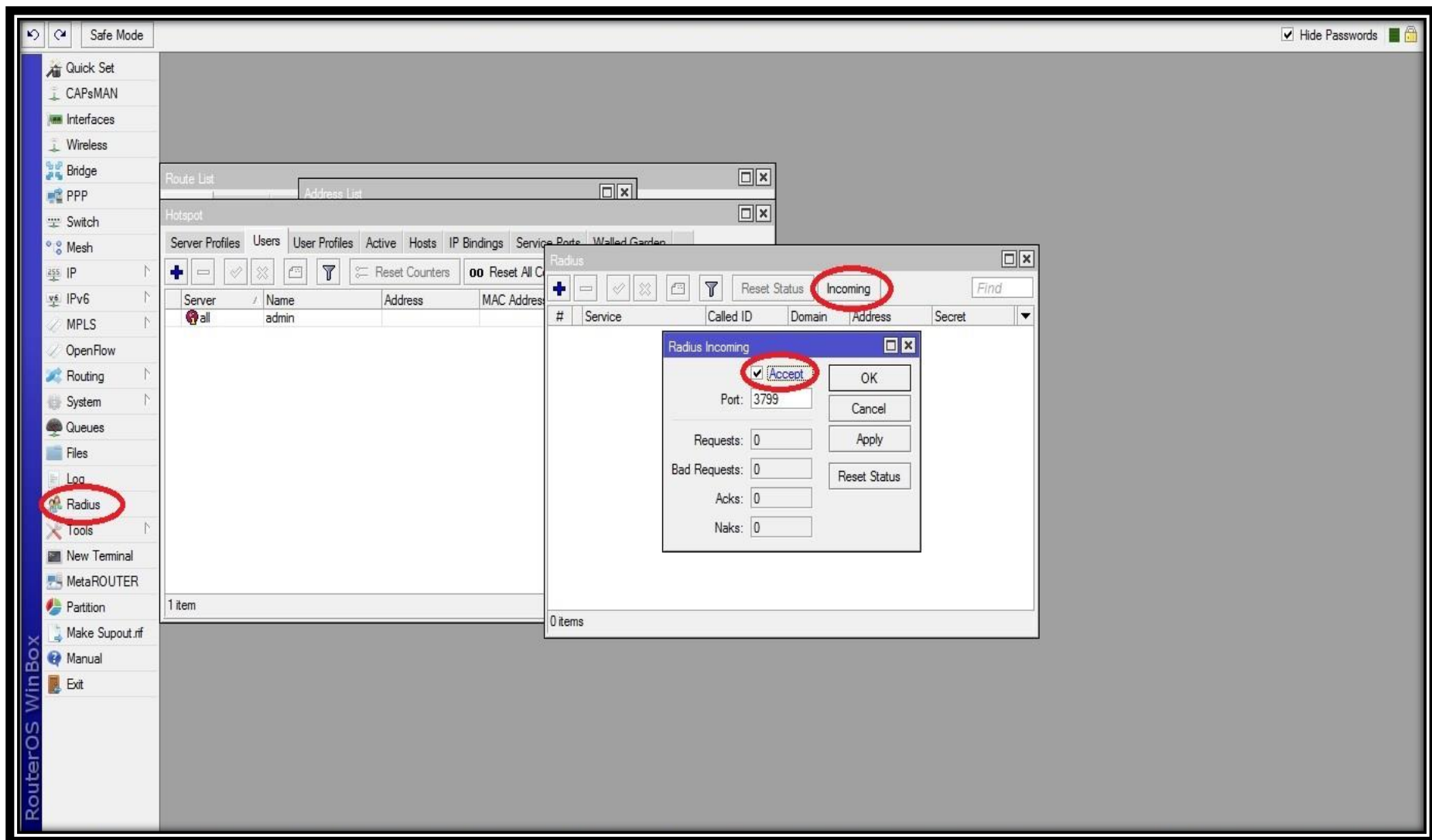
Hotspot Setup

Setup has completed successfully

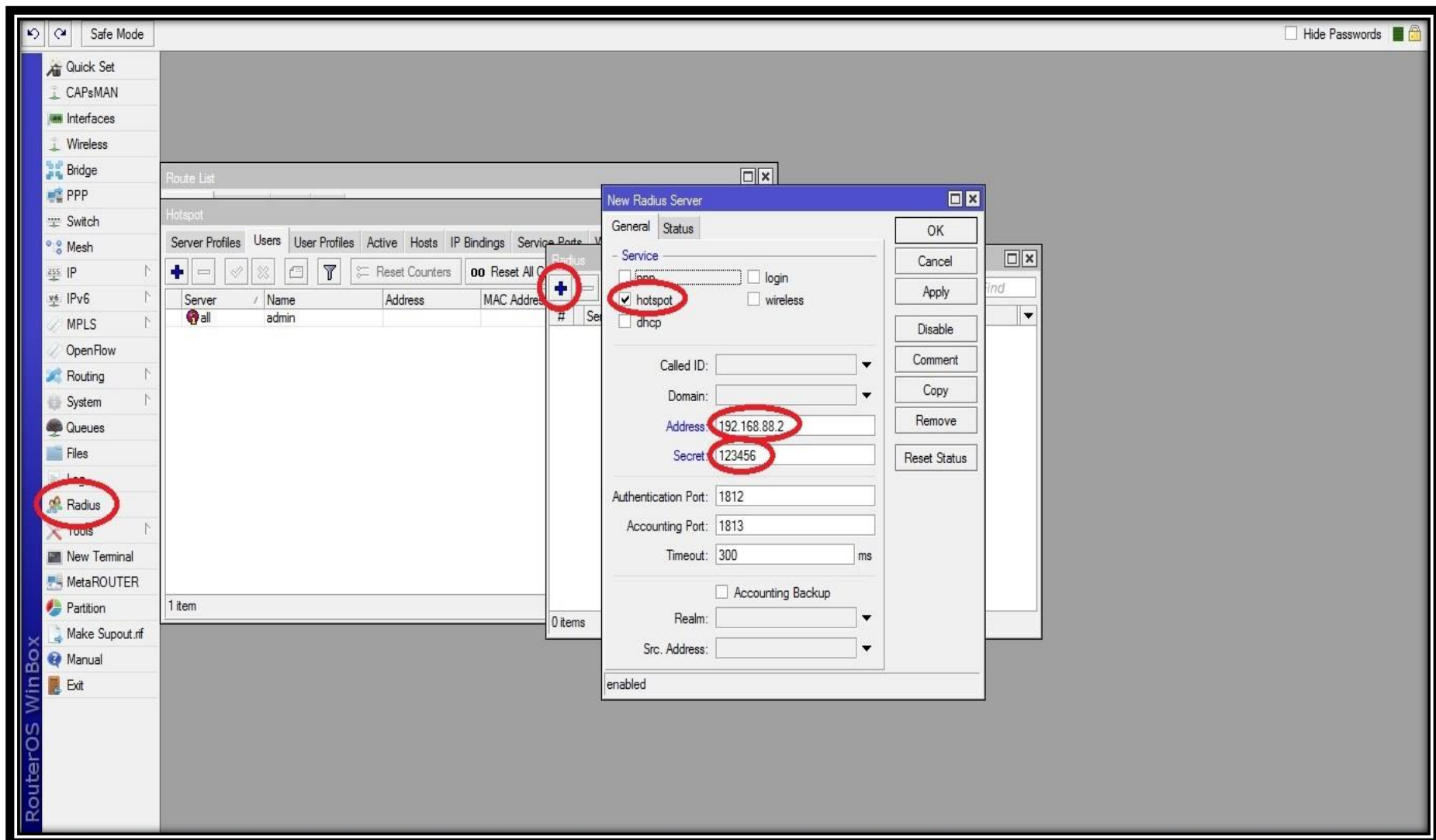
OK



- **IP – Hotspot – Server Profile – Double Click on Hotspot1 - Click Use Radius.**



➤ Click Radius – Click Incoming – Click Accept



➤ Click Radius – Click Add – Click Hotspot – Put Address (Radius IP) and Secret (123456)

- **Then connect your Laptop through your Mikrotik NAS LAN port and obtain an IP address automatically (If DHCP Enable).**

Mikrotik Hotspot Page

← → ↻ www.comapny.name/login ☆ ≡

Latviski

Please log on to use the internet hotspot service

login

password

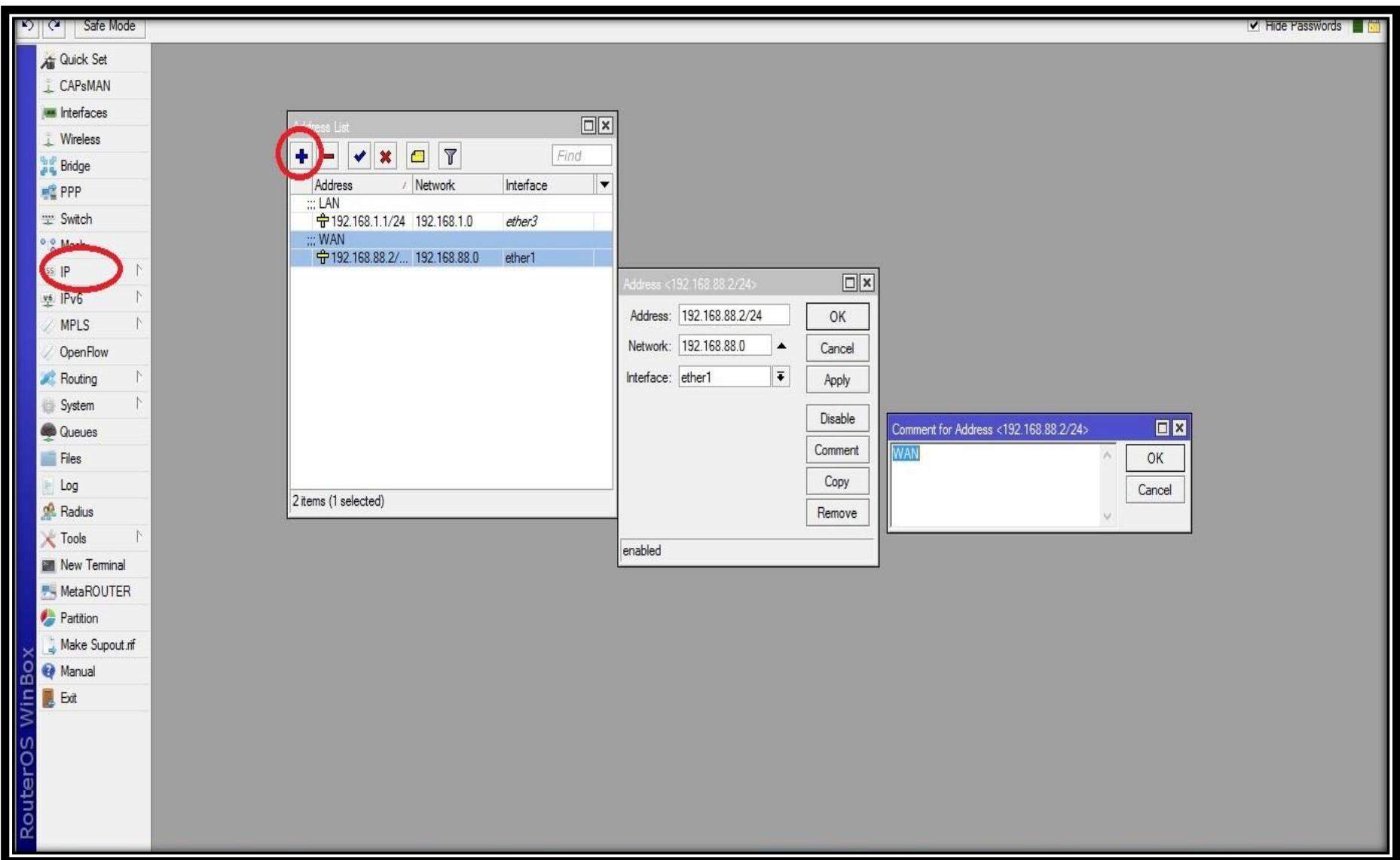
HOTSPOT GATEWAY
powered by *MikroTik*

Powered by MikroTik RouterOS

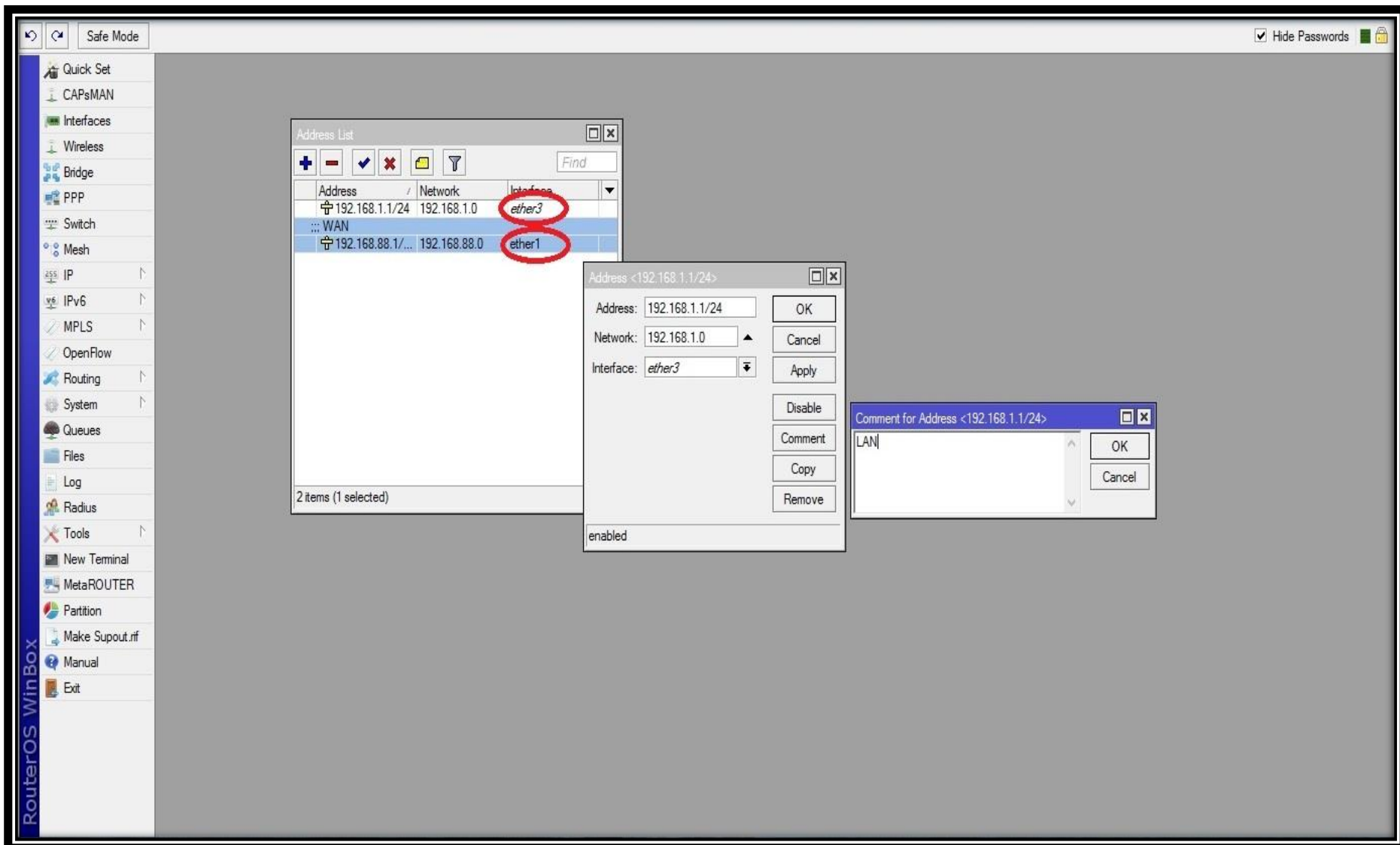
➤ **Open any Browser and type your DNS server name or your LAN gateway and login through admin**

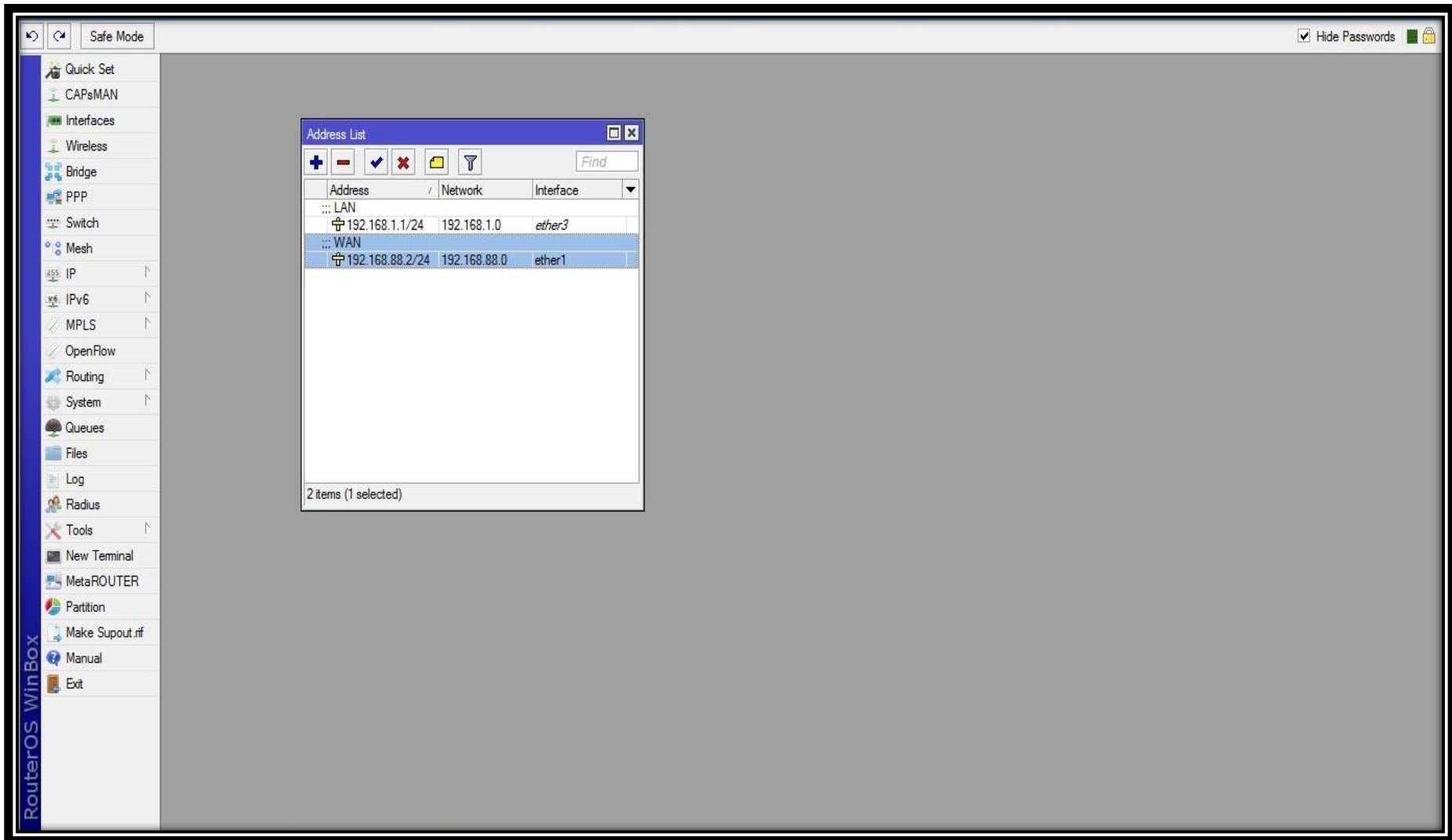
□ Mikrotik NAS Setup with PPPOE

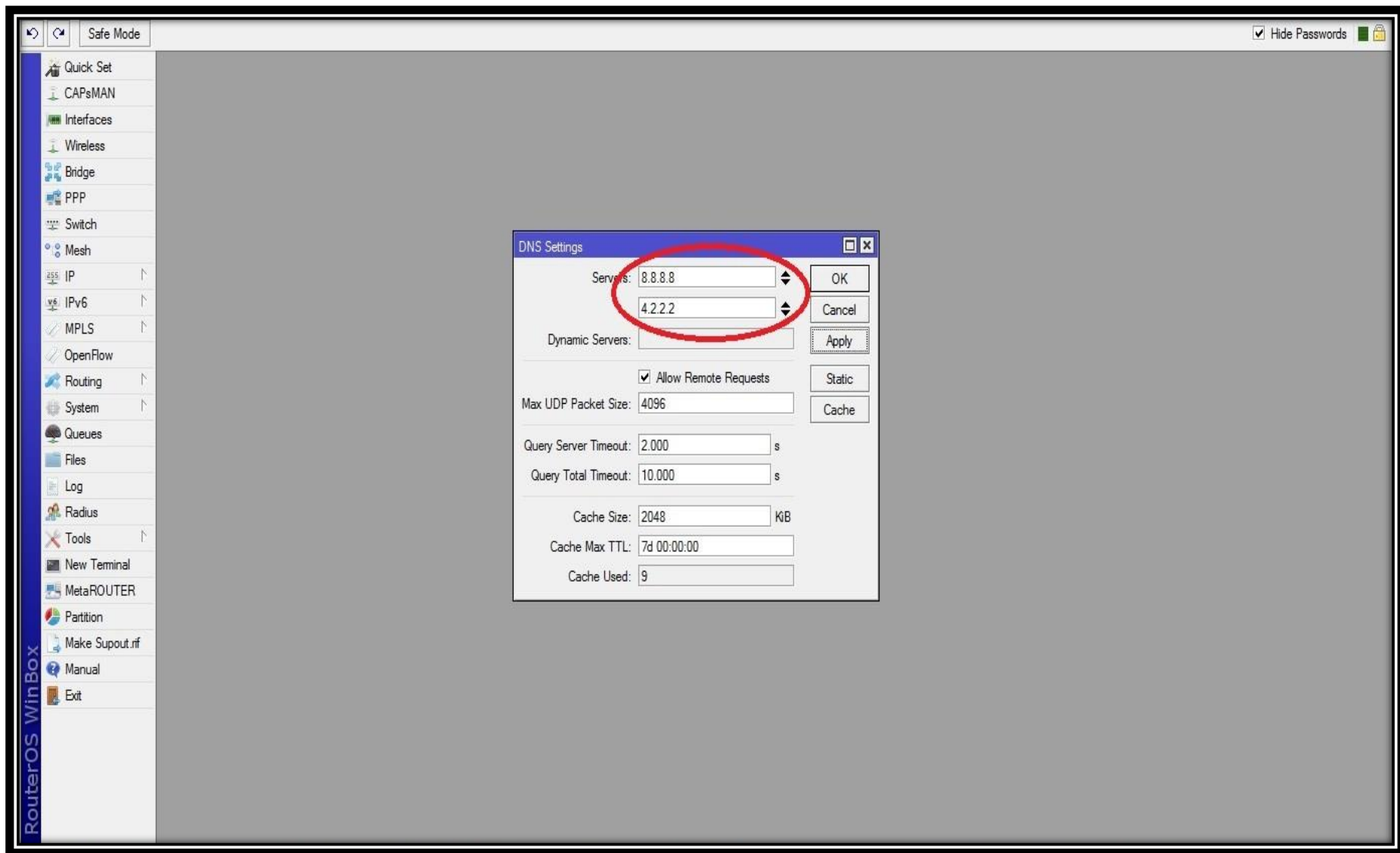
Configuration LAN & WAN



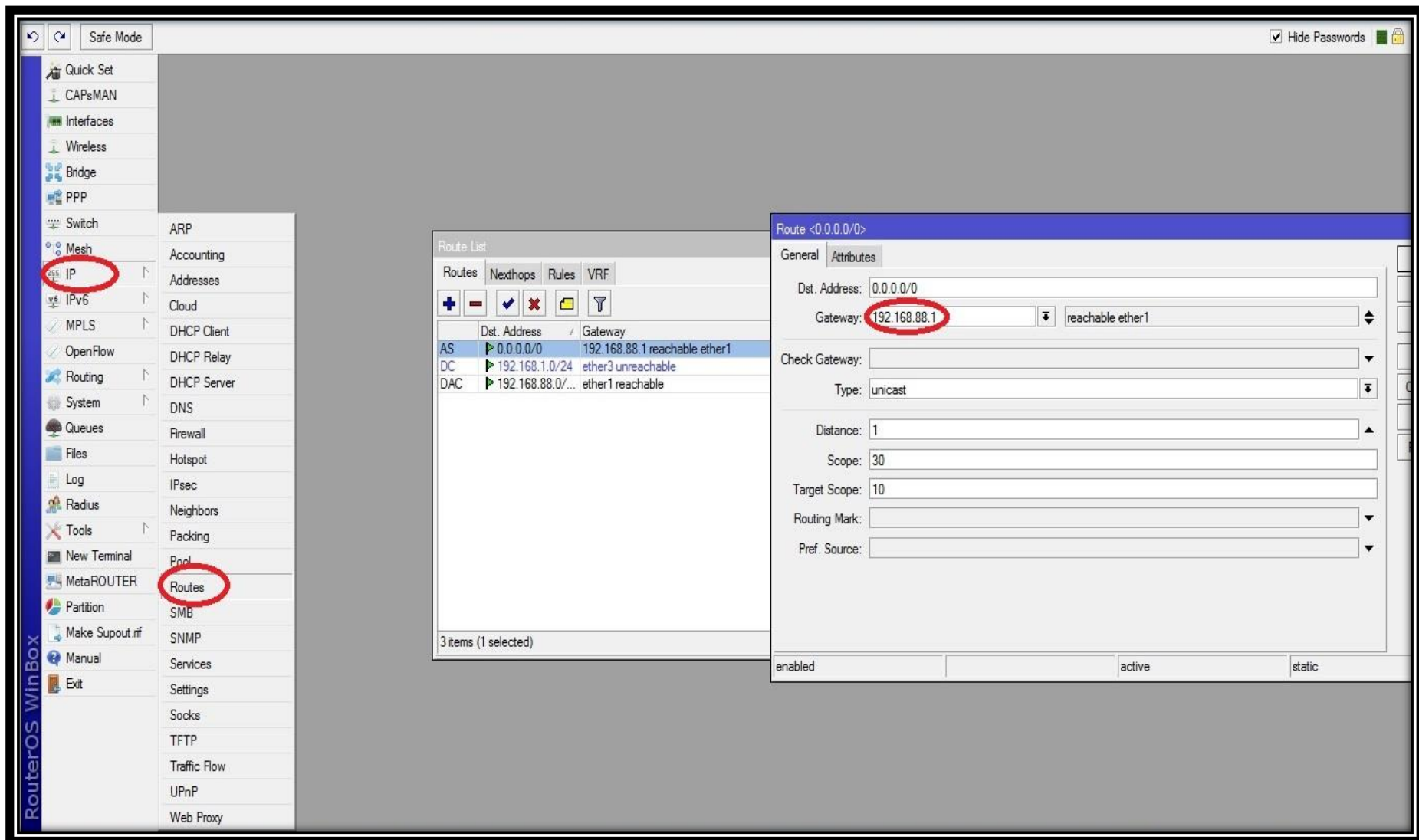
➤ Go to IP - Add IP For LAN & WAN



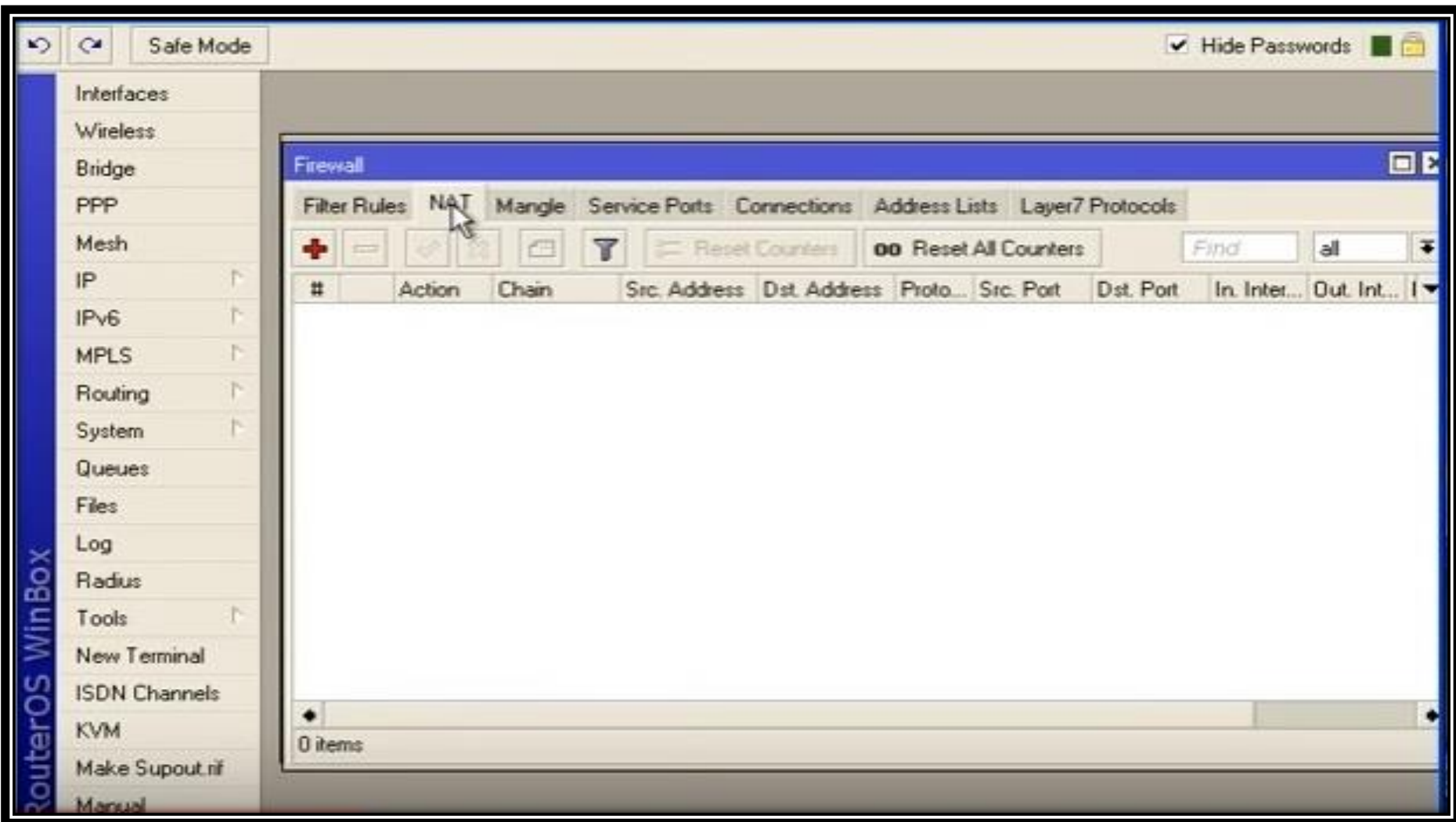




➤ Go to IP – DNS – Add DNS Server



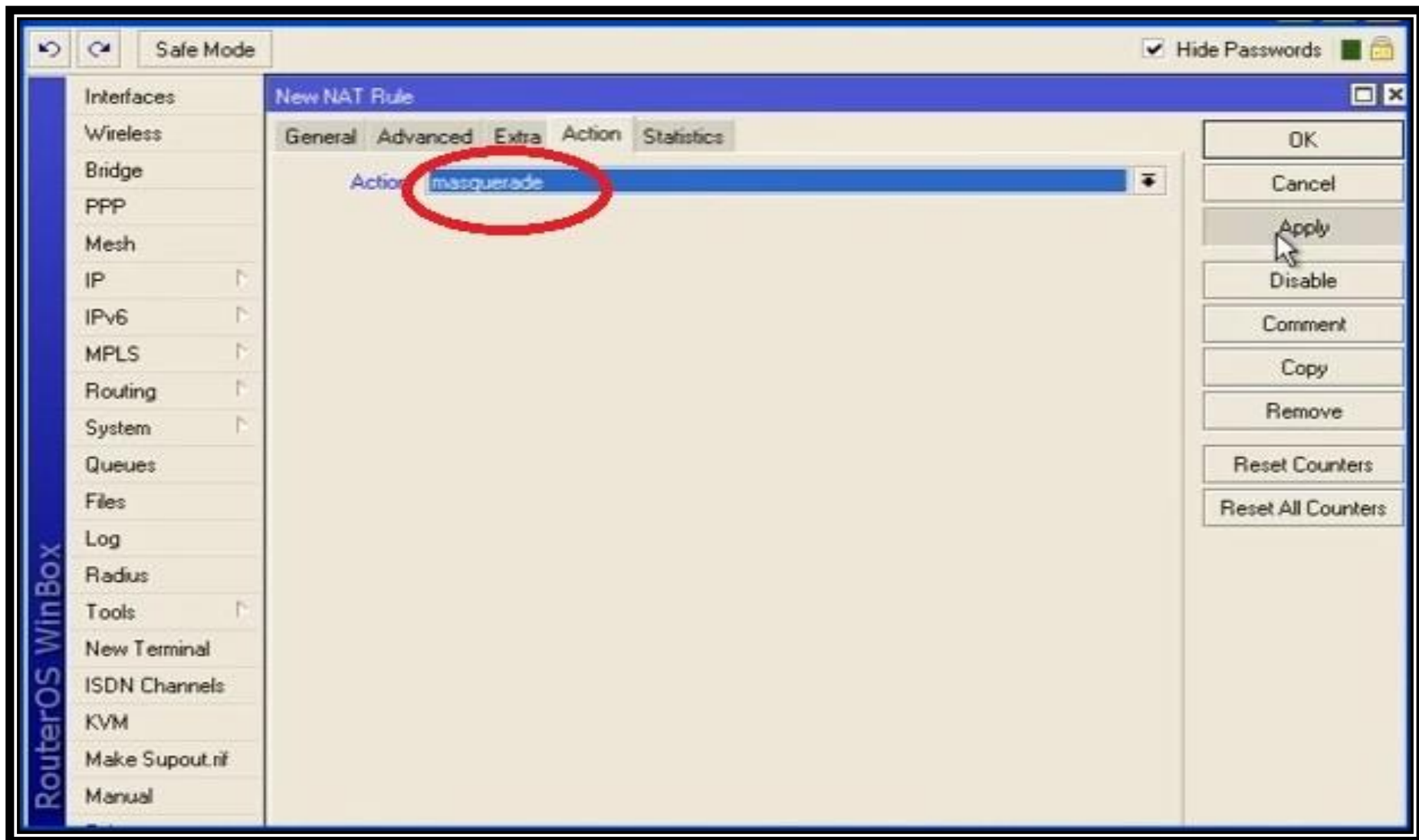
➤ Go to IP – Routes – Add Gateway



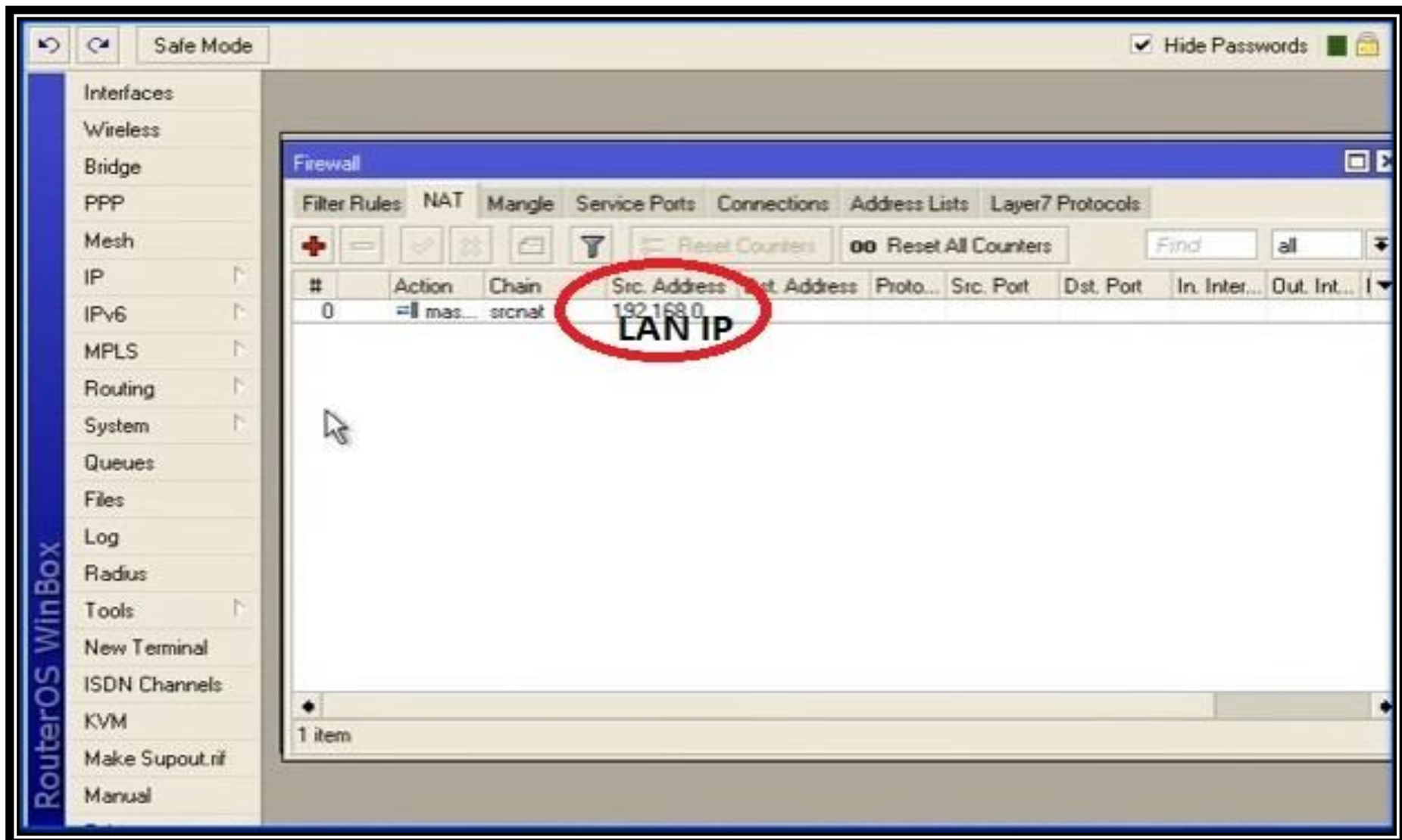
➤ Go to IP – Firewall – NAT



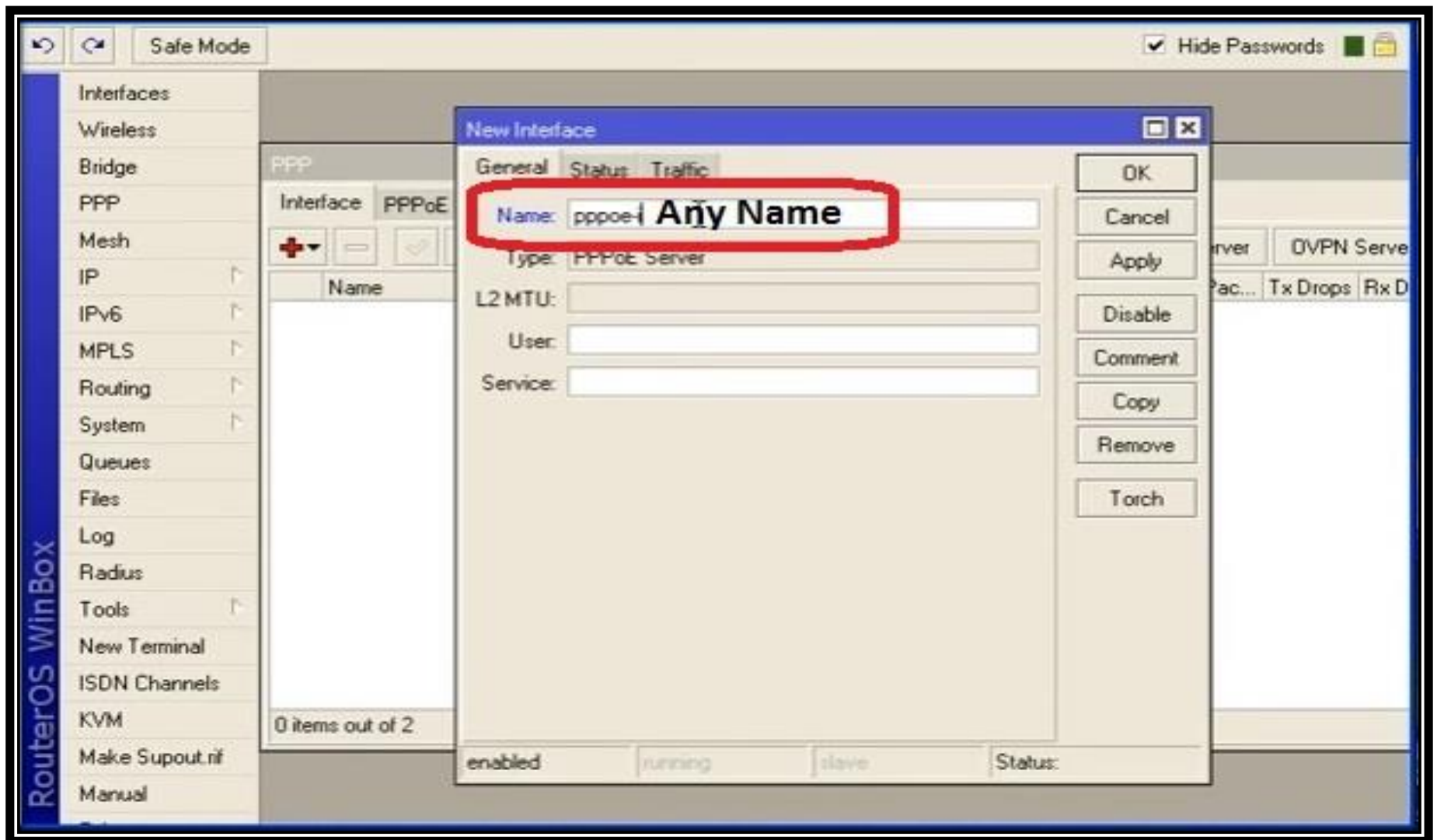
➤ Add NAT Rule – Chain – srcnat – Src. Address (LAN IP)



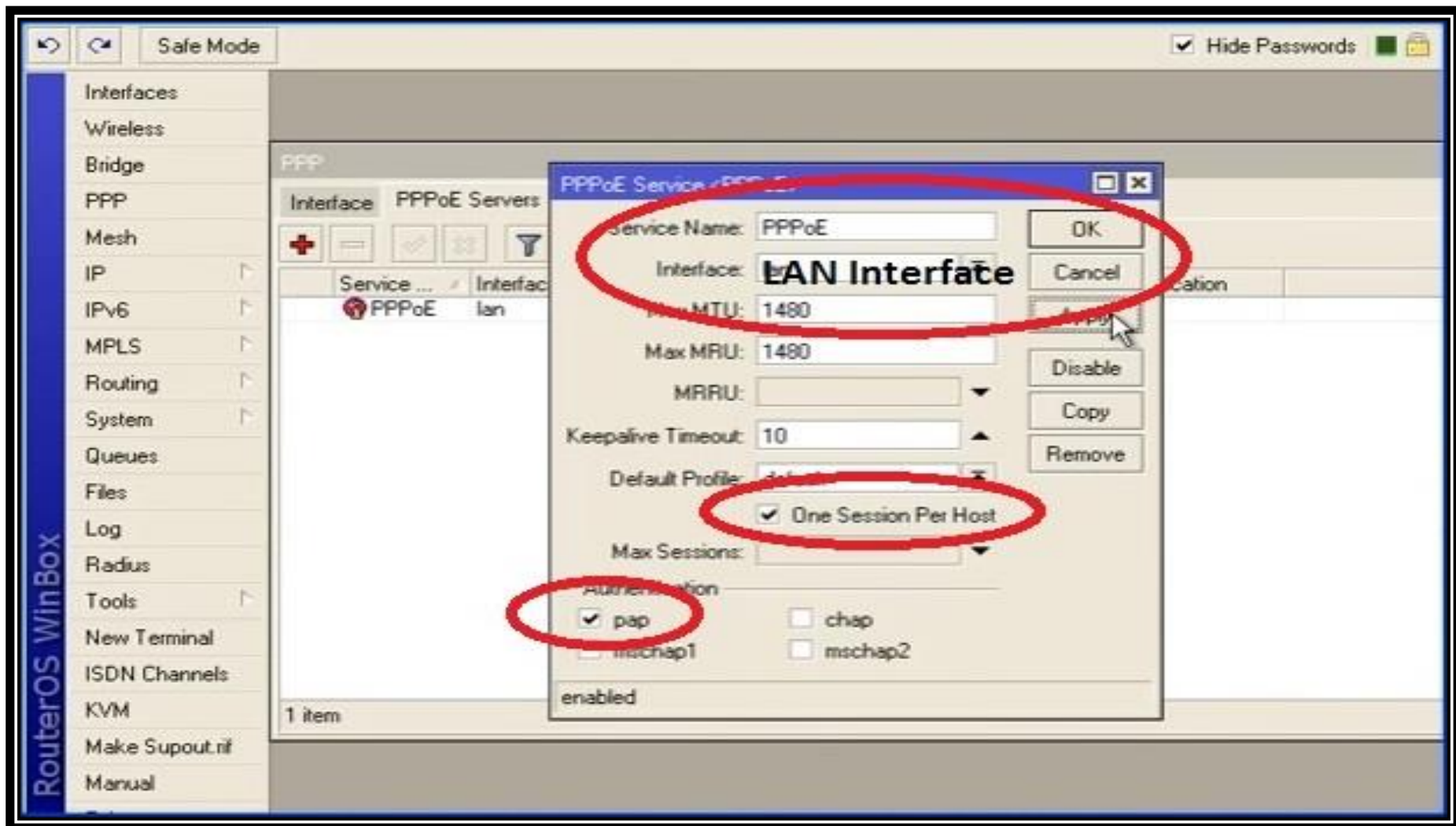
➤ Go to Action – Select Masquerade – Apply & Ok



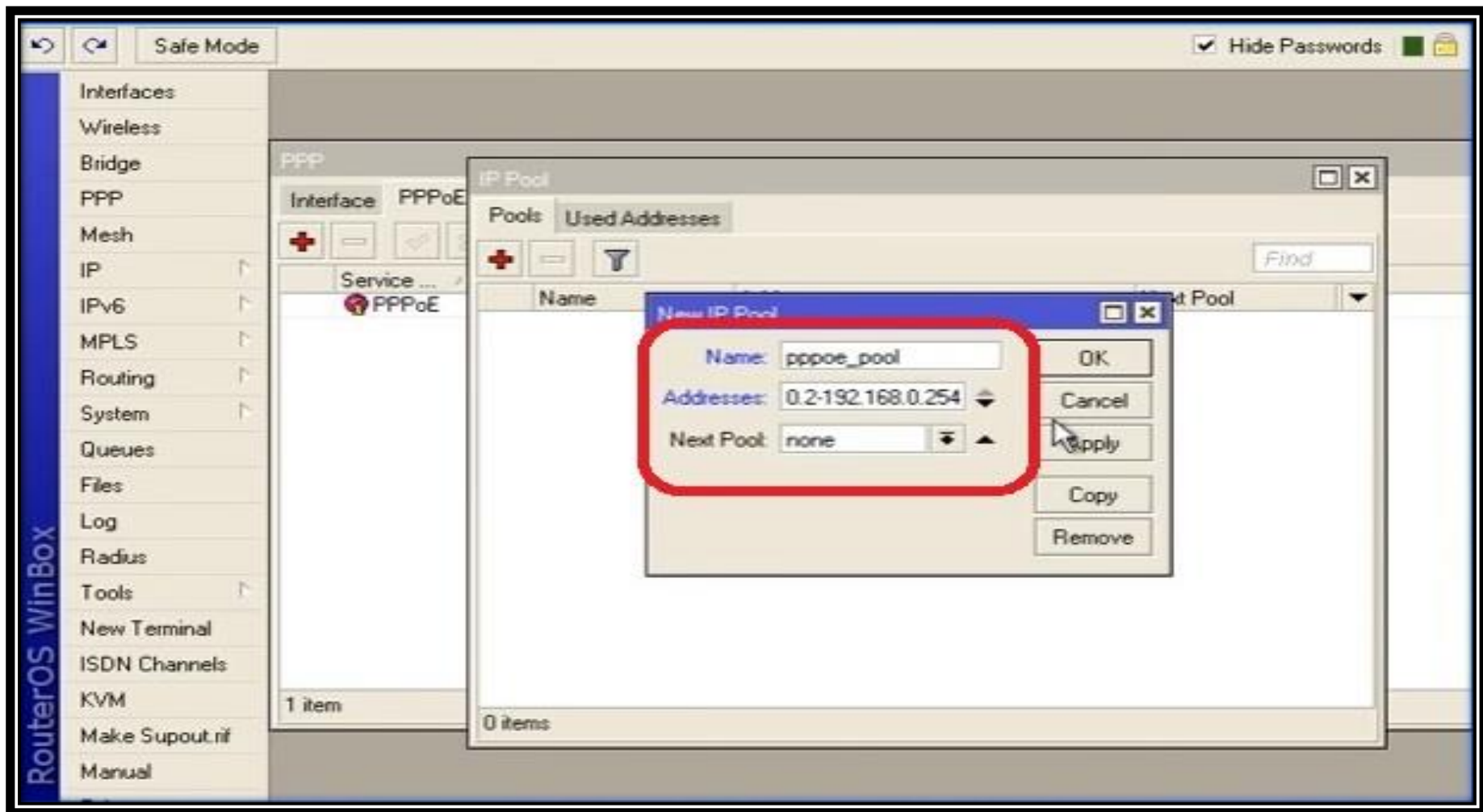
➤ Please Check Once NAT Rule



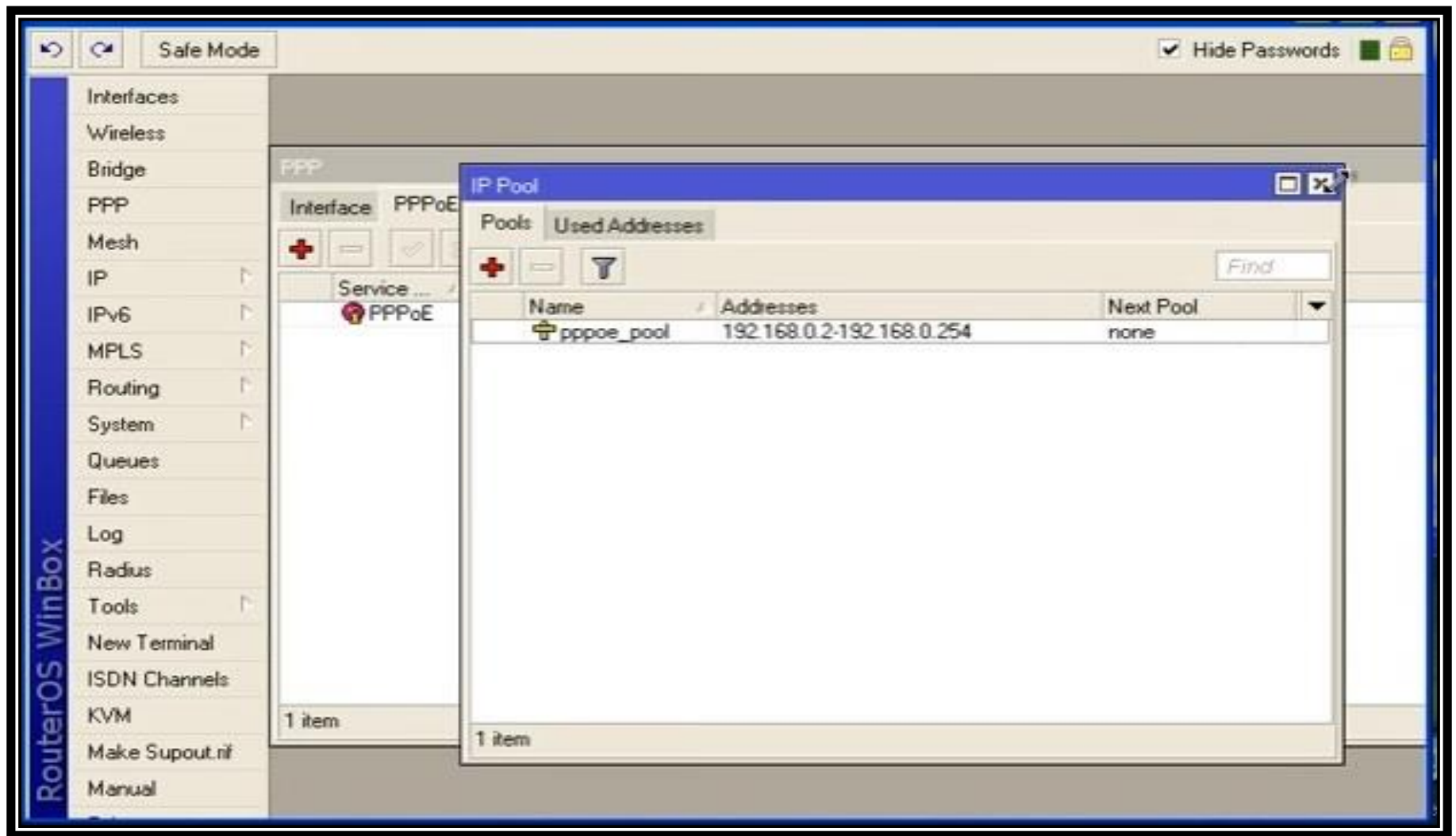
➤ Go to PPP – Interface – Set Name- Apply & Ok



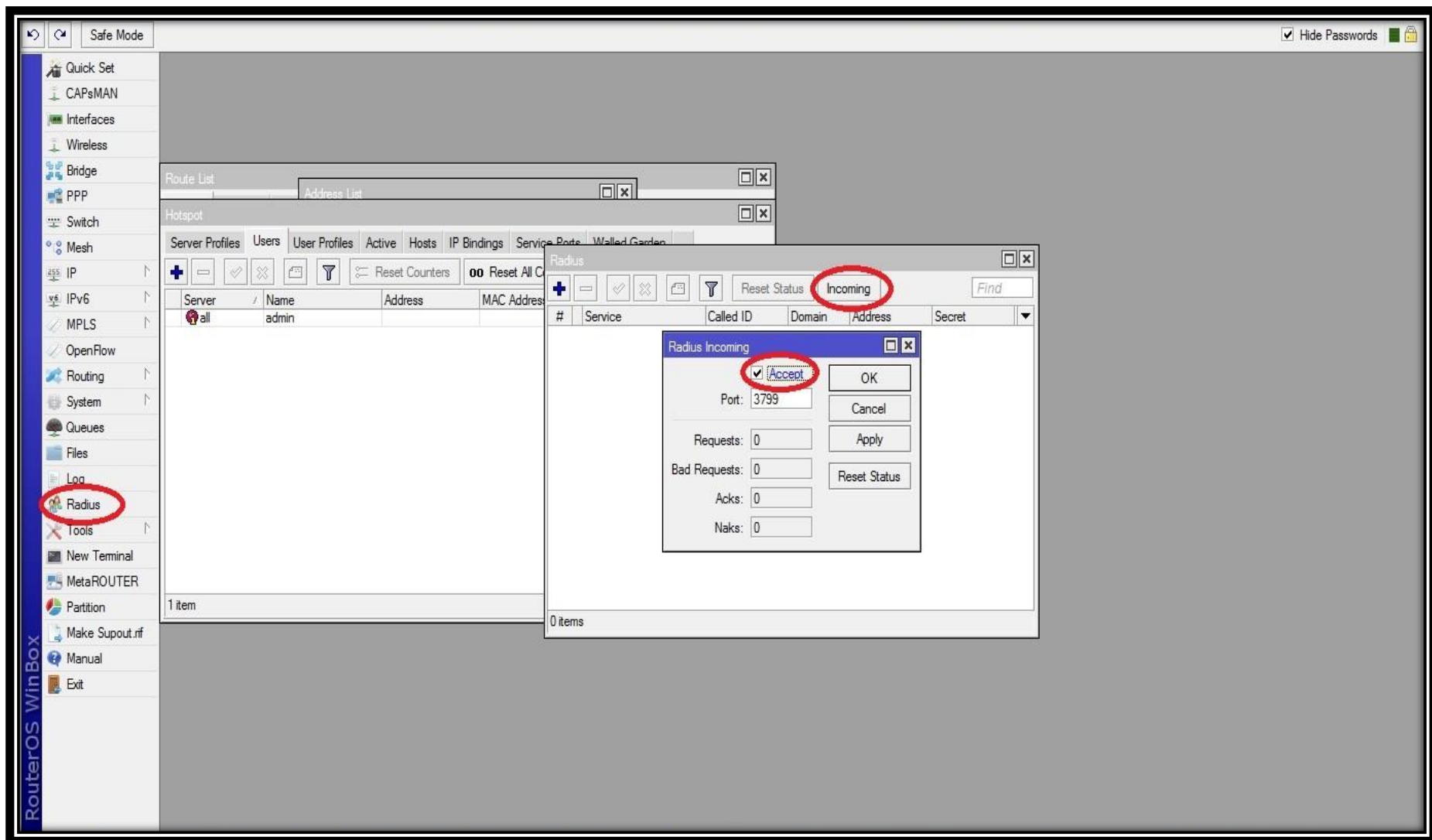
- Go to PPPoE Servers – Set Services Name – Set LAN Interface – Click One Session Per Host – Click pap – Apply & Ok



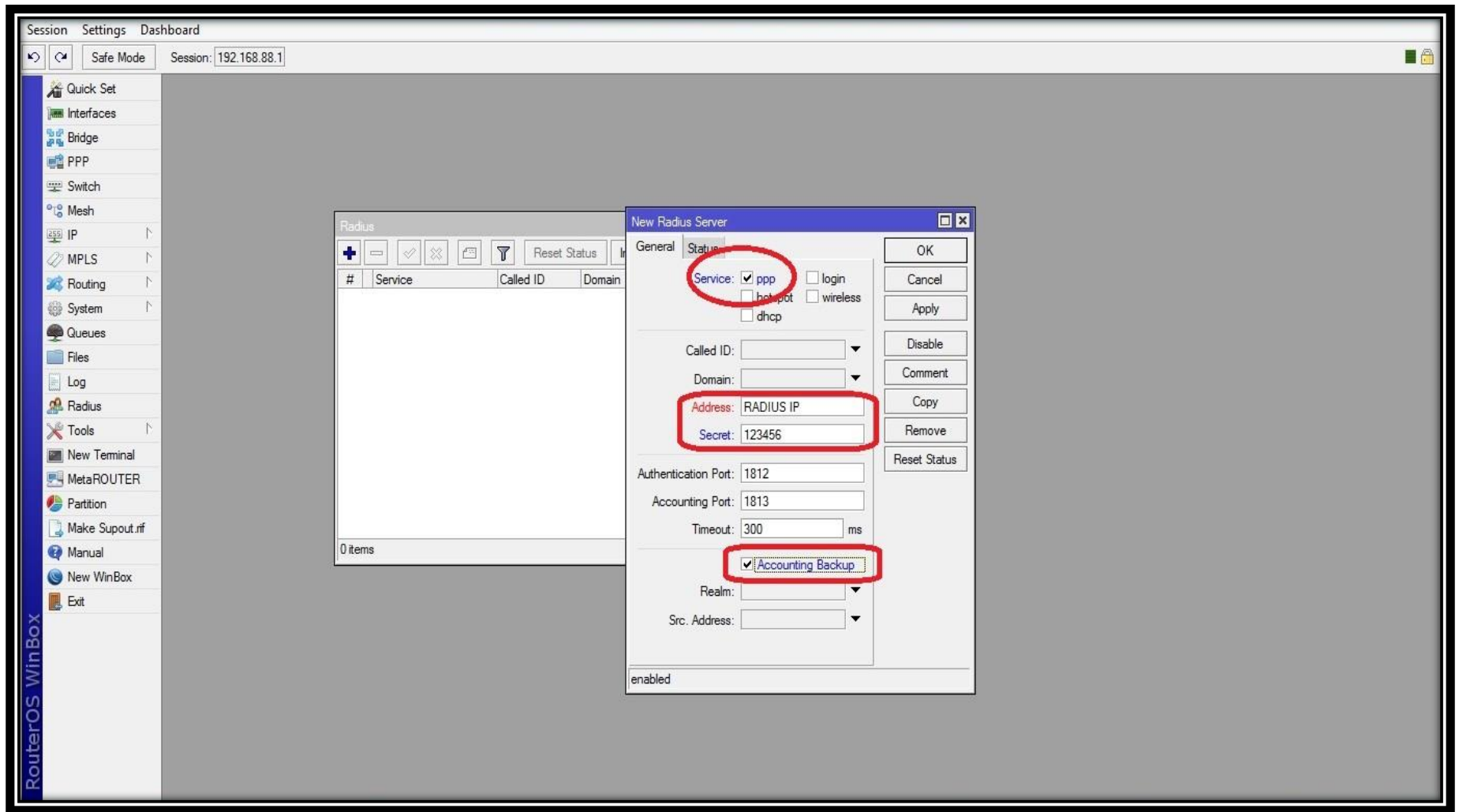
➤ **Go to IP – Pool – Add New Pool – Set Pool Name – Set LAN Address**



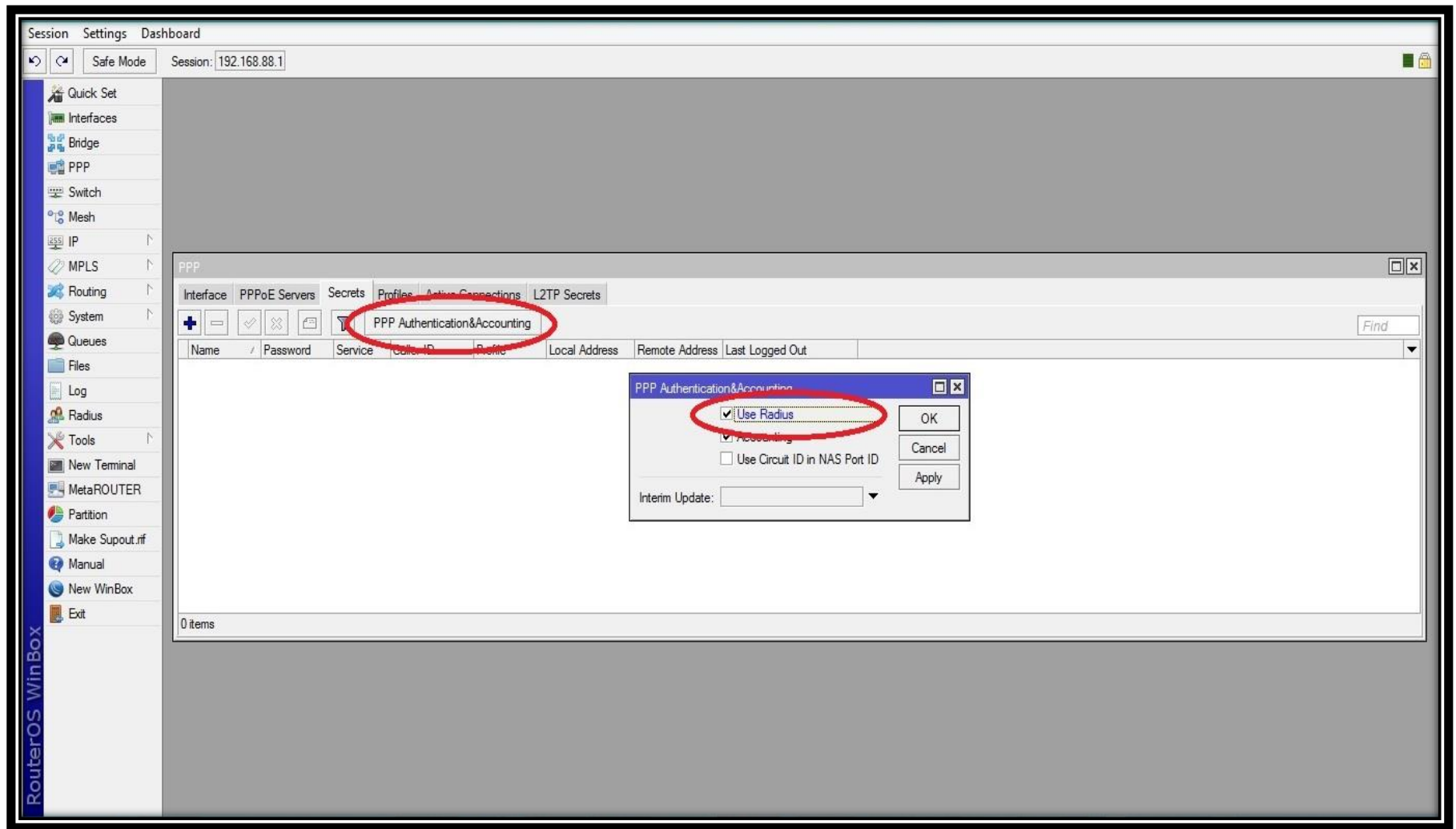
➤ Check Once IP PPPoE Pool



➤ Click Radius – Click Incoming – Click Accept



➤ **Go to Radius – Click Service (PPP) – Set Address (Radius IP) – Set Secret (123456) – Click Accounting Backup**



➤ Go to PPP – Click Secrets – PPP Authentication & Accounting – Click Use Radius

- **Then connect your Laptop through your Mikrotik NAS LAN port and obtain an IP address automatically.**

Conclusion

Economical choice with a large installed base

- One of the most successful industry standards in history and experiencing rapid progress with newer extensions to enhance performance.
- Proven for “**Last Hundred Mile**” connectivity
- Cost-effective technology and a smarter choice for connectivity in the campus wide area connection.

Answer: future proof by selecting products which allow co-existence of currently available matured technology with new wireless and fiber Technologies.





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