

# 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...



# 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.**



Our Clients



# 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.
7. Online Sales portal [www.multilinkonline.com](http://www.multilinkonline.com)





# ONLINE PORTAL

The screenshot displays a web browser window with the URL [www.multilinkonline.com/Mikrotik-Wireless-Products\\_c\\_10.html](http://www.multilinkonline.com/Mikrotik-Wireless-Products_c_10.html). The page features a navigation menu with links such as Home, About Us, Why Multilink, Services, My Account, Support, Blog, ISP Licence, Upcoming Wireless Products, Knowledge Base, RailWire Registration, and Contact Us. A search bar is located at the top left, and a shopping bag icon indicates 0 items in the bag with a total of Rs.0. A sidebar on the left lists various product categories including Revo FTTH Products, Mikrotik RouterBoard, and Mikrotik Wireless Products. The main content area is titled "Mikrotik Wireless Products" and features a "FEATURED PRODUCTS" section with four items: MikroTik SXT Lite5 x 20 (Rs.70,000.00), MikroTik SXT Lite5 (Rs.3,500.00), RB951G-2HnD (Rs.5,200.00), and BaseBox5 (Rs.5,800.00). Each product has an "Add To Cart" button. Below this, a "PRODUCTS (TOTAL ITEMS: 32)" section is visible with a price filter set to "Low to High". On the right side, there is a "Customer Care" section with the number 8080808292 and an "OFFER ZONE" for the REVO 610GZ 1 Port ONU at Rs. 1299/- Only. The Windows taskbar at the bottom shows the time as 12:57 PM on 02-Sep-16.



[www.multilinkonline.com](http://www.multilinkonline.com)

We help you to create links!!

# ONLINE PORTAL

The screenshot shows a web browser window with the URL [www.multilinkonline.com/Mikrotik-Wireless-Products\\_c\\_10.html](http://www.multilinkonline.com/Mikrotik-Wireless-Products_c_10.html). The page features a navigation menu with links like Home, About Us, Why Multilink, Services, My Account, Support, Blog, ISP Licence, Upcoming Wireless Products, Knowledge Base, RailWire Registration, and Contact Us. A search bar is located at the top left. The main content area displays the Mikrotik LHG 5 product, which is a compact and light 5GHz 802.11 a/n wireless device with an integrated dual polarization 24.5 dBi grid antenna. The product is currently in stock and priced at Rs. 4,700.00. The page also includes a customer care section with a live support chat and an offer zone for REVO 610GZ 1 Port ONU. The Windows taskbar at the bottom shows the time as 1:00 PM on 02-Sep-16.



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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**

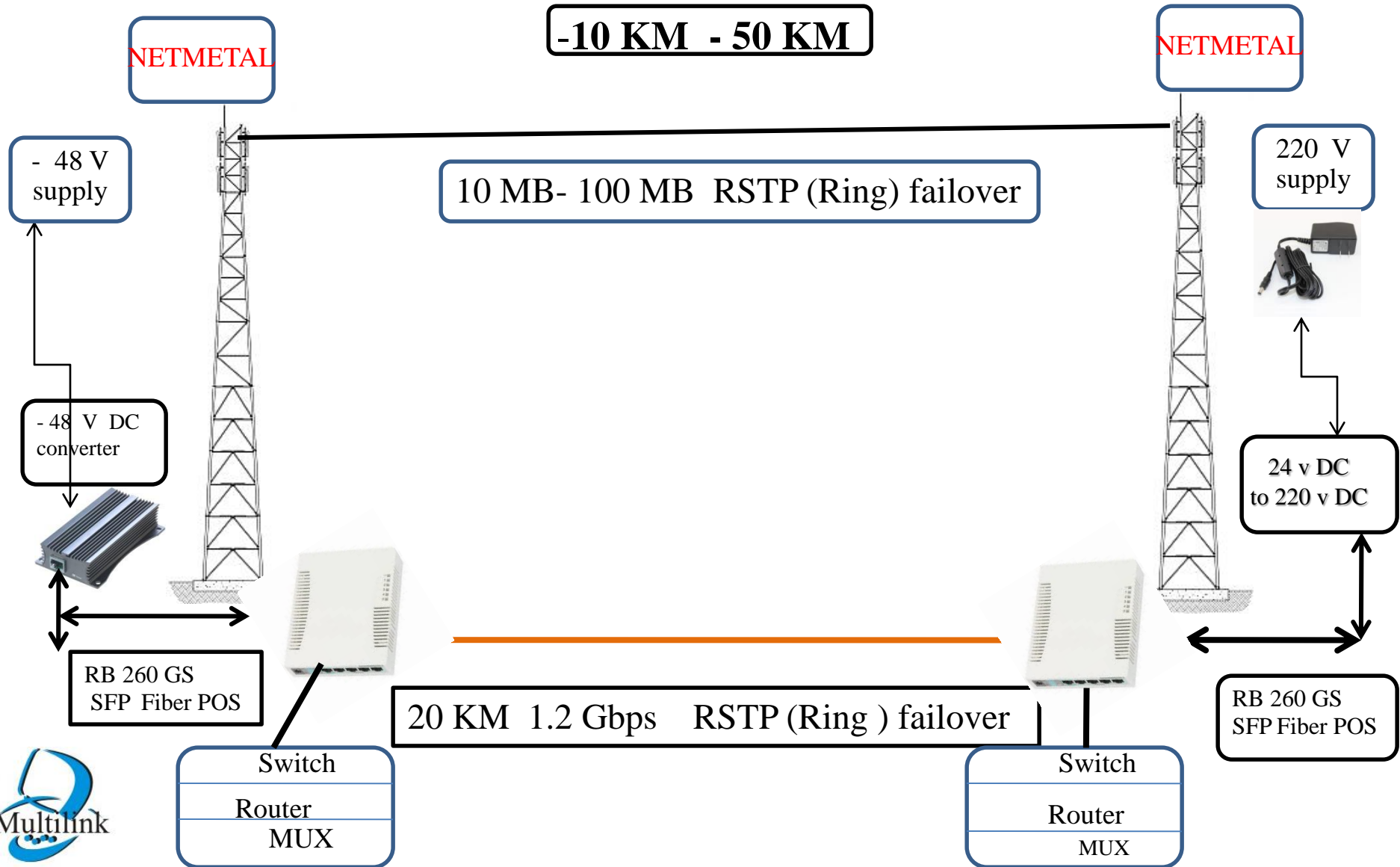


# WIRELESS

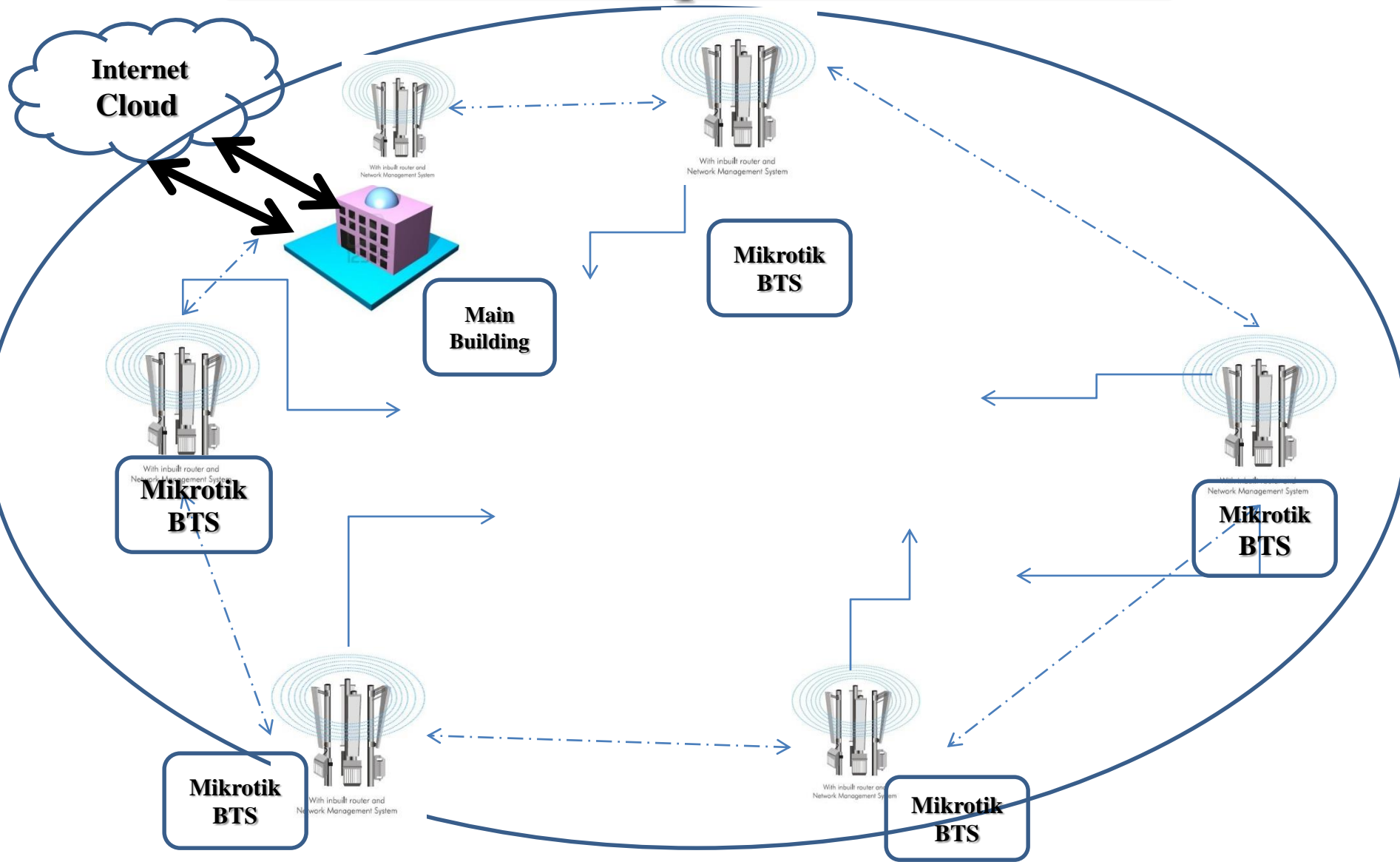
- **Very Easy to deployable**
- **Network Connectivity without wire**
- **Point to Point 802.11 ac series**
- **Multipoint Connectivity**
- **Wi- Fi Zone Creation**
- **Base Station/Hotspot**
- **Access Point**



# Mikrotik PTP RF link with Fiber in RSTP topology.

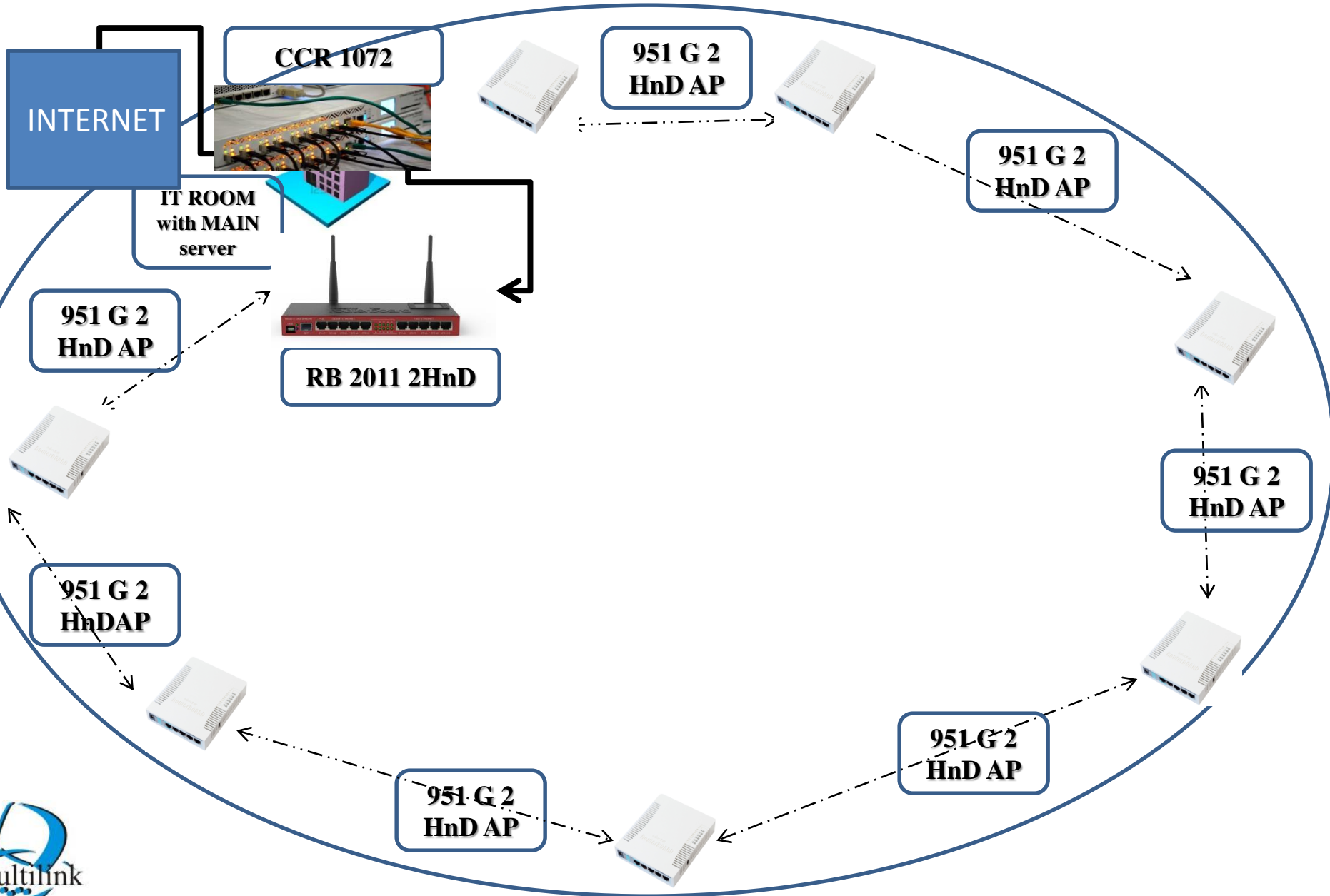


# Mikrotik Campus Wi-Fi Zone

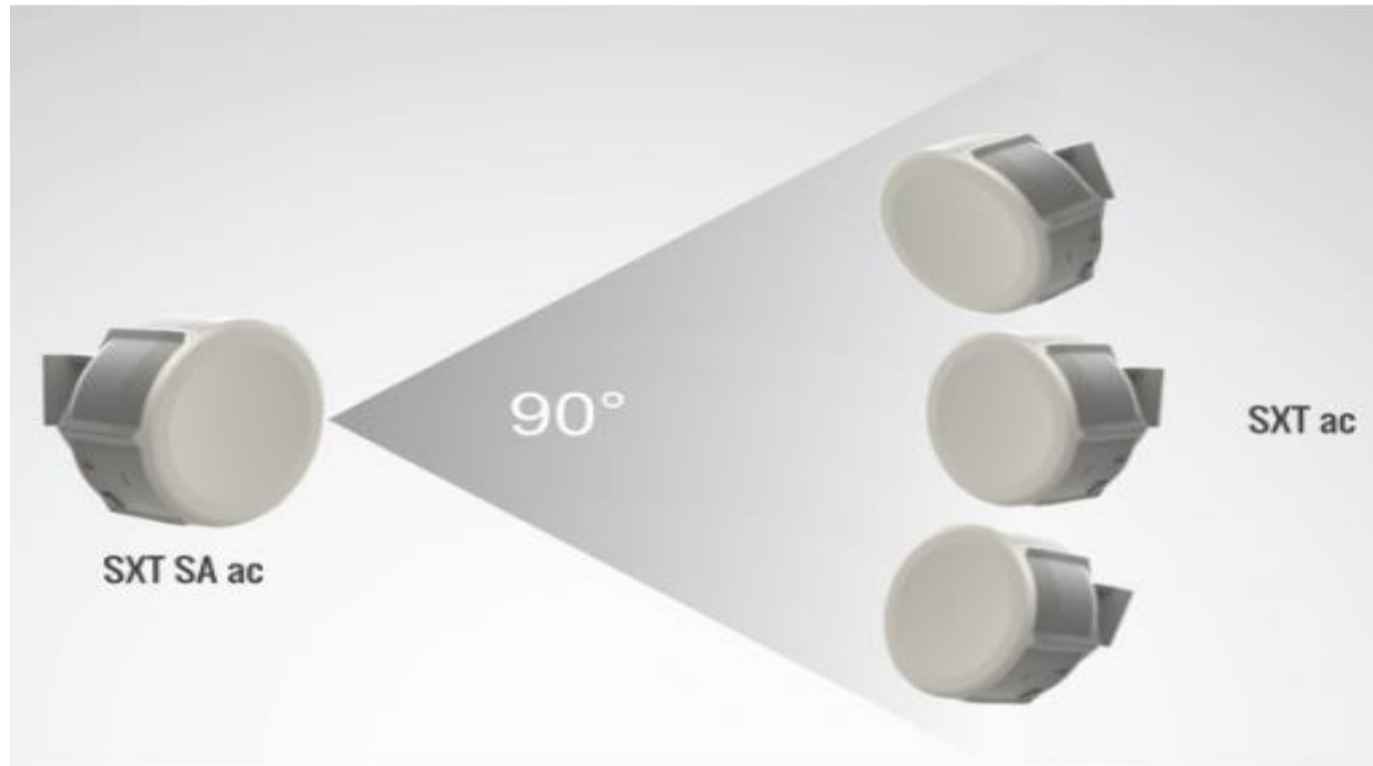




# Wi-Fi Connectivity (with controller) diag.

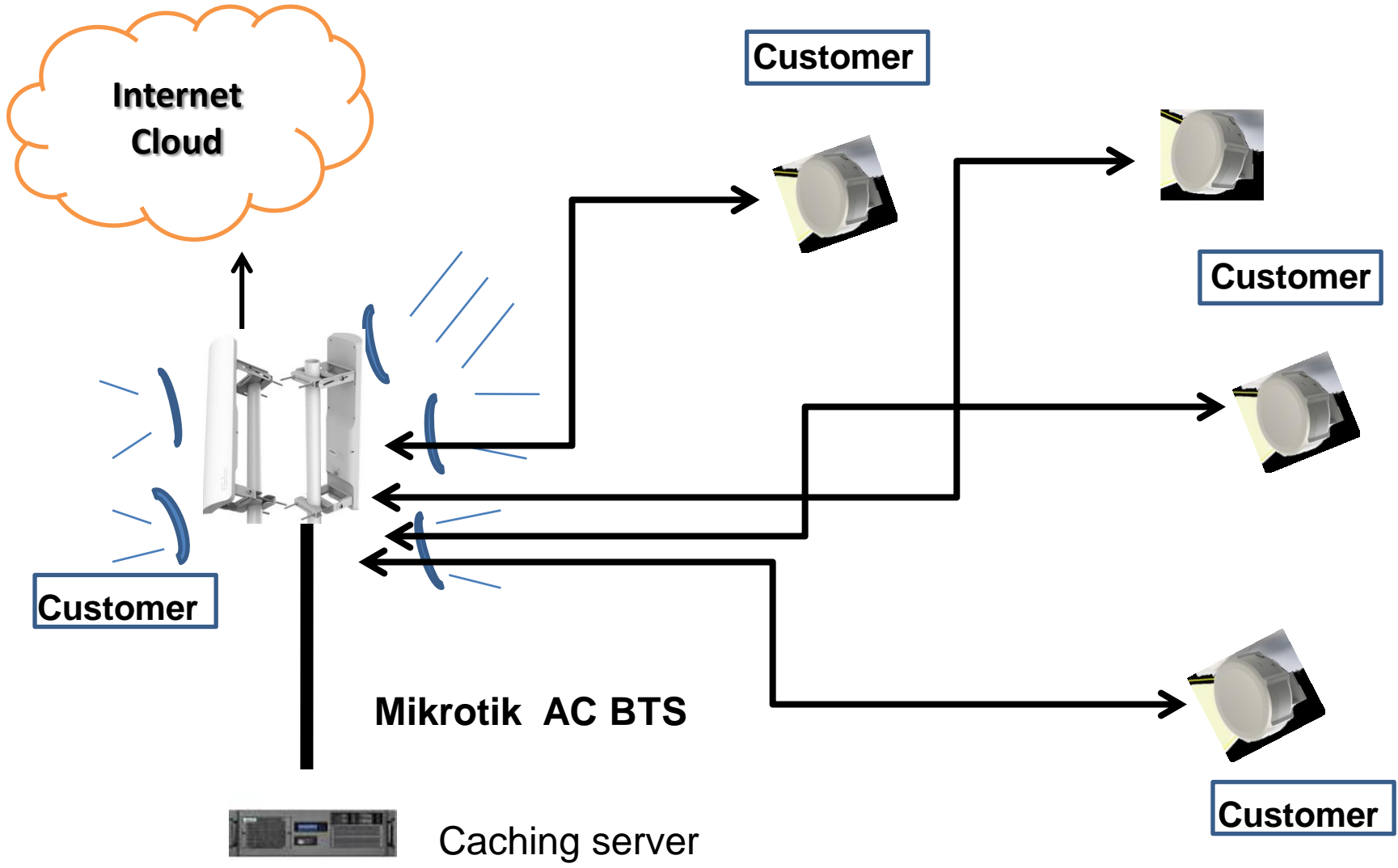


# MIKROTIK IN MULTIPOINT



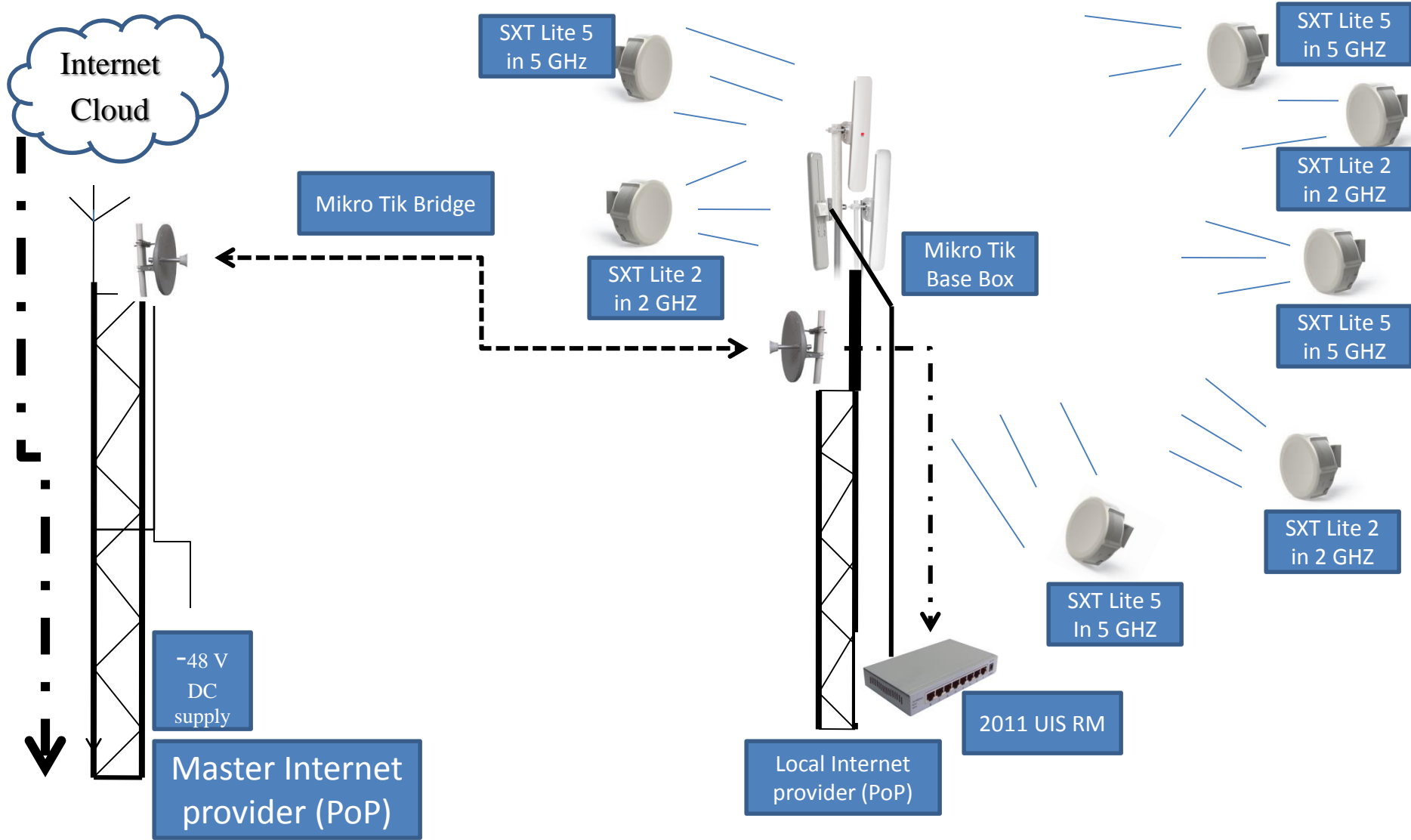


# Base Station with Sectorcoverage 10 Km with 240/360 clients



RAILWIRE Pop / Base Station

# Connectivity diagram:- Last mile with Local ISP setup



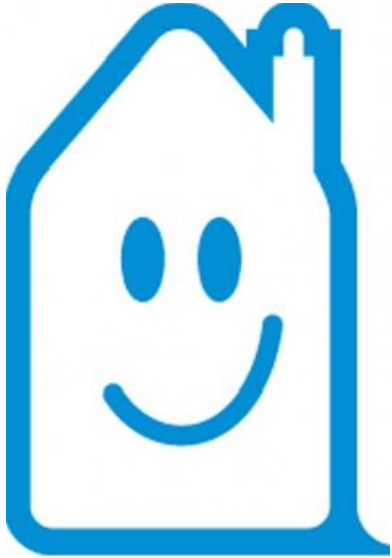
THANK YOU



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# MikroTik



FTTH



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**

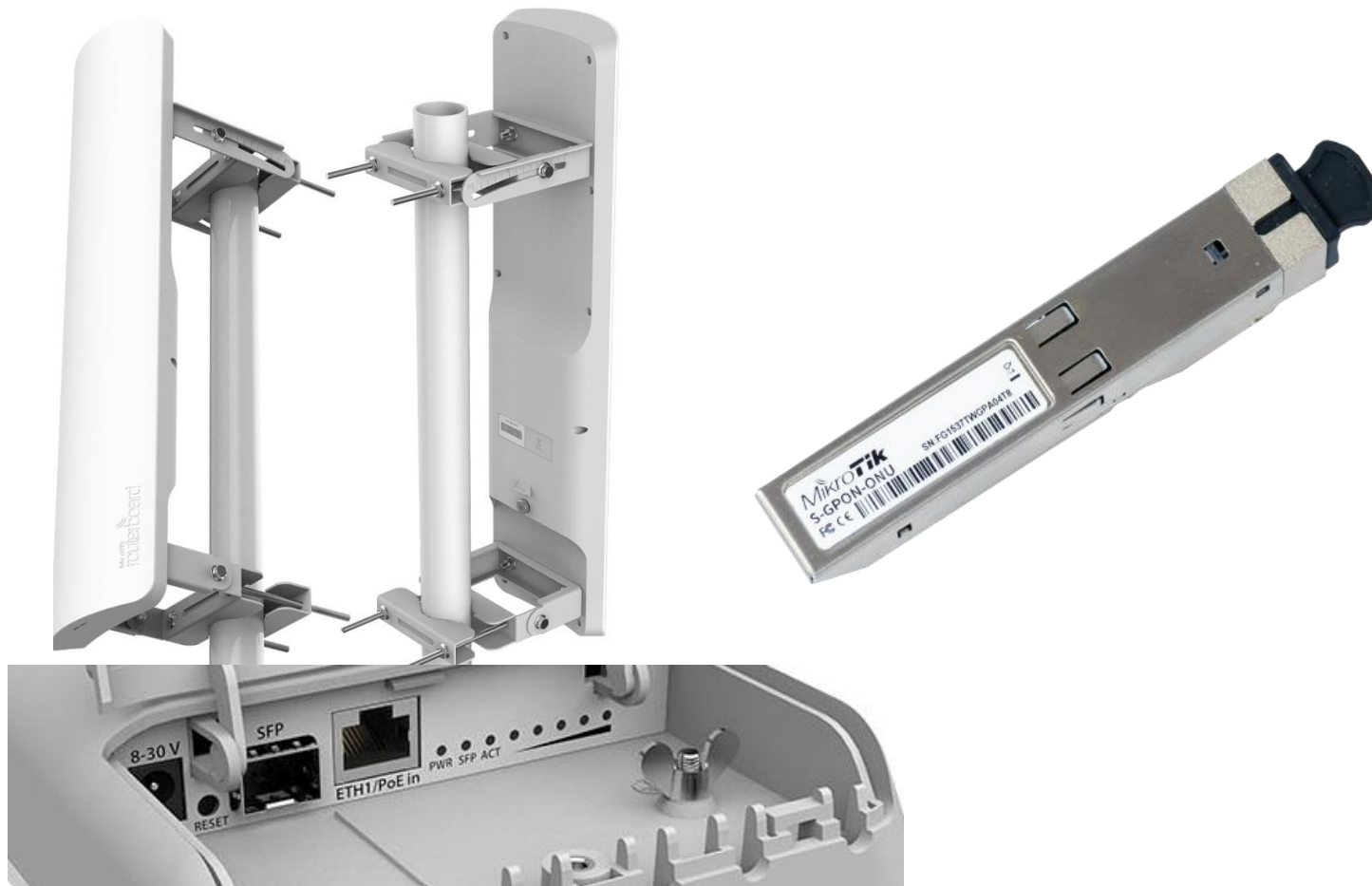


# Mikrotik in GPON

L3 Based ONU compatible with all OLT



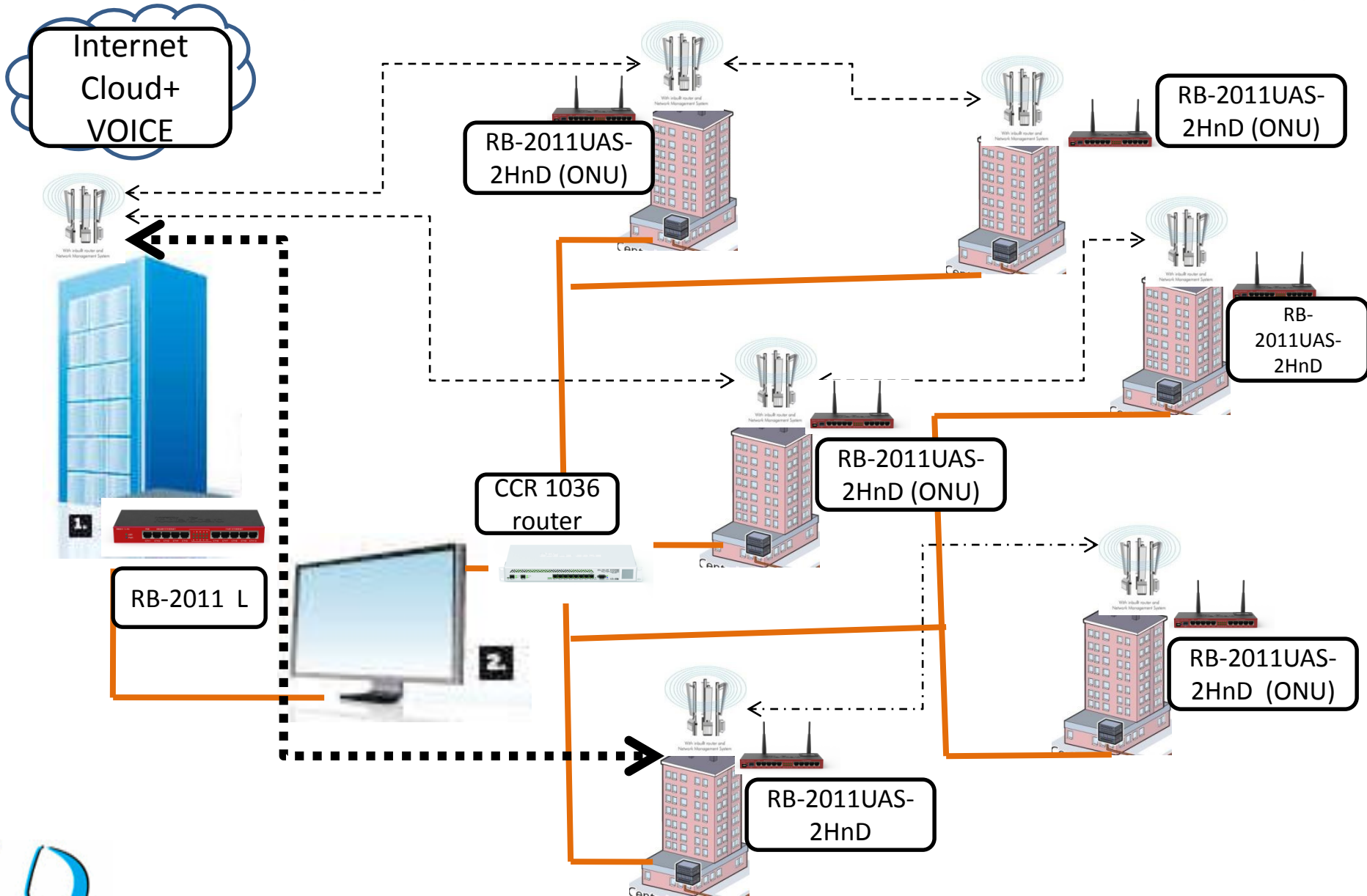
# Mikrotik GPON ONU with Sector



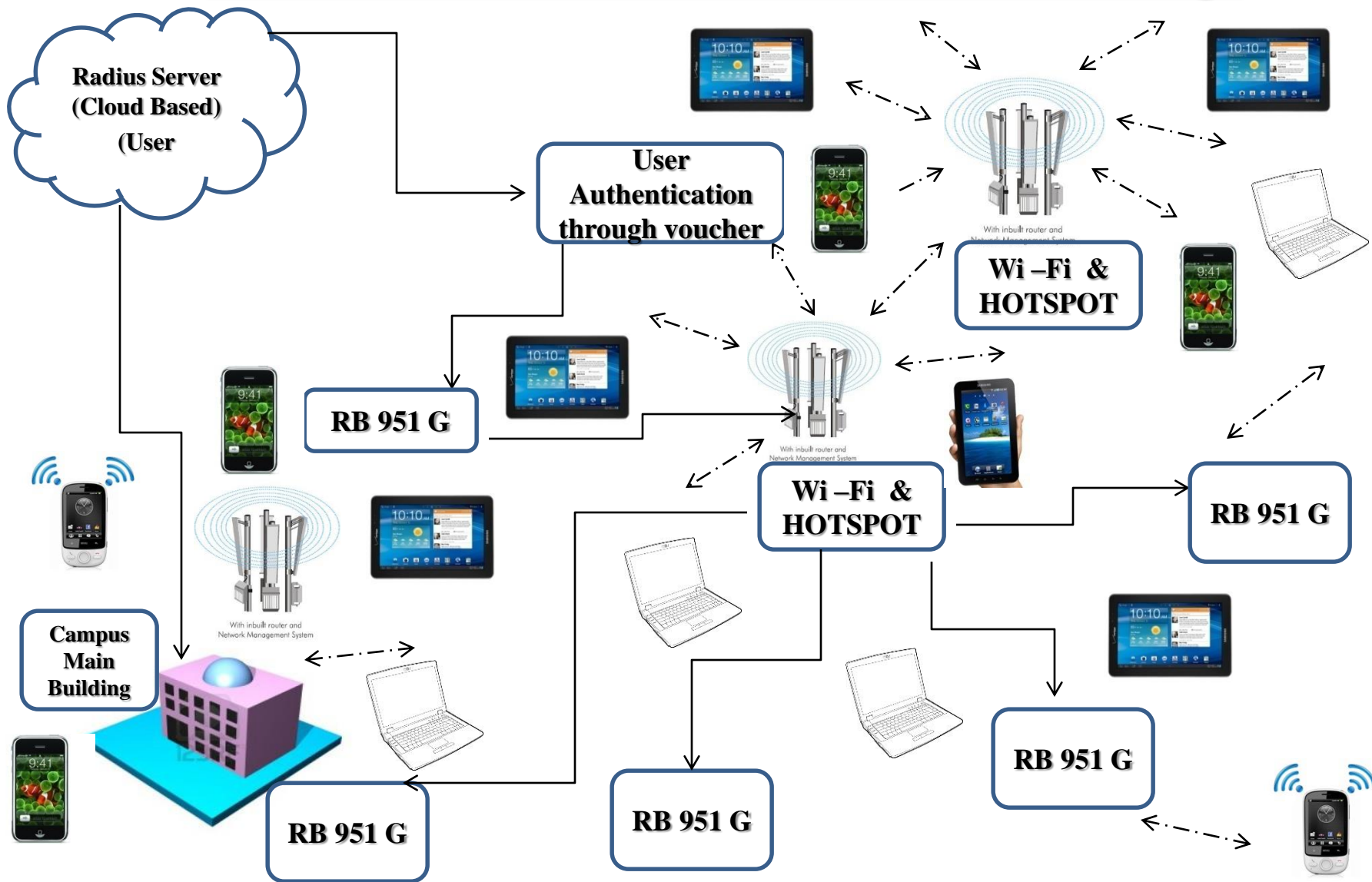




# Community Broadband distribution - FTTH Connectivity



# Use of MikroTik in FTTH - diag.



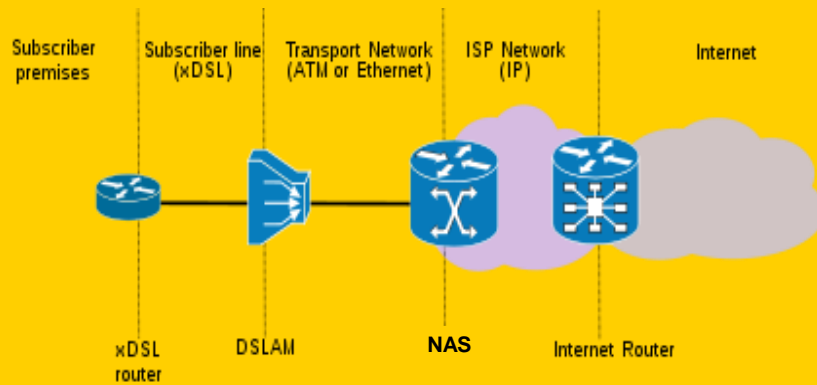
# Mikrotik NAS (Network Access Server) Configure

**□ What is NAS**

**□ Mikrotik NAS Setup with Hotspot**

**□ Mikrotik NAS Setup with PPPOE**

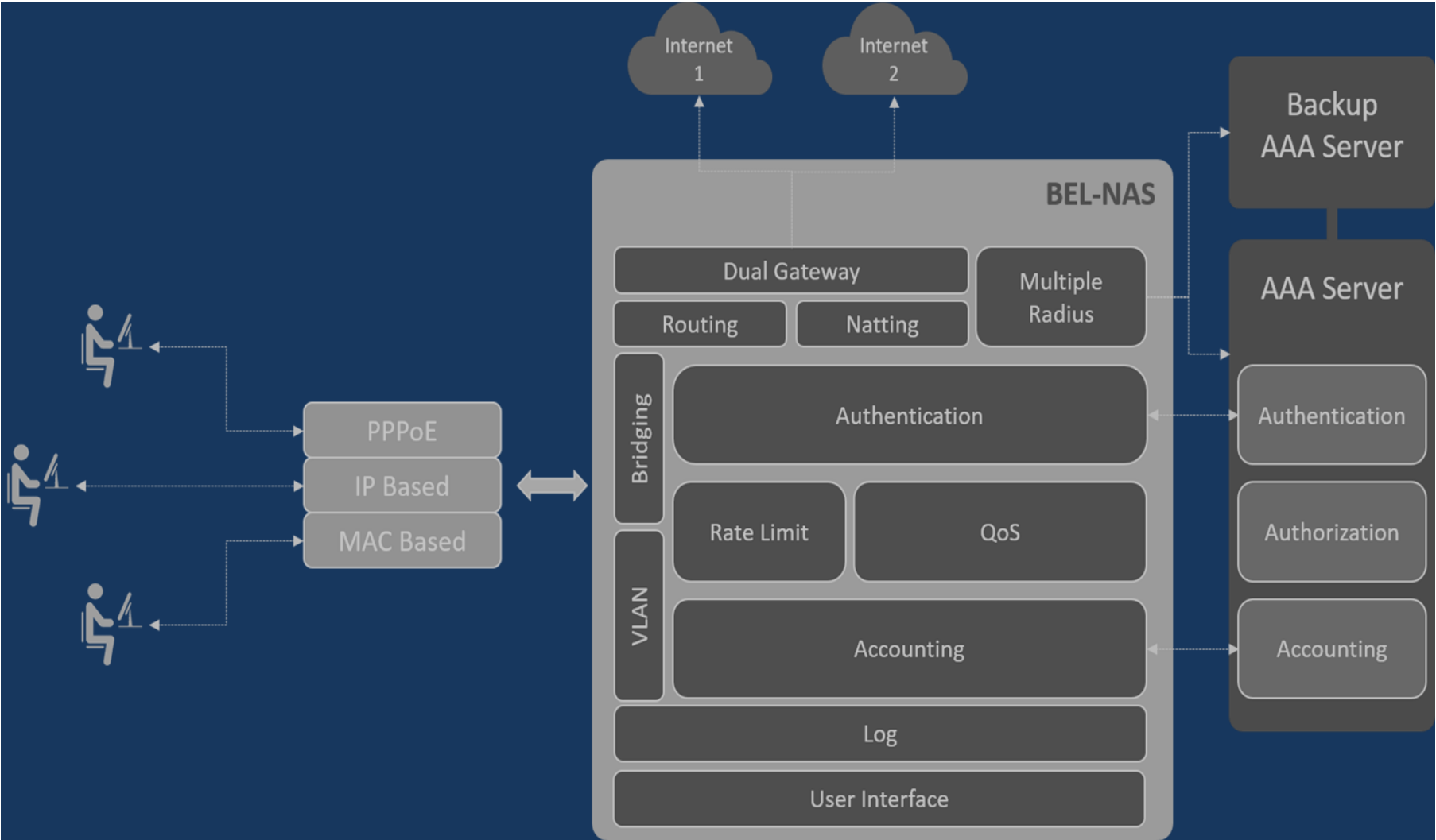
## What Is NAS?



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

The screenshot displays the RouterOS WinBox interface. On the left sidebar, the 'IP' menu item is circled in red. The main window shows the 'Address List' dialog box with a table of IP addresses. The 'WAN' entry is selected, and a configuration dialog for 'Address <192.168.88.2/24>' is open, showing the address, network, and interface fields. A 'Comment for Address <192.168.88.2/24>' dialog box is also open, with 'WAN' entered in the comment field.

Address	Network	Interface
::: LAN		
192.168.1.1/24	192.168.1.0	ether3
::: WAN		
192.168.88.2/...	192.168.88.0	ether1

Address <192.168.88.2/24>

Address: 192.168.88.2/24  
Network: 192.168.88.0  
Interface: ether1

Comment for Address <192.168.88.2/24>

WAN

➤ Go to IP - Add IP For LAN & WAN

# Configuration LAN , WAN & RADIUS

The screenshot displays the RouterOS WinBox interface in Safe Mode. The left sidebar contains a navigation menu with the following items: 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 shows the 'Address List' dialog box with two entries:

Address	Network	Interface
192.168.1.1/24	192.168.1.0	ether3
::: WAN		
192.168.88.1/...	192.168.88.0	ether1

Below the table, it indicates '2 items (1 selected)'. The status 'enabled' is shown at the bottom of the dialog. A secondary dialog box titled 'Address <192.168.1.1/24>' is open, showing the configuration for the selected address:

- Address: 192.168.1.1/24
- Network: 192.168.1.0
- Interface: ether3

Buttons for OK, Cancel, Apply, Disable, Comment, Copy, and Remove are visible. A third dialog box titled 'Comment for Address <192.168.1.1/24>' is also open, with the text 'LAN' entered in the comment field. Buttons for OK and Cancel are visible.

# Configuration LAN , WAN & RADIUS

The screenshot displays the RouterOS WinBox interface. On the left is a vertical menu with various configuration categories. The main area shows a configuration window titled "Address List".

**RouterOS WinBox Menu:**

- 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.rtf
- Manual
- Exit

**Address List Window:**

The "Address List" window contains a table with the following data:

Address	Network	Interface
::: LAN		
192.168.1.1/24	192.168.1.0	ether3
::: WAN		
192.168.88.2/24	192.168.88.0	ether1

At the bottom of the window, it indicates "2 items (1 selected)".

# Configuration LAN , WAN & RADIUS

The screenshot displays the RouterOS WinBox interface. On the left is a vertical menu with various configuration options: 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.rf, Manual, and Exit. The main area shows the 'DNS Settings' dialog box. The 'Servers' field contains two entries: '8.8.8.8' and '4.2.2.2', both of which are circled in red. Other settings include 'Dynamic Servers' (empty), 'Allow Remote Requests' (checked), 'Max UDP Packet Size' (4096), 'Query Server Timeout' (2.000 s), 'Query Total Timeout' (10.000 s), 'Cache Size' (2048 KiB), 'Cache Max TTL' (7d 00:00:00), and 'Cache Used' (9). Buttons for 'OK', 'Cancel', 'Apply', 'Static', and 'Cache' are visible on the right side of the dialog.

➤ Go to IP – DNS – Add DNS Server

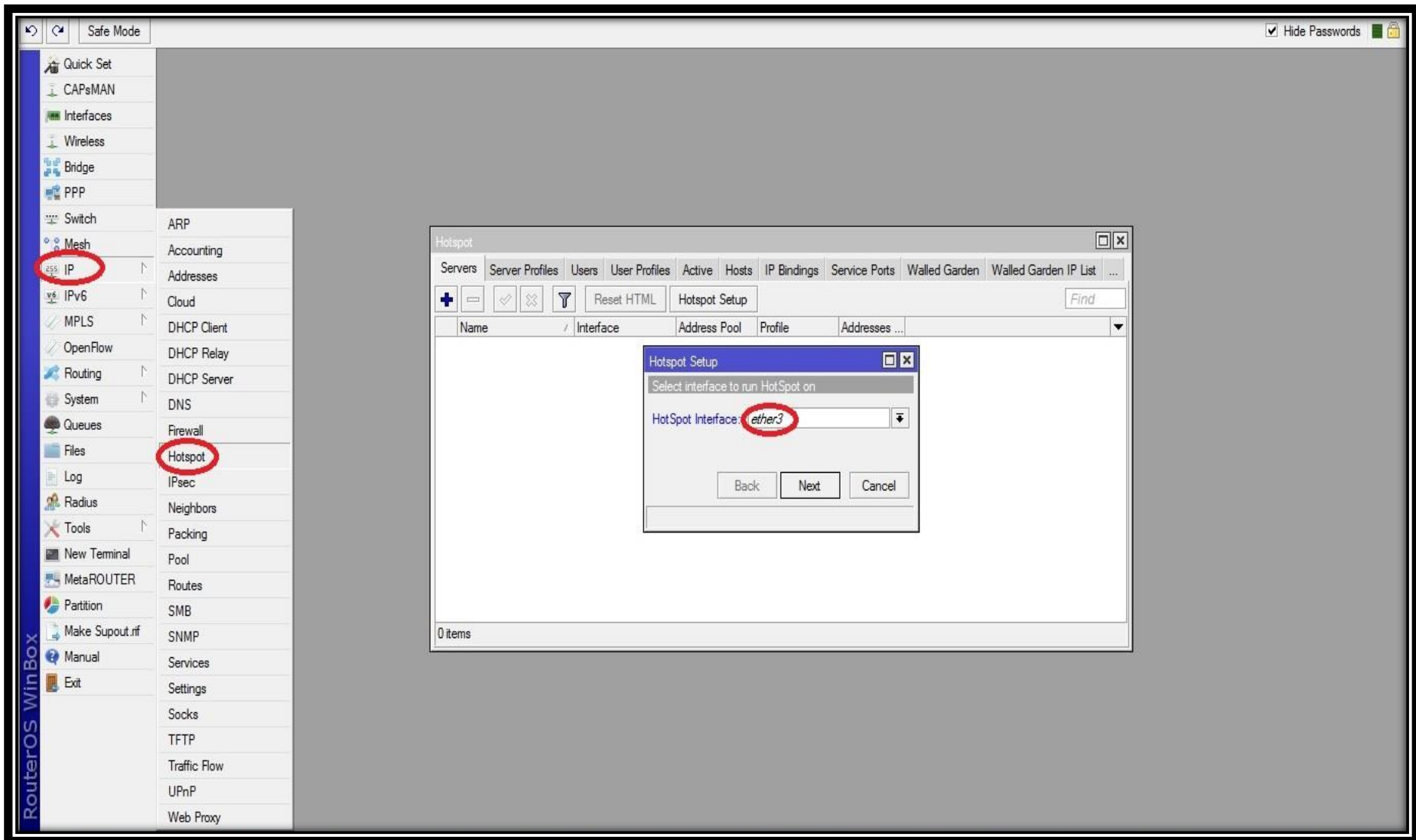
# Configuration LAN , WAN & RADIUS

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

	Routes	NextHops	Rules	VRF
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AS	Dst. 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)'. 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

The screenshot displays the Mikrotik WinBox interface. On the left is a vertical sidebar with a 'RouterOS WinBox' label and a list of menu items 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.rf, Manual, and Exit. The main window shows the 'Hotspot' configuration page with tabs for Servers, Server Profiles, Users, User Profiles, Active, Hosts, IP Bindings, Service Ports, Walled Garden, and Walled Garden IP List. A 'Hotspot Setup' dialog box is open, titled 'Hotspot Setup', with a subtitle 'Set HotSpot address for interface'. It contains a text field for 'Local Address of Network' with the value '192.168.1.1/24'. Below this field, the checkbox 'Masquerade Network' is checked and circled in red. At the bottom of the dialog are 'Back', 'Next', and 'Cancel' buttons. The background window shows a table with columns for Name, Interface, Address Pool, Profile, and Addresses, currently displaying 0 items.

➤ **Click Masquerade Network – Click Next**

# Configuration LAN , WAN & RADIUS

The screenshot displays the Mikrotik RouterOS WinBox interface. On the left is a vertical navigation menu with the following items: 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.rf, Manual, and Exit. The main window shows the 'Hotspot' configuration page with tabs for Servers, Server Profiles, Users, User Profiles, Active, Hosts, IP Bindings, Service Ports, Walled Garden, and Walled Garden IP List. A 'Hotspot Setup' dialog box is open, prompting the user to 'Set pool for HotSpot addresses' with a dropdown menu showing 'Address Pool of Network: 192.168.1.2-192.168.1.254'. The dialog includes 'Back', 'Next', and 'Cancel' buttons. The status bar at the bottom of the main window indicates '0 items'.



# Configuration LAN , WAN & RADIUS

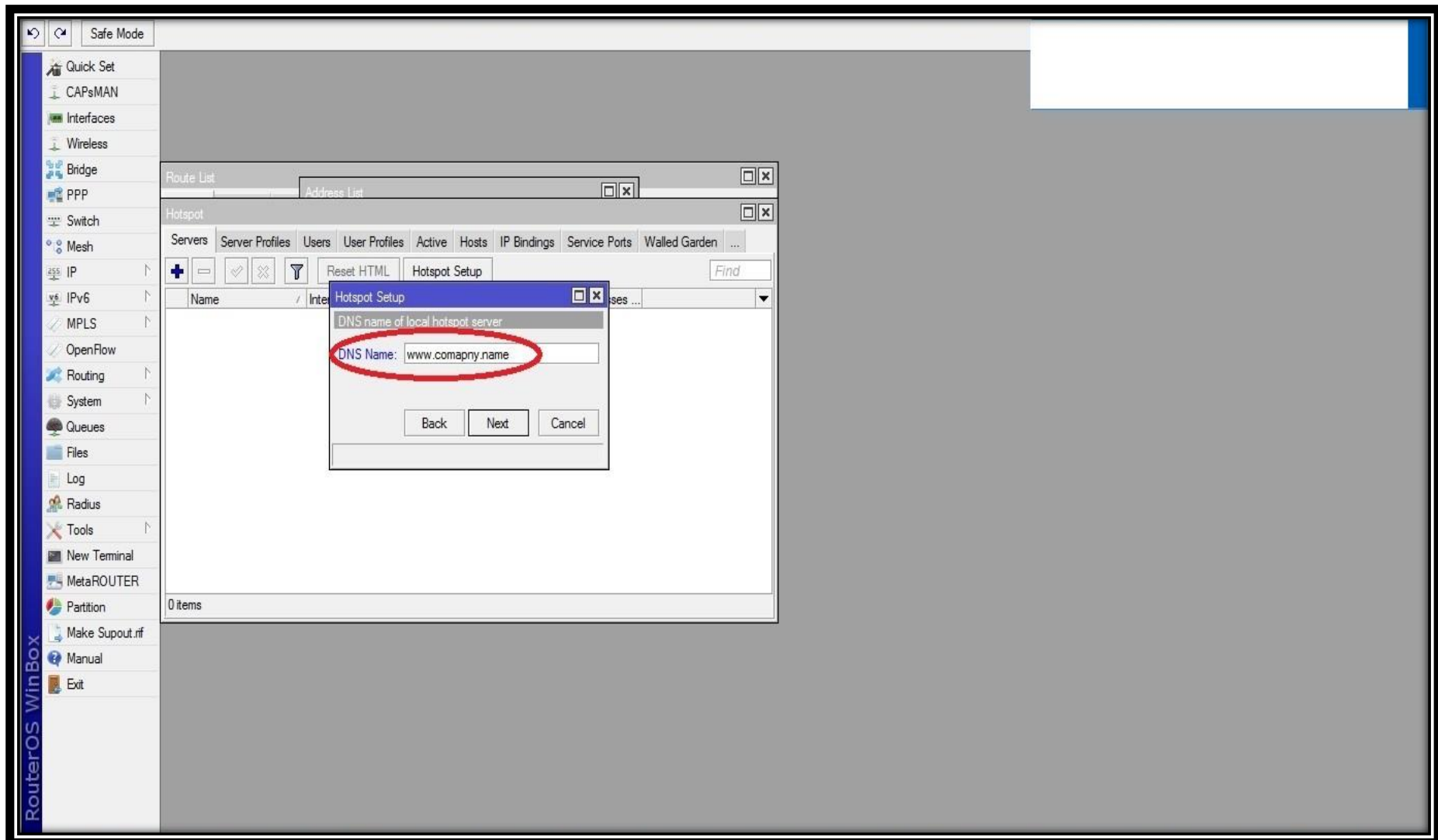
The image shows a screenshot of the Mikrotik WinBox configuration interface. The main window is titled "Hotspot" and contains several tabs: Servers, Server Profiles, Users, User Profiles, Active, Hosts, IP Bindings, Service Ports, and Walled Garden. A "Hotspot Setup" dialog box is open, displaying a "Select SMTP server" window. This dialog has a text input field for "IP Address of SMTP Server" with the value "0.0.0.0" entered. Below the input field are three buttons: "Back", "Next", and "Cancel". The background interface shows a sidebar with various configuration categories like 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.rf, Manual, and Exit. The top of the window has a "Safe Mode" button and a "Hide Passwords" checkbox.

# Configuration LAN , WAN & RADIUS

The screenshot displays the Mikrotik WinBox configuration interface. On the left is a vertical sidebar with a blue background labeled "RouterOS WinBox" and a list of menu items: 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.rf, Manual, and Exit. The main window is titled "Hotspot" and contains several tabs: Servers, Server Profiles, Users, User Profiles, Active, Hosts, IP Bindings, Service Ports, and Walled Garden. The "Hotspot Setup" tab is active, showing a table with columns for Name and Interface. A "Hotspot Setup" dialog box is overlaid on the table, titled "Setup DNS configuration". It contains two input fields for "DNS Servers" with the values "8.8.8.8" and "4.2.2.2". Below the fields are three buttons: "Back", "Next", and "Cancel". The top of the WinBox window shows "Safe Mode" and a "Hide Passwords" checkbox. The bottom of the main window shows "0 items".

➤ **Click Next & Check again DNS**

# Configuration LAN , WAN & RADIUS



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

# Configuration LAN , WAN & RADIUS

The image shows the Mikrotik WinBox configuration interface. On the left is a vertical sidebar labeled "RouterOS WinBox" containing various system tools like "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.rf", "Manual", and "Exit". The main window displays the "Hotspot" configuration page, with tabs for "Servers", "Server Profiles", "Users", "User Profiles", "Active", "Hosts", "IP Bindings", "Service Ports", and "Walled Garden". A "Hotspot Setup" dialog box is open in the foreground, titled "Create local HotSpot user". It contains two input fields: "Name of Local HotSpot User:" with the text "admin" entered, and "Password for the User:". Below the fields are three buttons: "Back", "Next", and "Cancel". The background configuration page shows a table with columns for "Name" and "Inte..." and a "0 items" status at the bottom.

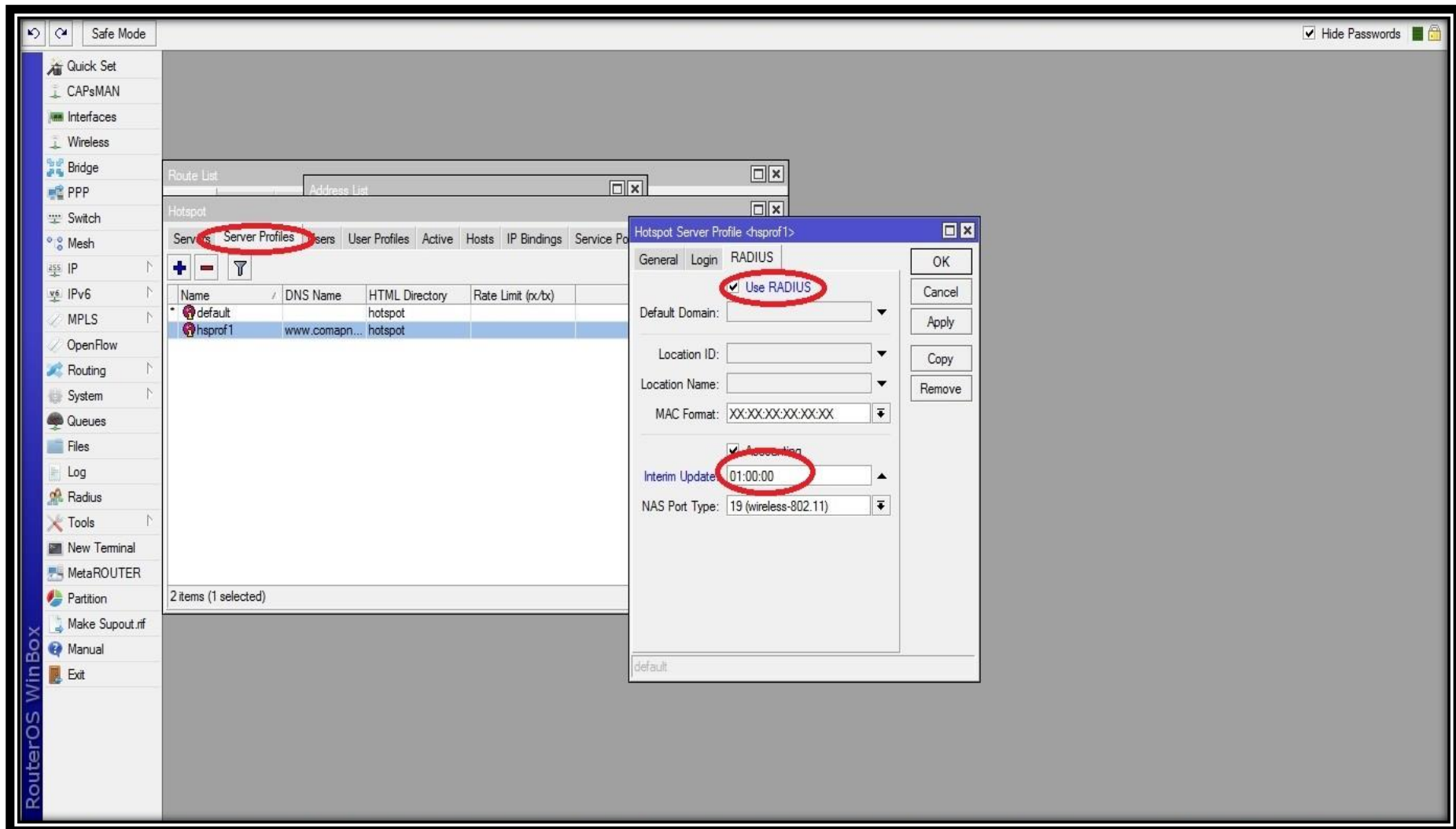
# Configuration Hotspot

The screenshot displays the RouterOS WinBox interface. On the left is a vertical menu with categories like 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.rf, Manual, and Exit. The main window shows the 'Hotspot' configuration page with tabs for Servers, Server Profiles, Users, User Profiles, Active, Hosts, IP Bindings, Service Ports, and Walled Garden. A table lists the configured hotspot:

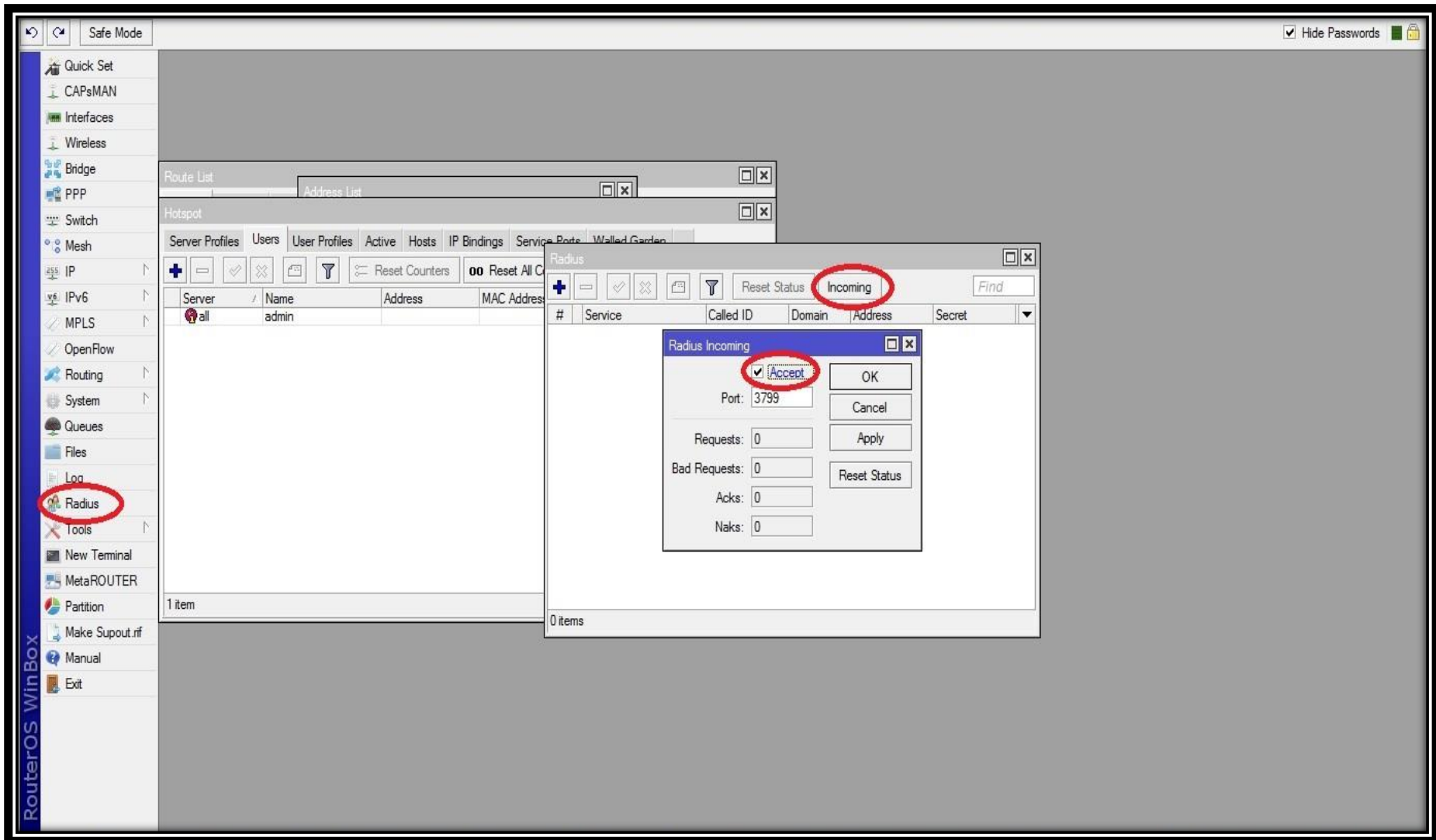
Name	Interface	Address Pool	Profile	Addresses ...
hotspot1	ether3	hs-pool-3	hsprof1	2

A 'Hotspot Setup' dialog box is overlaid on the table, displaying the message 'Setup has completed successfully' and an 'OK' button. The dialog box also has a title bar with 'Hotspot Setup' and a close button.

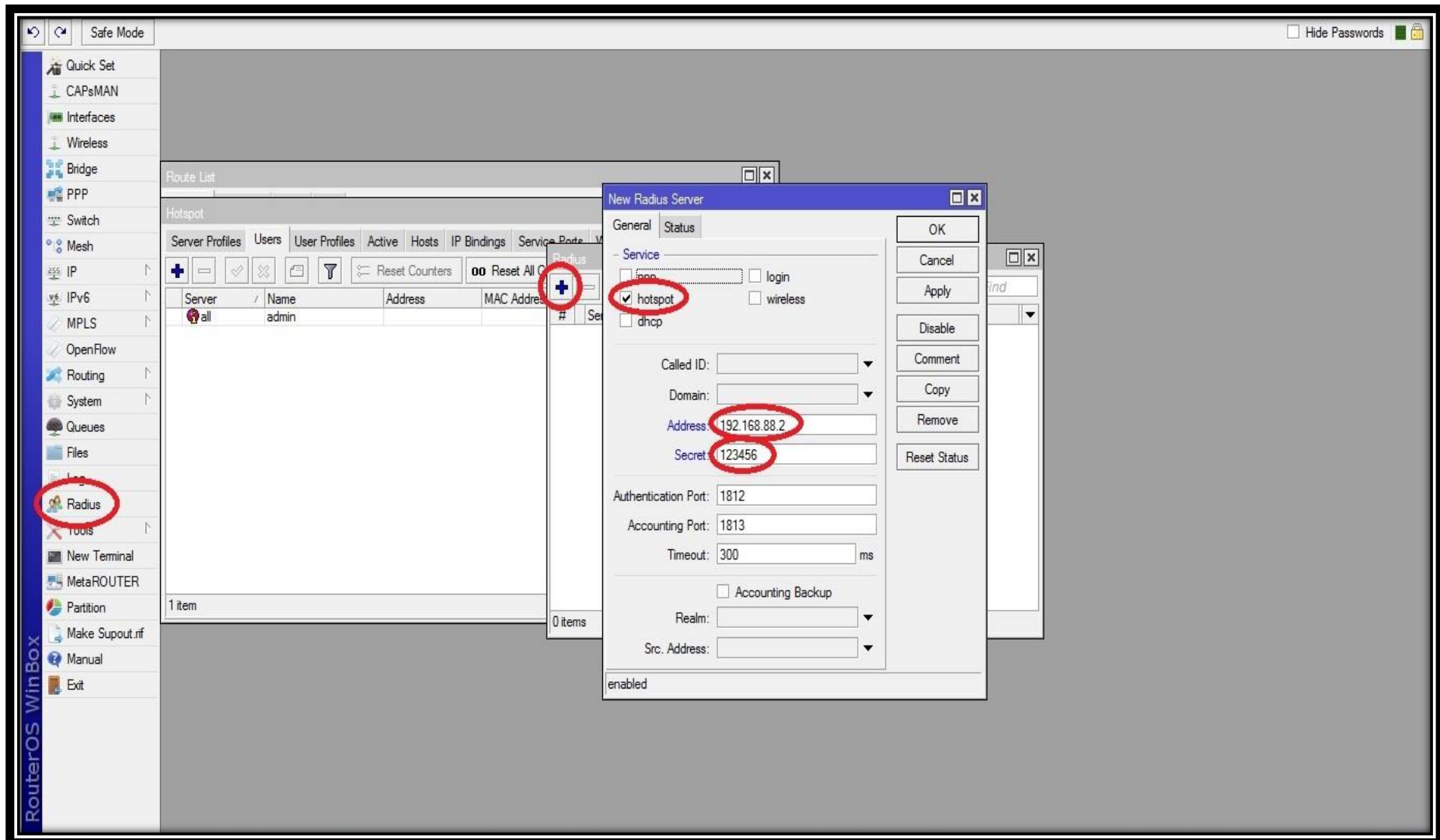




➤ **IP – Hotspot – Server Profile – Double Click on Hotspot1  
- Click Use Radius.**



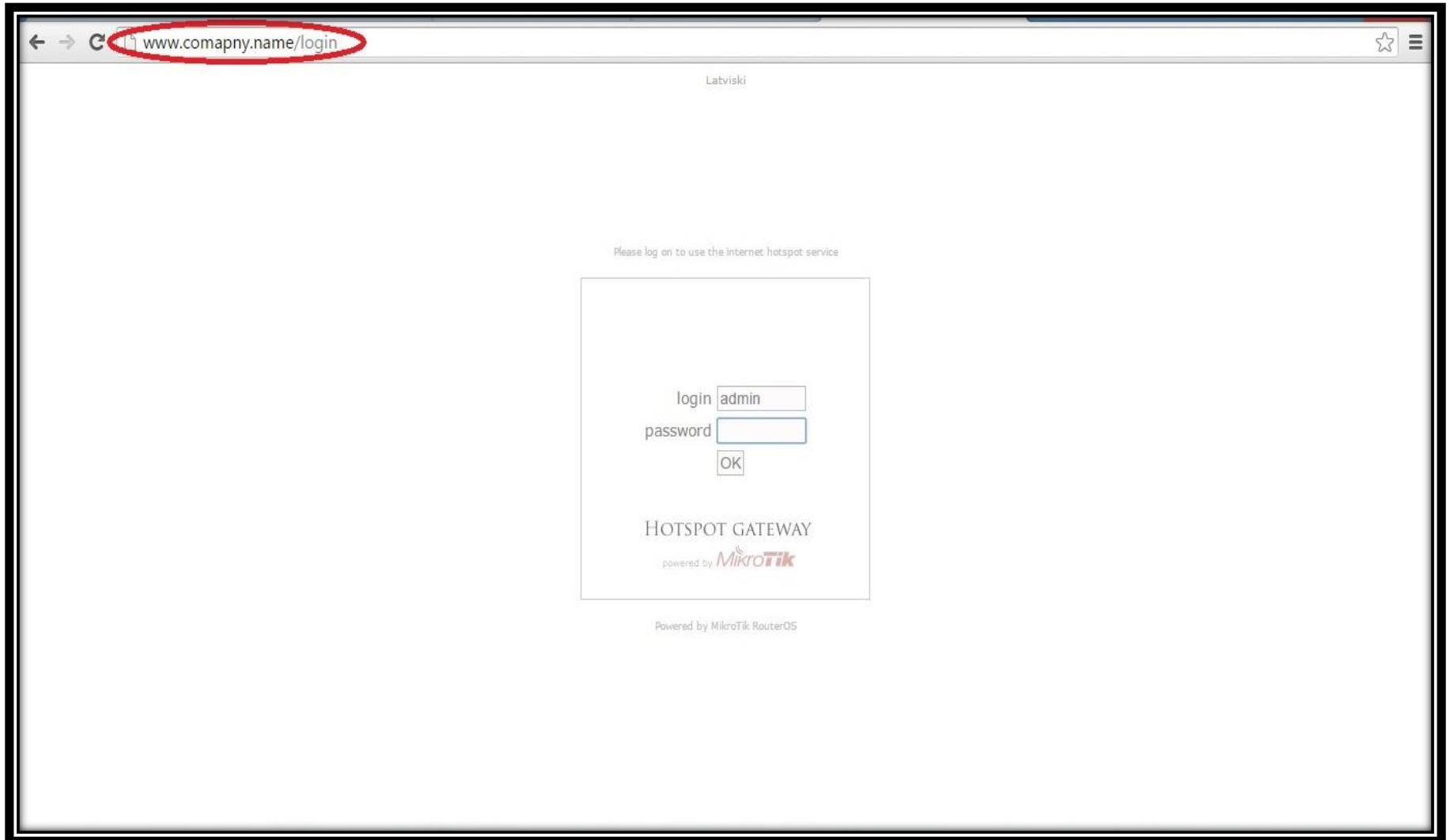
➤ **Click Radius – Click Incoming – Click Accept**



➤ 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



➤ **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

The screenshot displays the RouterOS WinBox interface. On the left sidebar, the 'IP' menu item is circled in red. The main window shows the 'Address List' dialog with a table of IP addresses. The 'WAN' entry is selected, and a configuration dialog is open for it. The configuration dialog shows the address '192.168.88.2/24', network '192.168.88.0', and interface 'ether1'. A 'Comment for Address <192.168.88.2/24>' dialog is also open, with 'WAN' entered in the comment field.

Address	Network	Interface
::: LAN		
192.168.1.1/24	192.168.1.0	ether3
::: WAN		
192.168.88.2/...	192.168.88.0	ether1

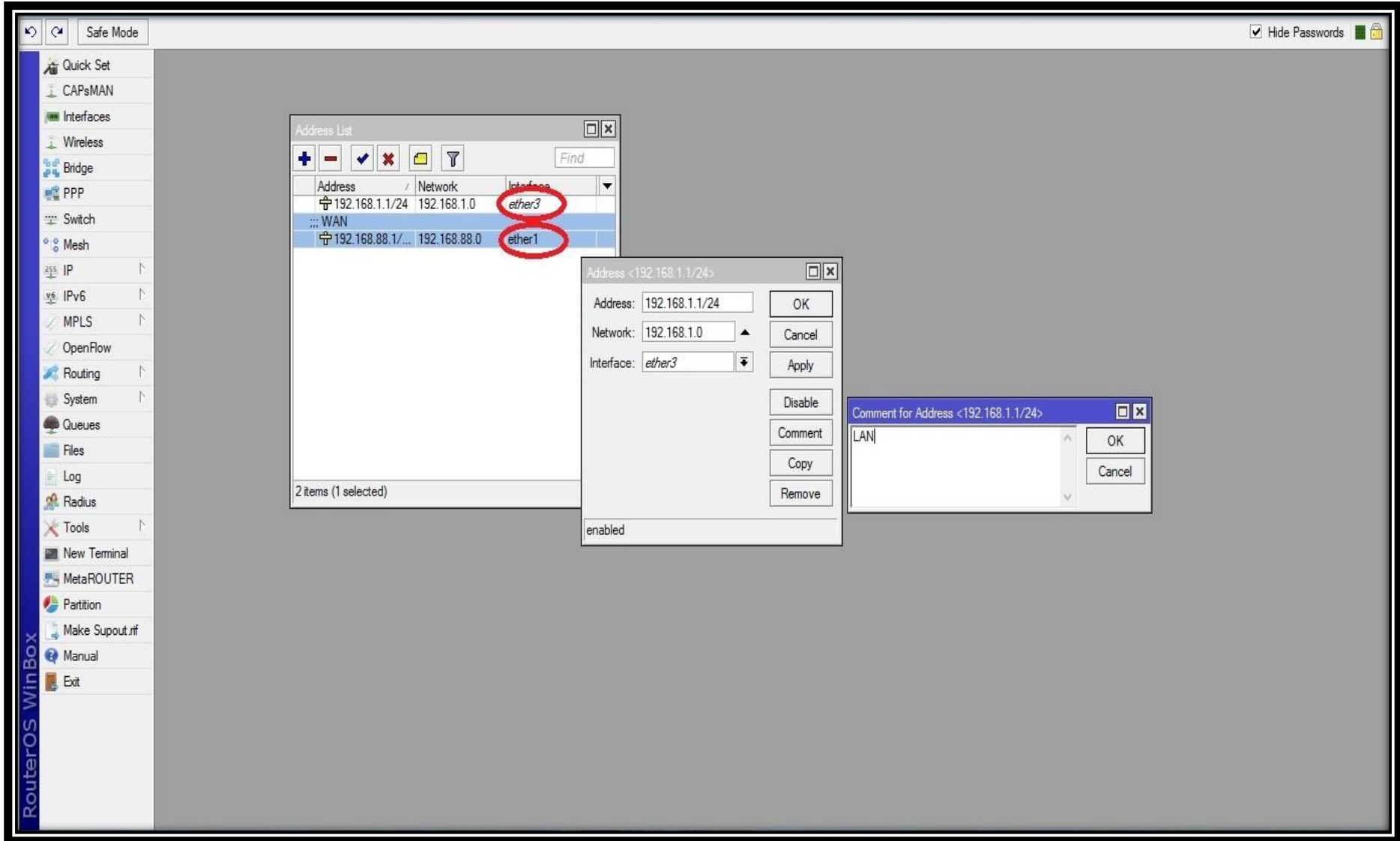
Address <192.168.88.2/24>

Address: 192.168.88.2/24  
Network: 192.168.88.0  
Interface: ether1

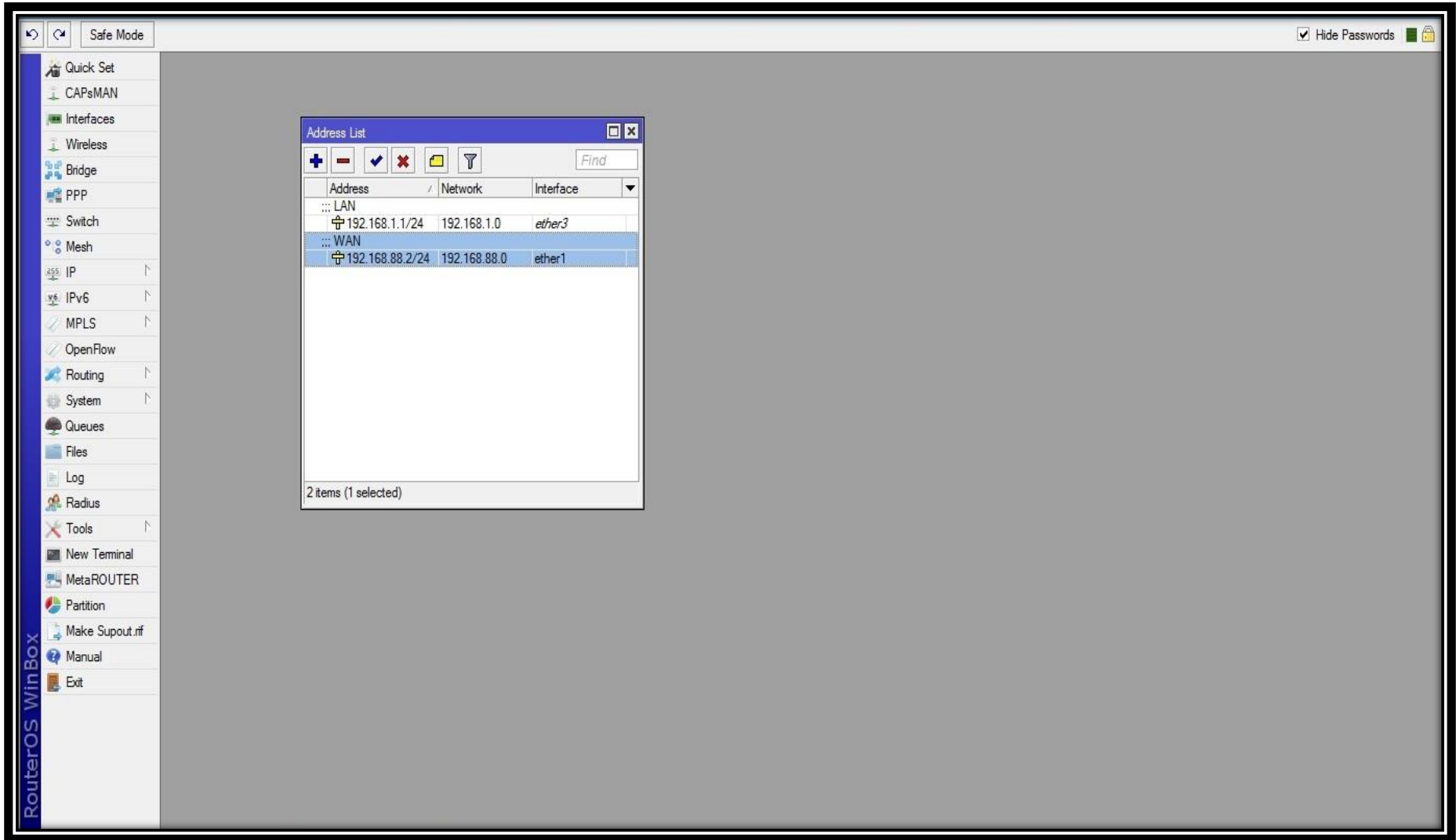
Comment for Address <192.168.88.2/24>

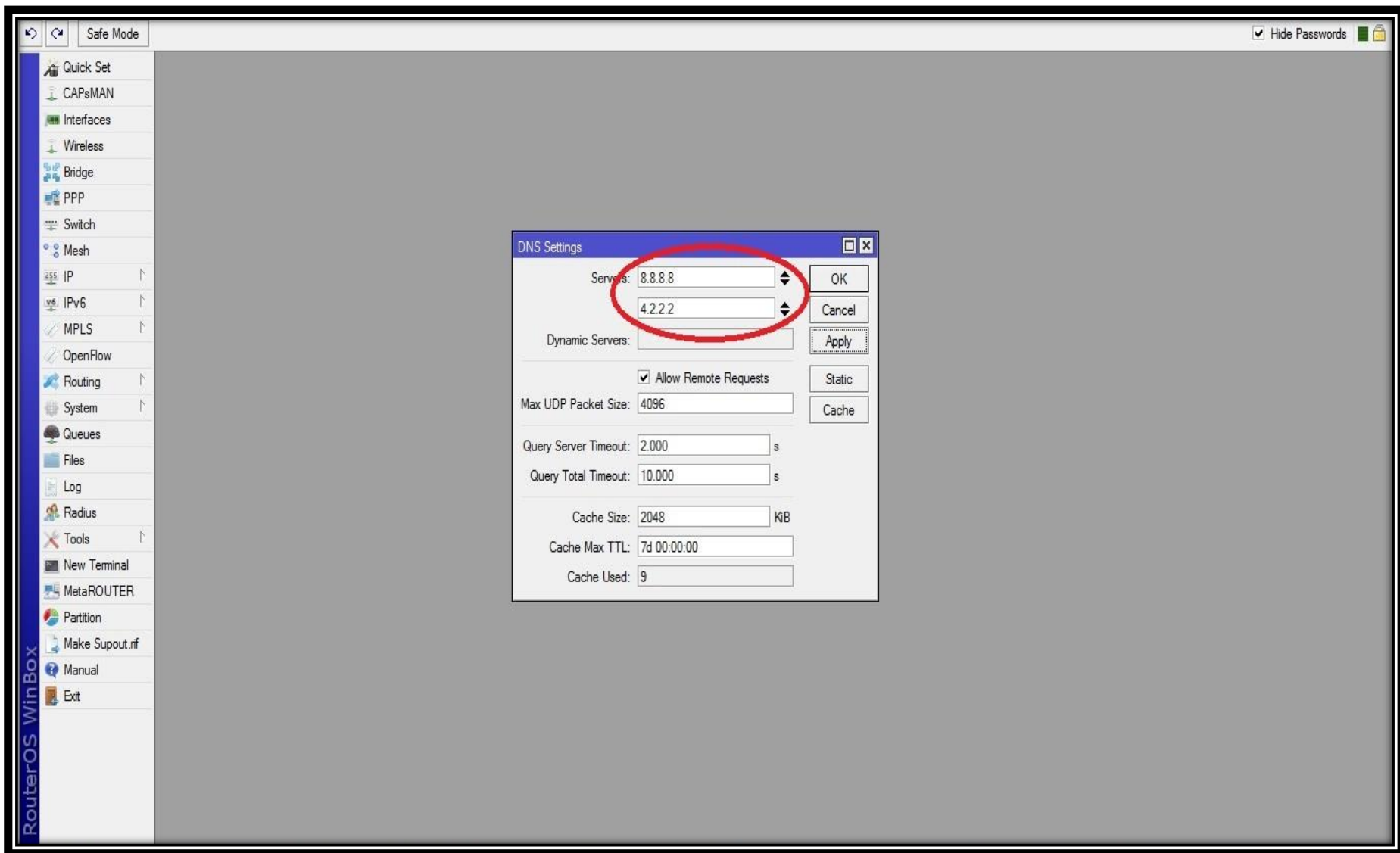
WAN

➤ Go to IP - Add IP For LAN & WAN









➤ Go to IP – DNS – Add DNS Server

The screenshot displays the RouterOS WinBox interface. On the left sidebar, the navigation menu is expanded to 'IP' and 'Routes'. The 'Routes' option is highlighted. The main window shows the 'Route List' table with the following data:

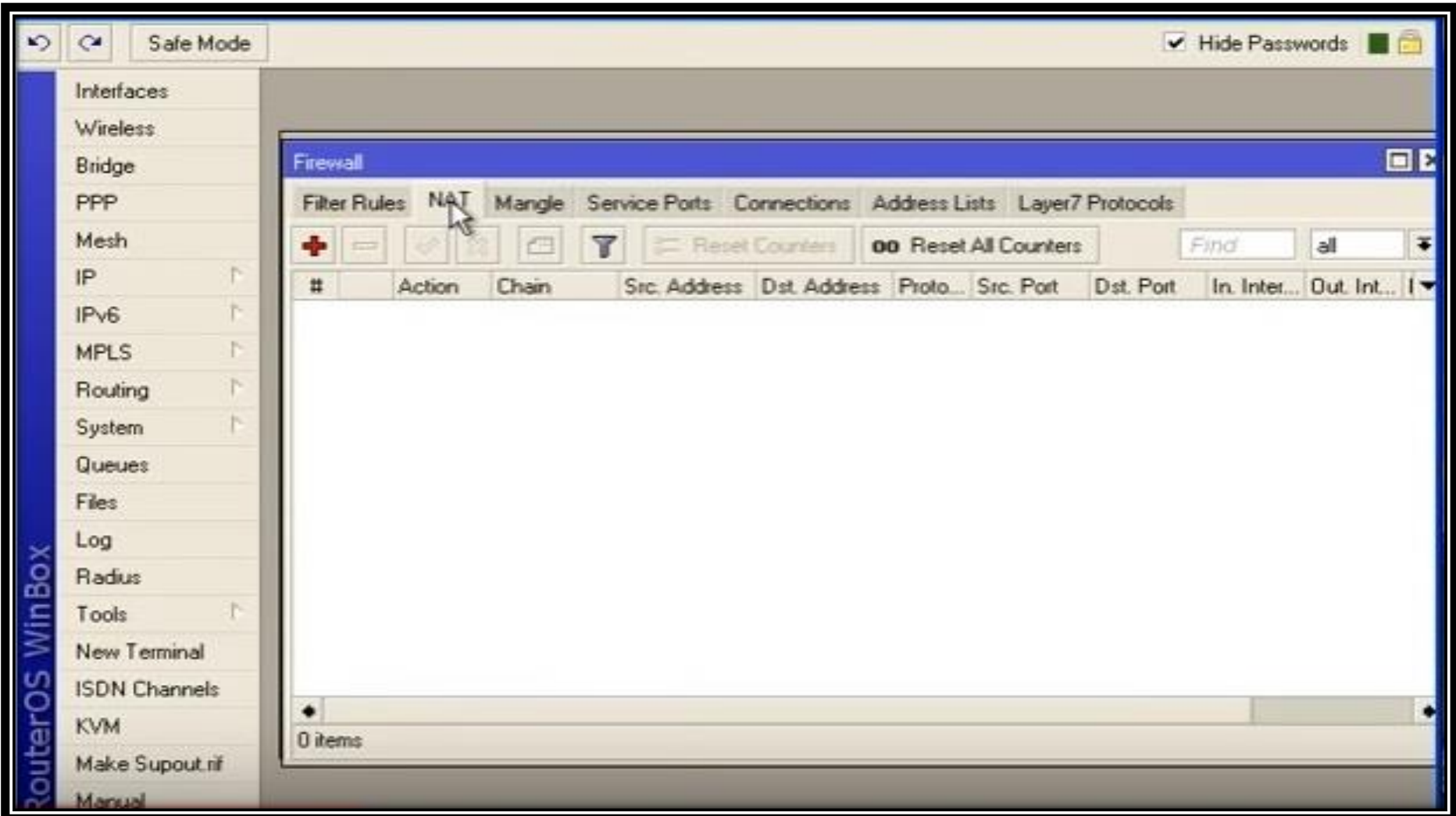
	Routes	NextHops	Rules	VRF
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AS	0.0.0.0/0	192.168.88.1	reachable	ether1
DC	192.168.1.0/24	ether3	unreachable	
DAC	192.168.88.0/...	ether1	reachable	

The 'Route <0.0.0.0/0>' configuration window is open, showing the following settings:

- General tab selected
- Dst. Address: 0.0.0.0/0
- Gateway: 192.168.88.1 (dropdown menu)
- Check Gateway: (empty)
- Type: unicast
- Distance: 1
- Scope: 30
- Target Scope: 10
- Routing Mark: (empty)
- Pref. Source: (empty)

At the bottom of the configuration window, the status is shown as 'enabled', 'active', and 'static'.

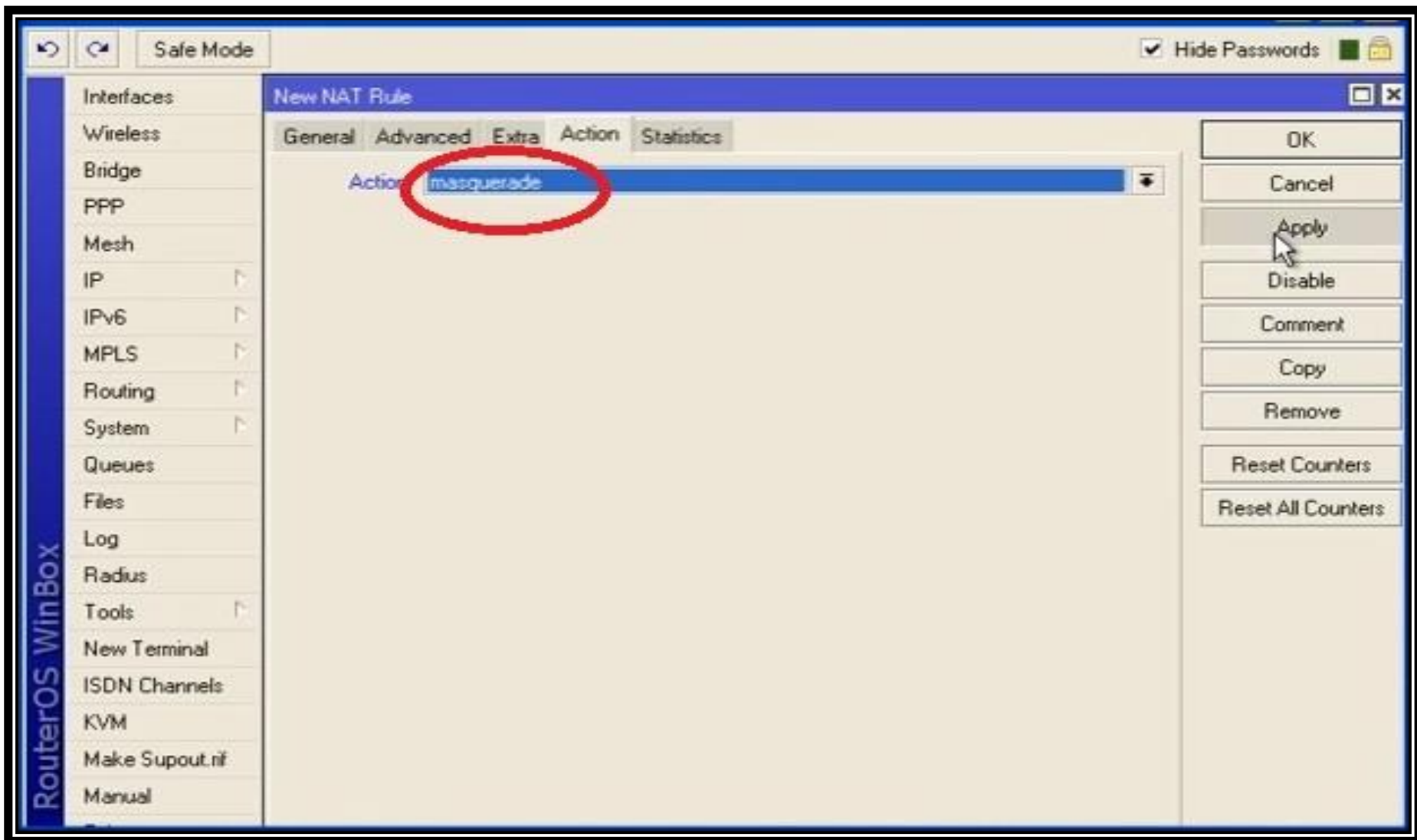
➤ **Go to IP – Routes – Add Gateway**



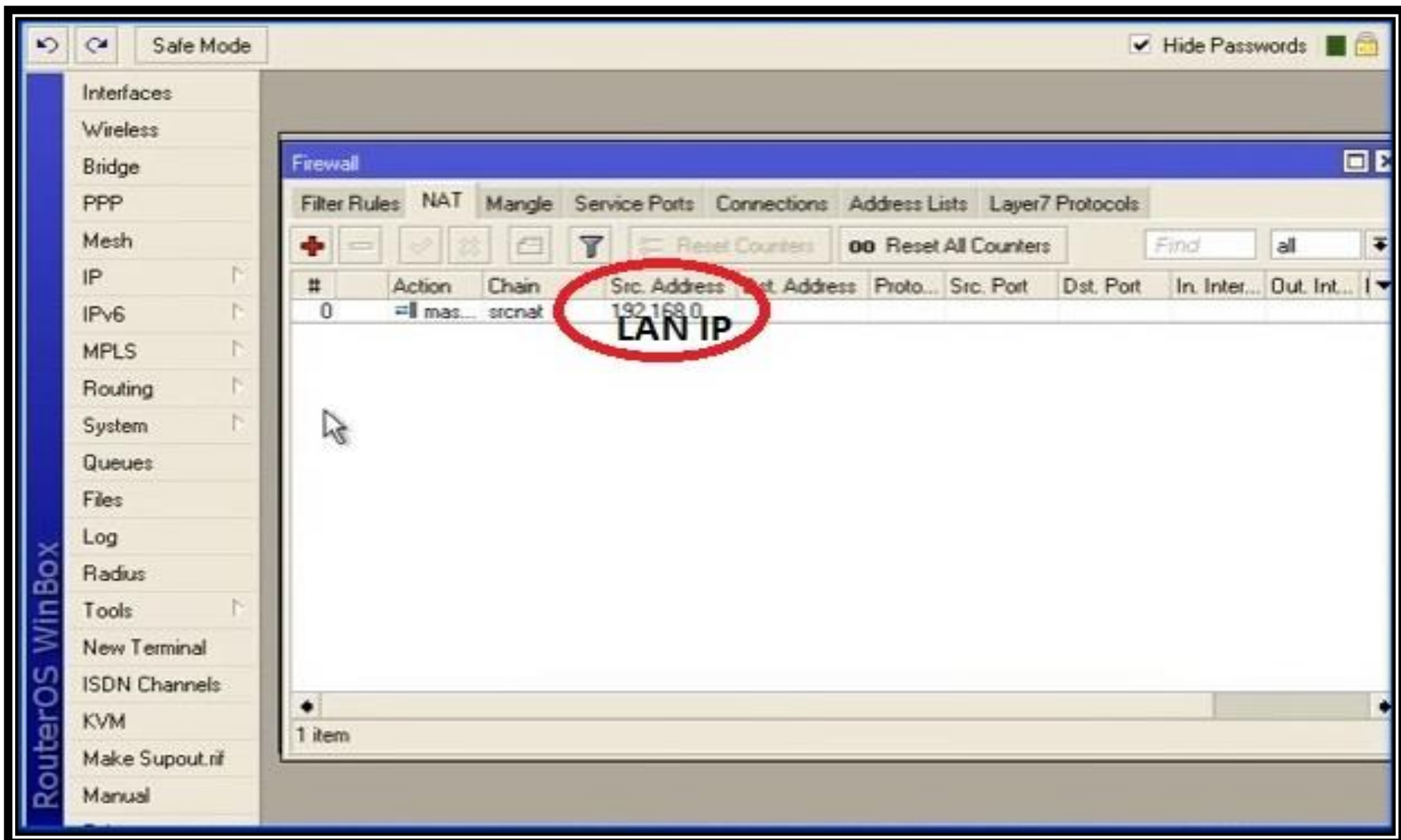
➤ Go to IP – Firewall – NAT



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

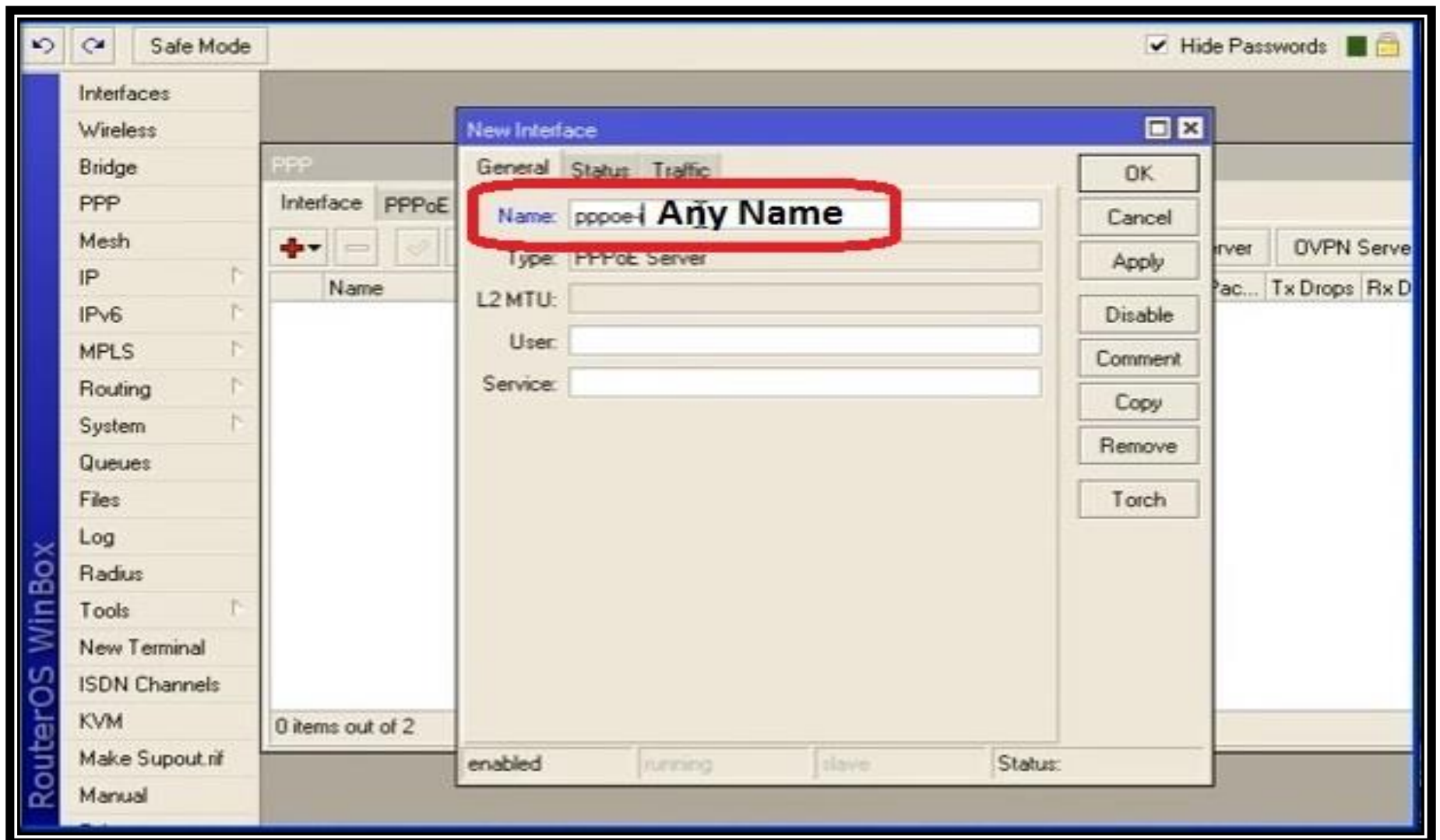


➤ Go to Action – Select Masquerade – Apply & Ok



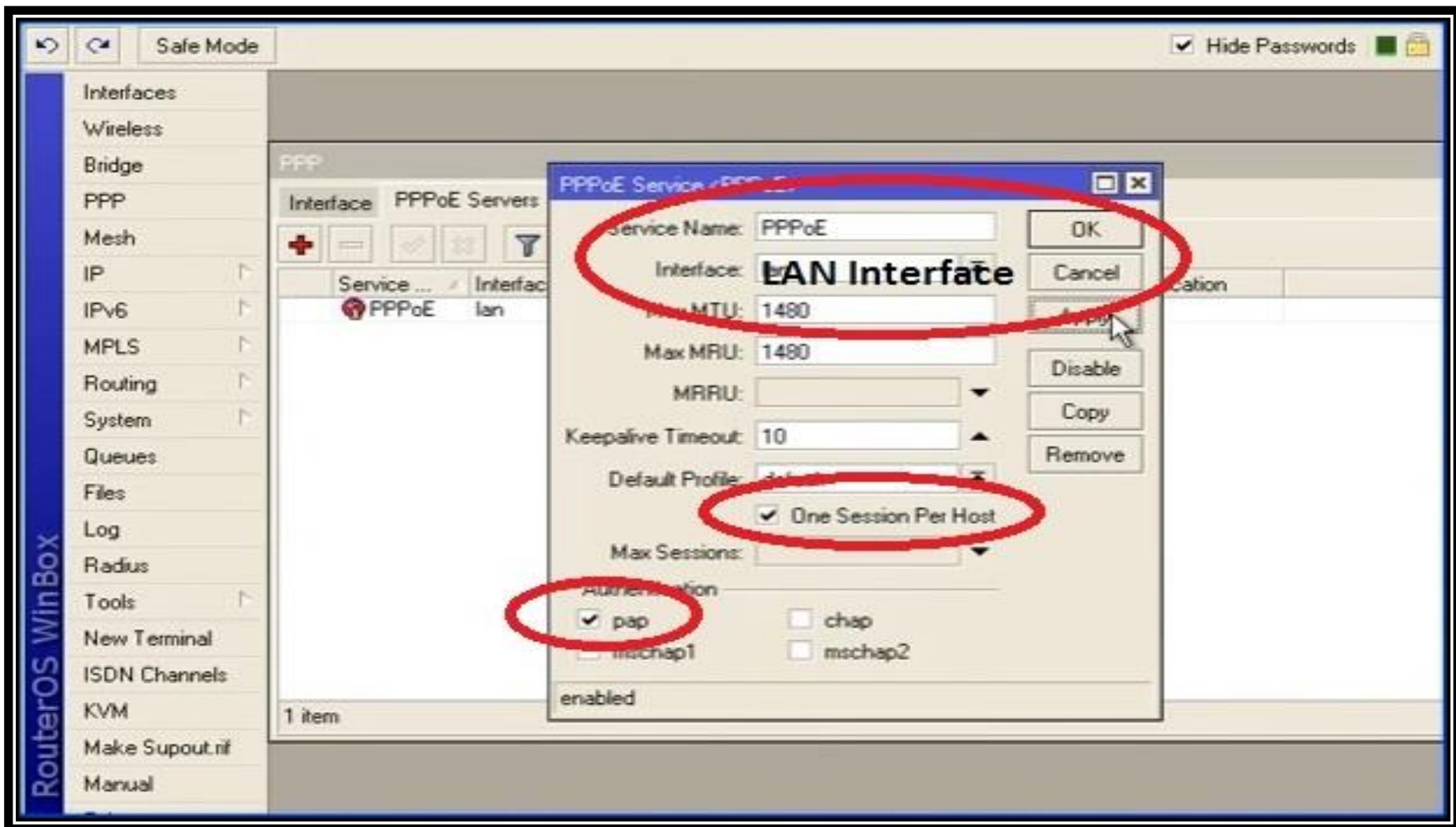
➤ Please Check Once NAT Rule



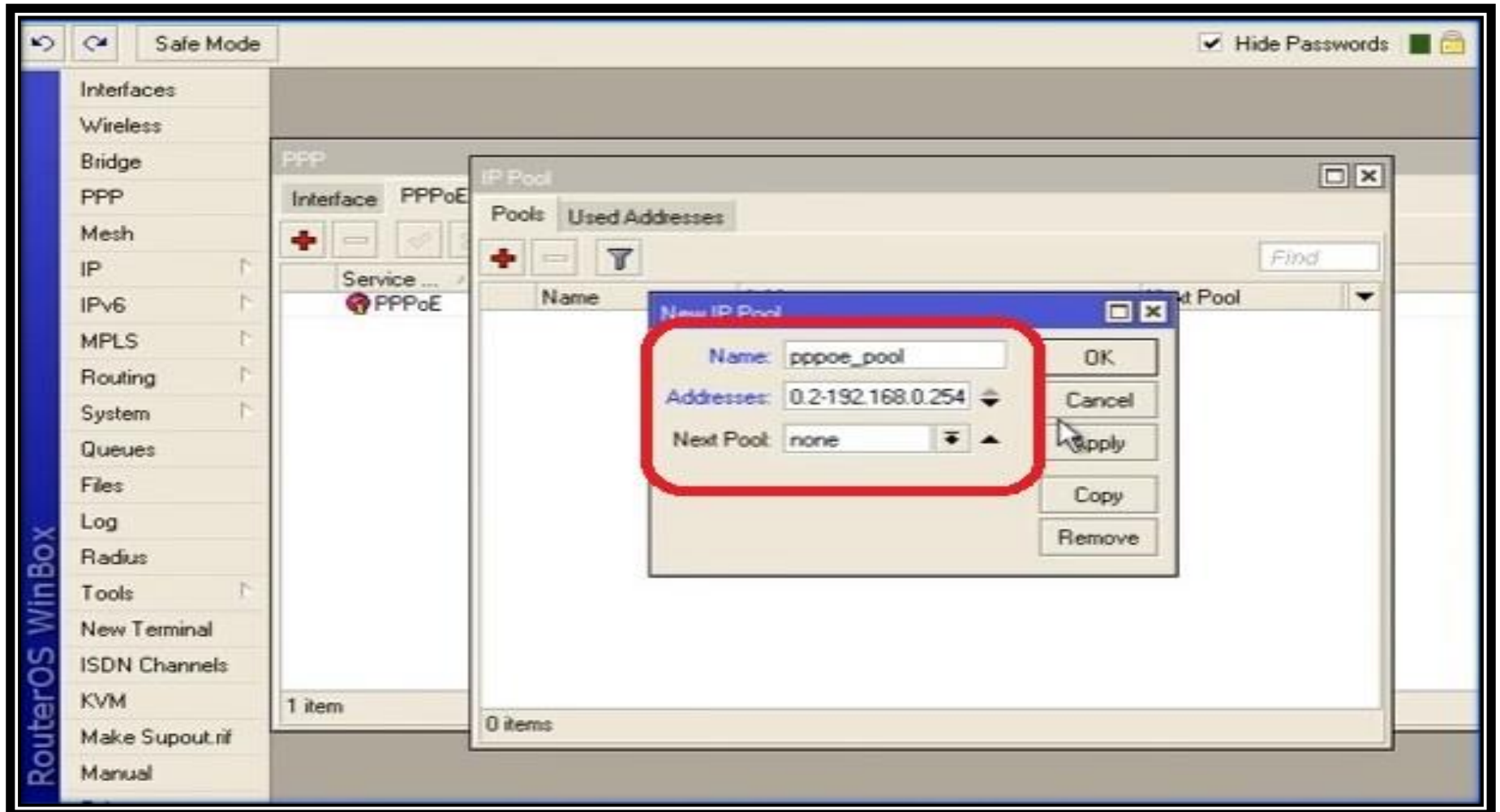


➤ Go to PPP – Interface – Set Name- Apply & Ok

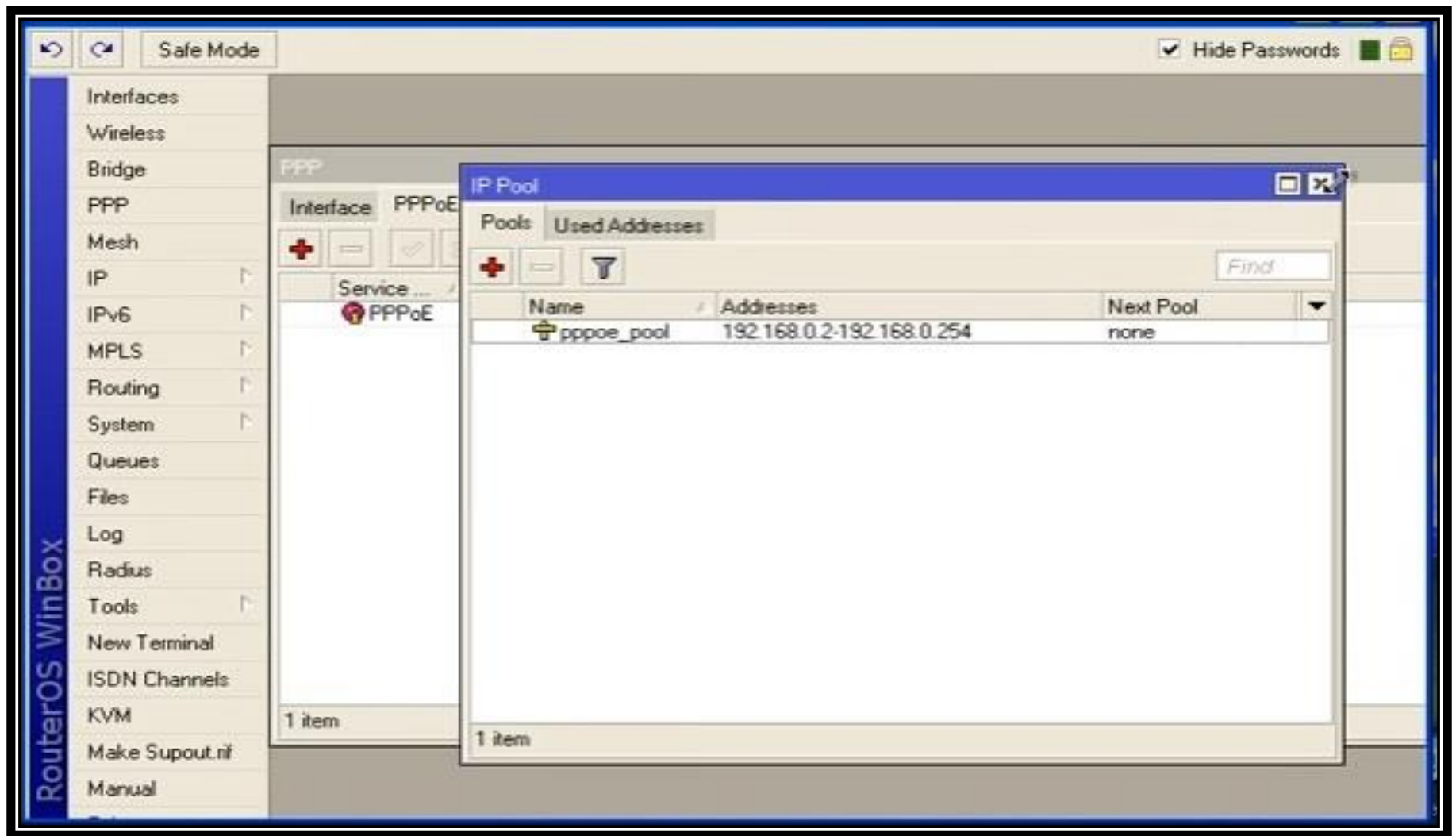




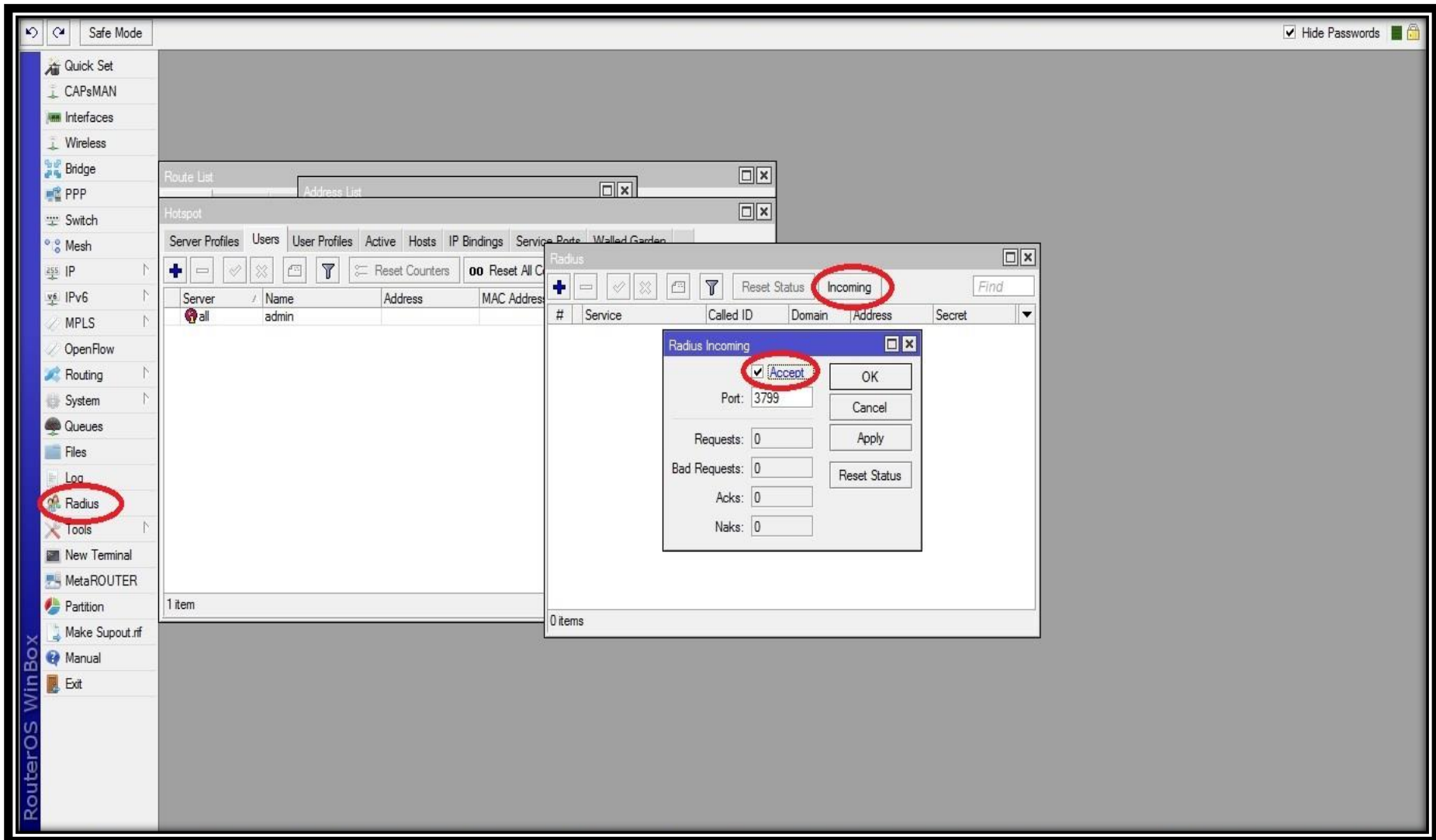
- Go to PPPoE Servers – Set Services Name – Set LAN Interface – Click One Session Per Host – Click pap – Apply & Ok



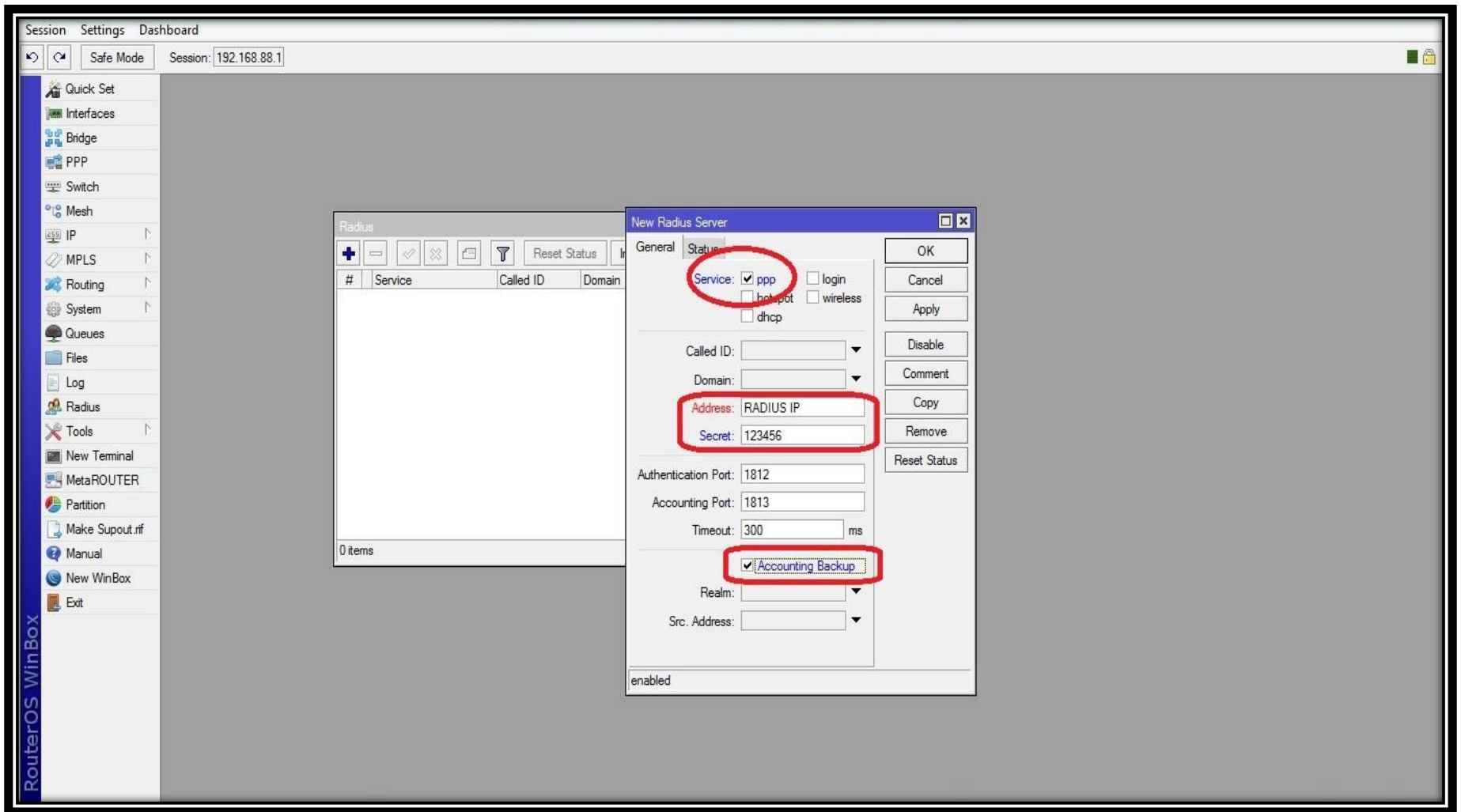
➤ **Go to IP – Pool – Add New Pool – Set Pool Name – Set LAN Address**



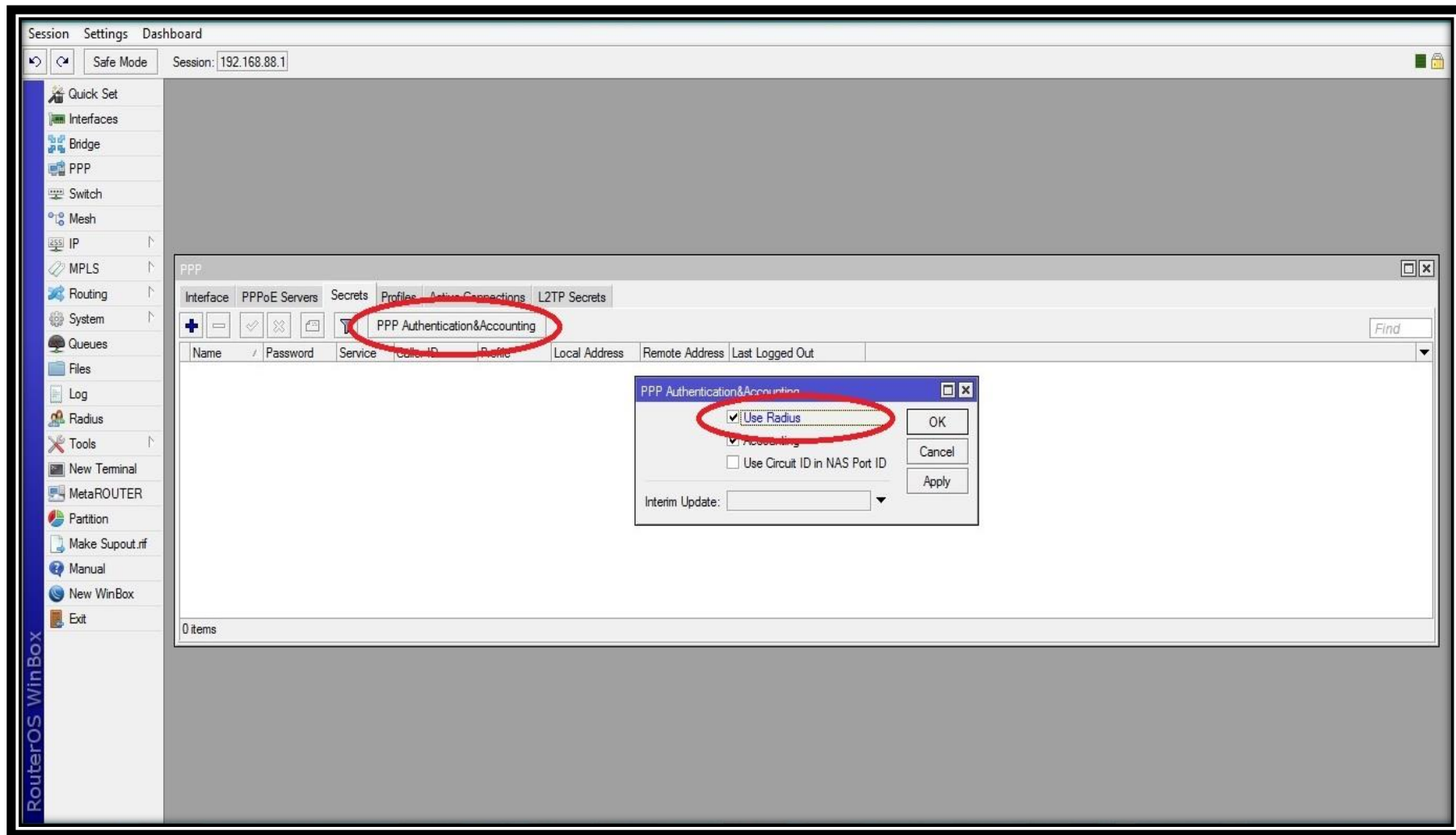
➤ Check Once IP PPPoE Pool



➤ **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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