Multilink Computers Pvt Ltd

WELCOMES YOU @ MIKROTIK MUM



NEW DELHI

2 SEP 2016



www.multilinkonline.com

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





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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 <u>www.multilinkonline.com</u>



ONLINE PORTAL





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ONLINE PORTAL





CASESTUDY IN MIKROTIK

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



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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





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Wi-Fi Connectivity (with controller) diag.



MIKROTIK IN MULTIPOINT





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Base Station with Sectorcoverage 10 Km with 240/360 clients



Connectivity diagram: - Last mile with Local ISP setup





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THANK YOU

<u>+</u>



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Fibre to the Home



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<u>GPON</u>

- A passive optical network (PON) is a point-tomultipoint, 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.



<u>GPON</u>

- 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





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Mikrotik GPON ONU with Sector





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<u>GPON</u>





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Community Broadband distribution - FTTH Connectivity



ultilink

<u>Use of MikroTik in FTTH - diag.</u>





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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, faxover-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

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

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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 Value Proposition

Mikrotik NAS Setup with Hotspot

Configuration LAN , WAN & RADIUS

➤Go to IP - Add IP For LAN & WAN

Configuration LAN , WAN & RADIUS

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🧷 MPLS 🗈 🕅	DHCP Client	Name / Interface Address Pool Profile Addresses	
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Image: Safe Mode Image: CAPsMAN Image	Route List Hotspot Service Server Profiles Sers User Profiles Active Hosts IP Bindings Service P Image: Service Profiles Service P Image: Service Profiles Service P Image: Service P <	Hotspot Server Profile General Login RADIUS General Login RADIUS OK Cancel Apply Location ID: Location Name: V MAC Format: XXXXXXXXXXX Interim Update 01:00:00 NAS Port Type: 19 (wireless-802.11)	✓ Hide Passwords ■
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> IP – Hotspot – Server Profile – Double Click on Hotspot1
 - Click Use Radius.

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> Click Radius – Click Incoming – Click Accept

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v∳ IPv6 ►	Server / Name Address MAC Addre	hotspot	Apply	
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> 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

← → CC 🖞 www.comapny.name/login		☆ =
	Latviskí	
	Please log on to use the internet hotspot service	
	login admin password OK	
	Dowered 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

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🔔 Wireless		
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📲 PPP	Address / Network Interface	
🛫 Switch	:: WAN	
° 🖁 Mesh	〒192.168.88.1/ 192.168.88.0 ether1	
4 PI 4	Address <192,168,1:1/24>	
ve IPv6 ►	Address: 192.168.1.1/24 OK	
MPLS 🗅	Network: 192.168.1.0	
OpenFlow	Interface: ether?	
Routing N	nondot. <u>control y</u> <u>Appy</u>	
til System ►	Disable Comment for Address <192.168.1.1/24>	
Queues	Comment LAN OK	
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>Go to IP – DNS – Add DNS Server

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≻Go to IP – Routes – Add Gateway

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≻Go to IP – Firewall – NAT

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Log		Out. Interface:	-	
Radiu	8	Distantial (
Tools	P.	Packet Mark.		
New	Terminal	Connection Mark:		
ISDN	Channels	Routing Mark:	-	
E KVM		Routing Table:	-	
8 Make	Supout.nif			
Manu	al	Connection Type:		

>Add NAT Rule – Chain – secant – Src. Address (LAN IP)

ъ	9	Safe Mode		✓ Hide	e Passwords 📕 🗂
	Interfac	es	New NAT Rule		
	Wireles	5	General Advanced Extra Action Statistics	[OK
	Bridge		Action masquerade		Cancel
	PPP				Arch
	Mesh				Act a
	IP	0			Disable
	IPv6	D:			Comment
	MPLS	1		Ī	Сору
	Routing	E P.			Bemove
	System	P			
	Queues				Reset Counters
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B	Radius	-			
/lin	Tools	P.			
>	New Te	minal			
ö	ISDN C	hannels			
ē	KVM				
no no	Make S	upout.nř			
Ř	Manual				

> Go to Action – Select Masquerade – Apply & Ok

5	0	Safe Mode	🗹 Hide Passwords 📗 👼
	Interfa	ces	
	Wirele	\$\$	
	Bridge		Firewall
	PPP		Filter Rules NAT Mangle Service Ports Connections Address Lists Layer7 Protocols
	Mesh		💠 😑 🥪 🖄 🖆 🍸 🚝 Reset Counters 🛛 00 Reset Al Counters 🛛 Find 🛛 al 🔻
	IP	- P.	# Action Chain Stc. Address et Address Proto Stc. Port Dst. Port In. Inter Out. Int I
	IPv6	D.	0 =1 mas srcnat 192.168.0
	MPLS		L'AIV IF
	Routin	ng P	
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â	Radiu	s	
E	Tools	P.	
\geq	New 1	erminal	
SC	ISDN	Channels	
er (KVM		• 1 Jam
f	Make	Supout.rif	
Rc	Manu	ł	

>Please Check Once NAT Rule

5	C* Safe Mode						🗹 Hi	de Passwords 🔳 🙆
	Interfaces						_	
	Wireless		New Interfa	xe				
	Bridge	PPP	General	Status Traffic			OK	
	PPP	Interface PPPoE	Name:	pppoel Any Na	me		Cancel	
	Mesh	+	Lune	PEPOE Server			Annh	rver OVPN Serve
	IP F	Name	LONTIL			_	-0499	ac Tx Drops Rx D
	IPv6		LZMIU.				Disable	
	MPLS D		User				Comment	
	Routing		Service:				Сору	
	System 1						Remove	
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	Files						Torch	
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8	Radius							
lin	Tools 1							
2	New Terminal							
So	ISDN Channels							
er	KVM	0 items out of 2						
E	Make Supout.nif		enabled	running	slave	Status:		
R	Manual							
	-							

>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

5	C* Safe Mode			🗹 Hide Passwords 🔳 🛅
2	C [▲] Safe Mode Interfaces Wireless Bridge PPP Mesh IP PV6 MPLS Routing System Queues Files	PPP Interface PPPoE	Pools Used Addresses	Hide Passwords
rOS WinBox	Radius Tools P New Terminal ISDN Channels		Remove	
Route	Make Supout nif Manual	1 item	0 items	

>Go to IP – Pool – Add New Pool – Set Pool Name – Set LAN Address

5	0	Safe Mode			🗹 Hide Passwords 📕 👼
	Interfa Wirele	ces			
	Bridge		PPP	IP Pool	
	Mesh		+ = 0	Pools Used Addresses	Find
	IPv6 MPLS	2 2	Service	Name Addresses Ppppoe_pool 192.168.0.2-192.168.0.254	Next Pool none
	Routin System	ng P			
	Queue Files	55			
Box	Radiu	s			
Win	Tools New T	reminal			
ros	ISDN	Channels			
Route	Make Manu	Supout.nif al	1 item	1 item	

>Check Once IP PPPoE Pool

Ю	C* Safe Mode			🗹 Hide Passwords 📕 🛅
	Guick Set			
	CAPsMAN			
1	m Interfaces			
	Uireless 💭			
9	🗳 Bridge	Route List		
	PPP	Address List		
	定 Switch	Hotspot		
•	🖁 Mesh	Server Profiles Users User Profiles Active Hosts IP Bindings Service	Pote Walled Garden	
1	돌 IP ト	🔶 🗁 🖉 🖾 🍸 🖾 Reset Counters 🛛 00 Reset All C		
9	iPv6 ►	Server / Name Address MAC Address		
	🖉 MPLS 💦 👌	i i i i i i i i i i i i i i i i i i i	# Service Called ID Domain Address Secret	
	🖉 OpenFlow		Radius Incoming	
3	🕻 Routing 🛛 🗅		OK OK	
	🕼 System 🗈		Port: 3799 Cancel	
	Queues		Pequete: 0 Apply	
	Files			
	Loa		Bad Requests: U Reset Status	
	Radius		Acks: 0	
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	New Terminal			
3	MetaROUTER			
	Partition	1 item	items	
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> Click Radius – Click Incoming – Click Accept



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

Session Settings Dashboard	
ら (M Safe Mode	Session: 192.168.88.1
Quick Set	
🔚 Interfaces	
📲 🖁 Bridge	
PPP 📑	
🕎 Switch	
°t <mark>8</mark> Mesh	
255 IP 1	
Ø MPLS 🗅	PPP
💐 Routing 🗅	Interface PPPoE Servers Secrets Profiles Active Connections L2TP Secrets
Ø System ►	Find
Queues	Name / Password Service calle ID Politie Local Address Remote Address Last Logged Out
Files	
Log	
Radius	OK OK
	Use Circuit ID in NAS Port ID
	Apply
	Interim Update:
Make Suport of	
Manual	
New WinBox	
Exit	
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>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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