

Lunch at Viceroy ballroom

We will be back at 14:30

MUM India

September 2016



MUM India September, 2016

More than 130 MUMs all Around the World



MUM INDIA #5

- 82 Mumbai 2008
- 162 New Delhi 2012
- 220 New Delhi 2014
- 411 New Delhi 2015



- Established 1996
- RouterOS created in 1997
- RouterBOARD created in 2002
- First MUM event in Prague 2006
- Biggest MUM in 2015, Indonesia 2500+ people
- More than 180 employees



MikroTik at the MUM

- Janis Jankovskis (sales)
- Uldis Cernevskis (support)
- Sergejs Boginskis (support, training)



Schedule

mt.lv/agenda

1200

13:00	Lunch				
17:45	Lottery				
18:00	Free drinks and socializing				

Exhibitors and coffee in the hall

MUM Live

www.youtube.com/mikrotik

After the MUM

Presentation slides - <u>mum.mikrotik.com</u>

Previous MUM India slides http://mum.mikrotik.com/2015/IN/agenda

Videos - youtube.com/mikrotik

Licenses will be emailed.

Special Thanks

JRS Communication Pvt. Ltd.

Krauss Communication



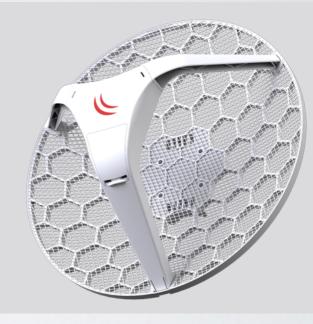
Ethernet Routers



Wireless for Home & Office











Switches









RouterBOARDs

What we do

- MikroTik provides routing and wireless equipment for all possible uses: wireless, ethernet routing, switches
- Our RouterOS software supports most common and also many custom made features

RouterOS

- MikroTik RouterOS is the operating system of RouterBOARD hardware
- Stand-alone operating system based on the Linux kernel
- Routing, firewall, bandwidth management, wireless access point, wireless link, hotspot gateway, VPN server and more

Why us

- Millions of RouterOS powered devices currently routing the world
- 20 years of experience developing networking software and hardware
- Over 40'000 RouterOS trained and certified network engineers

PRODUCT SERIES

ETHERNET ROUTERS

From small to big, for every need.
RouterBOARD and CCR series.
Desktop and rack mount.

hEX lite

- Small Ethernet device
- Five ports
- Power output version (hEX PoE lite)



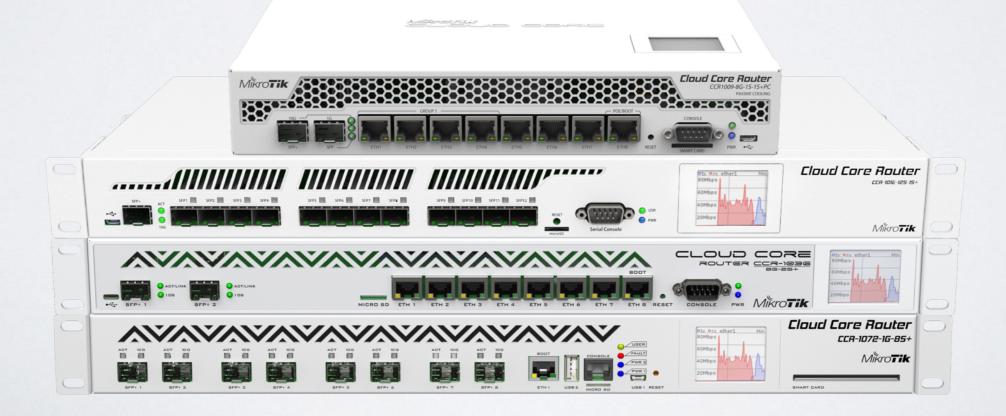
RB2011 and RB3011

- Rack mount and desktop case
- 10 Ethernet ports
- I SFP (fiber optic)
- RB3011 dual core ARM CPU



CCR series

- 9, 16, 36 and 72 cores
- Extreme performance
- Hardware accelerated encryption
- I Gbps Ethernet, SFP and SFP+ ports



CCR series

CCR1072-1G-	1072-1G-8S+ Tile 72 Core (1000Mhz, DDR1600) Max possible throughput							
Mode	Configuration	1518 byte	1518 byte		512 byte		64 byte	
		kpps	Mbps	kpps	Mbps	kpps	Mbps	
Bridging	none (fast path)	6,502.0	78,960.3	18,790.0	76,963.8	98,873.5	50,623.2	
Bridging	25 bridge filter rules	5,764.8	70,007.7	8,240.2	33,751.9	8,866.3	4,539.5	
Routing	none (fast path)	6,502.0	78,960.3	18,790.0	76,963.8	76,201.0	39,014.9	
Routing	25 simple queues	6,502.0	78,960.3	11,073.5	45,357.1	11,444.4	5,859.5	
Routing	25 ip filter rules	4,664.7	56,648.1	5,200.3	21,300.4	5,321.0	2,724.4	

CCR1036-8G-25	CCR1036-8G-2S+EM Tile 36 core max possible throughput test						
Mode	Configuration	1518 byte		512 byte		64 byte	
		kpps	Mbps	kpps	Mbps	kpps	Mbps
Bridging	none (fast path)	2275.7	27636.1	6578.9	26947.2	41666.7	21333.4
Bridging	25 bridge filter rules	2275.7	27636.1	5179.7	21216.1	5163.5	2643.7
Routing	none (fast path)	2275.7	27636.1	6578.9	26947.2	41666.7	21333.4
Routing	25 simple queues	2275.7	27636.1	6553.3	26842.3	7643.1	3913.3
Routing	25 ip filter rules	1825.7	22171.3	3033.9	12426.9	3049.7	1561.4

WIRELESS FOR HOME & OFFICE

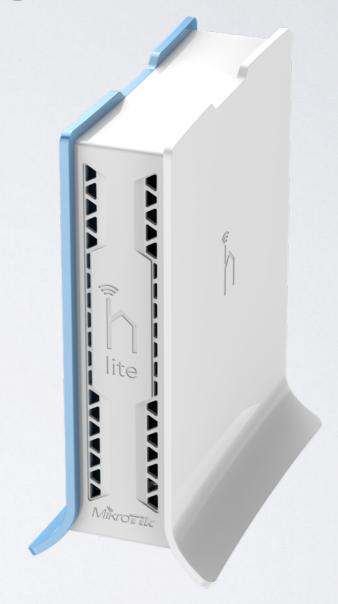
mAP lite



Tiny size 2.4GHz Dual Chain personal access point with a 650MHz CPU, 64MB RAM and one Ethernet

hAP lite





Small and nice design. Low cost, for home or office

WIRELESS SYSTEMS

NetMetal

- Waterproof metal enclosure
- Gigabit Ethernet, SFP
- 3 chains (antennas)
- 802. Hac technology
- 4 different models



SXT

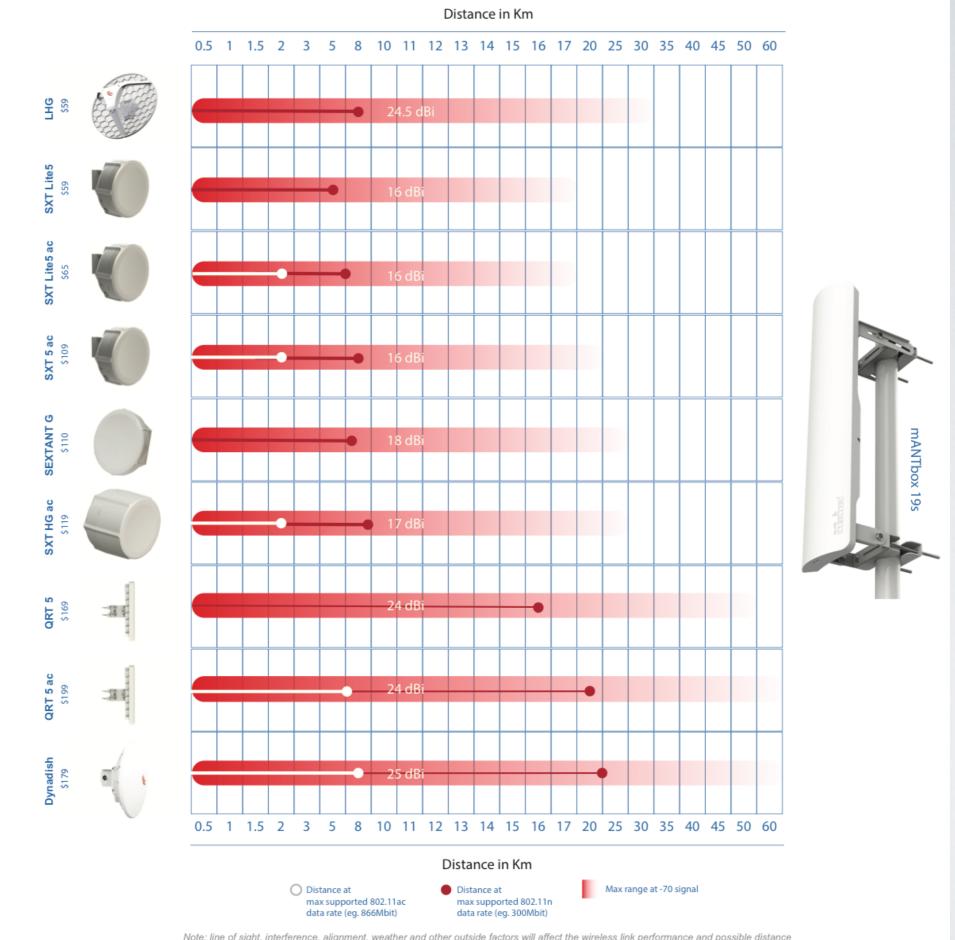
- Compact AP/CPE
- 24-90 degree antenna
- Different models available (2GHz, 5GHz, 802.11ac)
- Low cost
- Mid-range wireless links



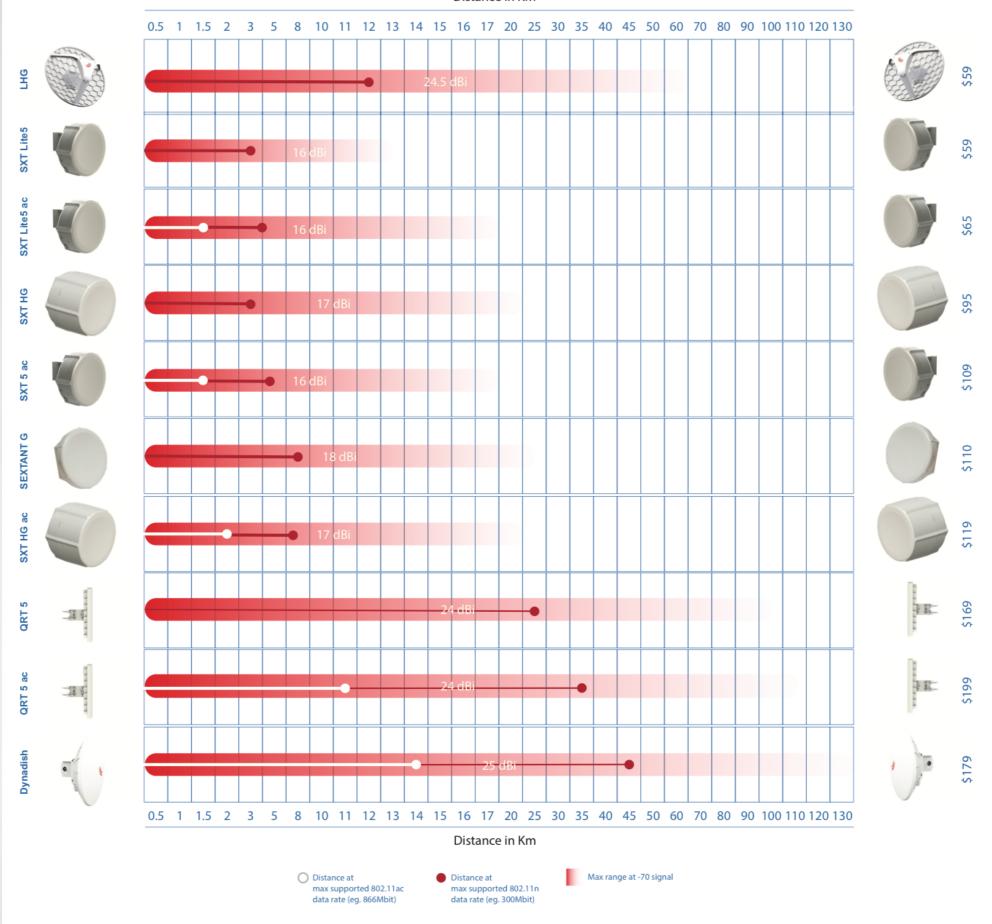
DynaDish

- Dual-chain 802.11ac
- 8 degree, 25dBi antenna
- I Gbit Ethernet
- Long range point-to-point links





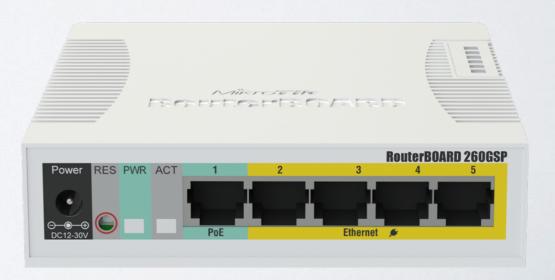
Distance in Km



SWITCHES

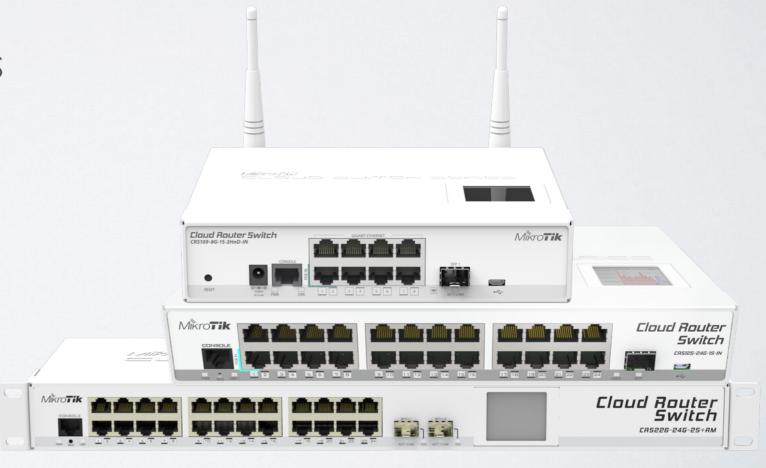
RB260GSP

- Small switch
- Runs SwOS software
- Powers other devices over PoE



CRS Series

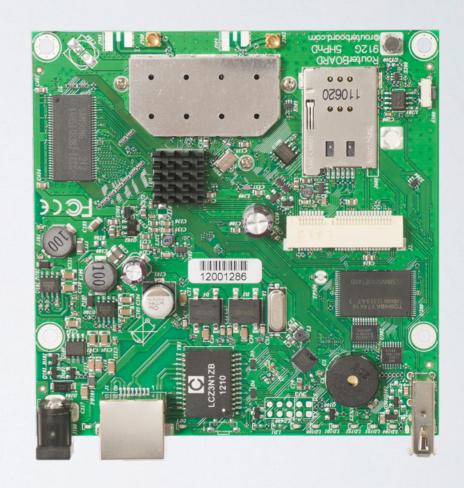
- Layer 3 switches
- Run MikroTik RouterOS
- From 8 to 24 ports
- Gbit Ethernet
- SFP/SFP+
- Wireless



ROUTERBOARD

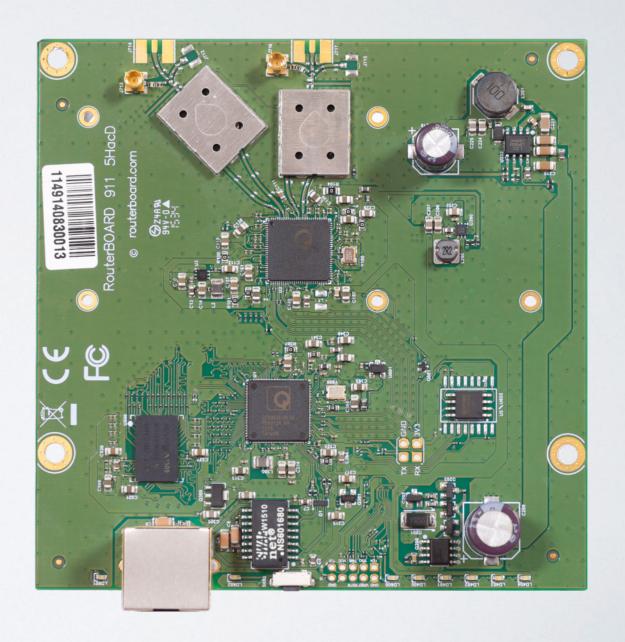
RouterBOARD

- Use custom case
- Upgrade or expand with ease
- Choose model based on ports, features and speed



RB911 ac

- 802. I lac support
- 10/100 Mbit port
- Affordable cost



INTERFACES AND MORE

SFP modules

- 1.25Gbps and 10Gbps
- Single, Multi modes
- Different distances
- GPON



Wireless Cards

- 802.11 a/b/g/n/ac
- 2GHz, 5GHz
- miniPCI-e, miniPCI



Antennas

- mANT30
- Parabolic dish
- Regular or precise alignment
- Radome cover



NEW PRODUCTS



LHG 5 Light Head Grid

• 24.5 dBi antenna

Antenna is built into wireless unit

• 802. I la/n dual chain

Very affordable





LHG 5

Light Head Grid

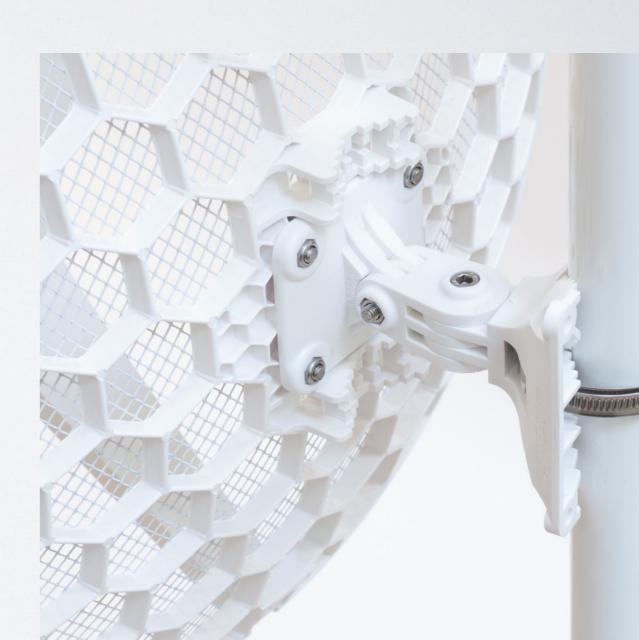






quickMOUNT pro LHG

- Wall or pole mount adapter
- ±70° horizontal adjustment
- ±30° vertical adjustment
- Special plastic composite material - anvilNITE (TM)



now

SXT LTE

- LTE 3 category modem
- 100Mbps download and 50 Mbps upload
- LTE FDD bands 3 (1800MHz)
- miniSIM slot

WAP LTE kit

- 2GHz wireless
- LTE antennas
- LTE modem within minipci-e
- weatherproof case
- indoor, outdoor, mobile operation
- more information at Uldis presentation





mANTBox 15s

- 15 dBi 120 degree antenna
- RB921 inside
- 720MHz CPU power
- 802.11 ac/a/n wireless with 31dBm output power



mANTBox 19s

- 19 dBi 120 degree antenna
- RB921 inside
- 720MHz CPU power
- 802.11 ac/a/n wireless with 31dBm output power





Groove 52 ac



• ac update for the popular Groove model



Metal 52 ac



- Waterproof, rugged with a super high output power
- 802.11 b/g/n and 802.11 a/n/ac, 1xGigabit Ethernet



mAP



- update for small AP, dual chain 2.4GHz wireless
- 802.3 af/at support, PoE out!



wAP ac





- Wall or ceiling mountable
- Use for hotel, office, etc.
- Gigabit and 802.11ac
- Dual band (simultaneous 2.4GHz and 5GHz)



cAP



- ceiling AP, dual chain 2.4GHz wireless
- 802.3 af/at support



hAP ac lite

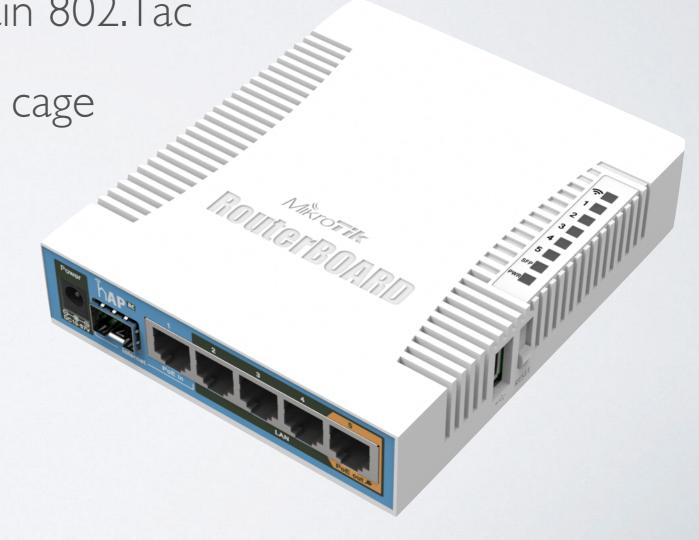
- Dual concurrent home AP
- 2.4GHz high power 2 chain 802.11n
- 5GHz high power I chain 802. I ac
- 100Mbps port
- 650MHz CPU
- PoE-out on port 5





hAP ac

- Gigabit dual concurrent home AP
- 2.4GHz high power 3 chain 802.11n
- 5GHz high power 3 chain 802. I ac
- 5x1Gbps ports & 1 SFP cage
- 720MHz CPU
- PoE-out on port 5





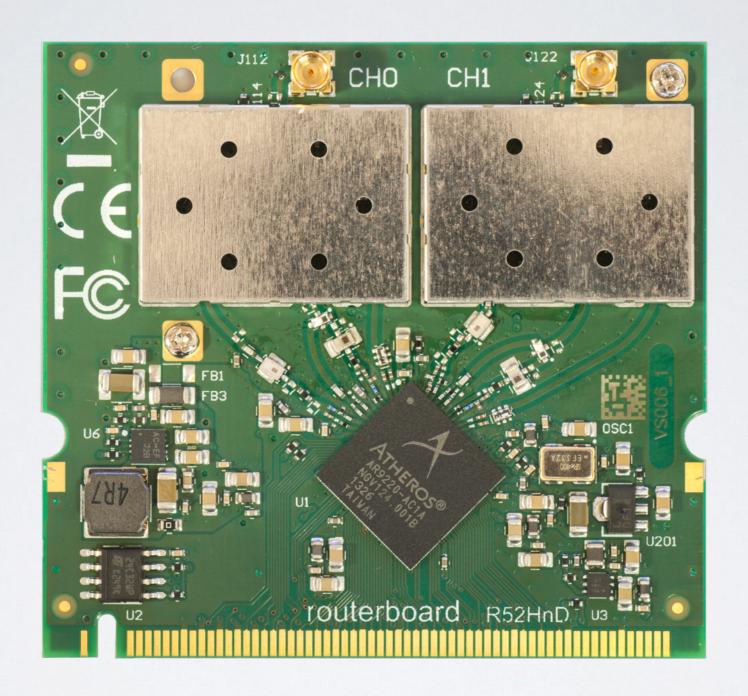
SXT 6GHz



- 5940-6500 MHz range
- 802.11 a/n
- Antenna gain 16dBi
- Antena beam width 28



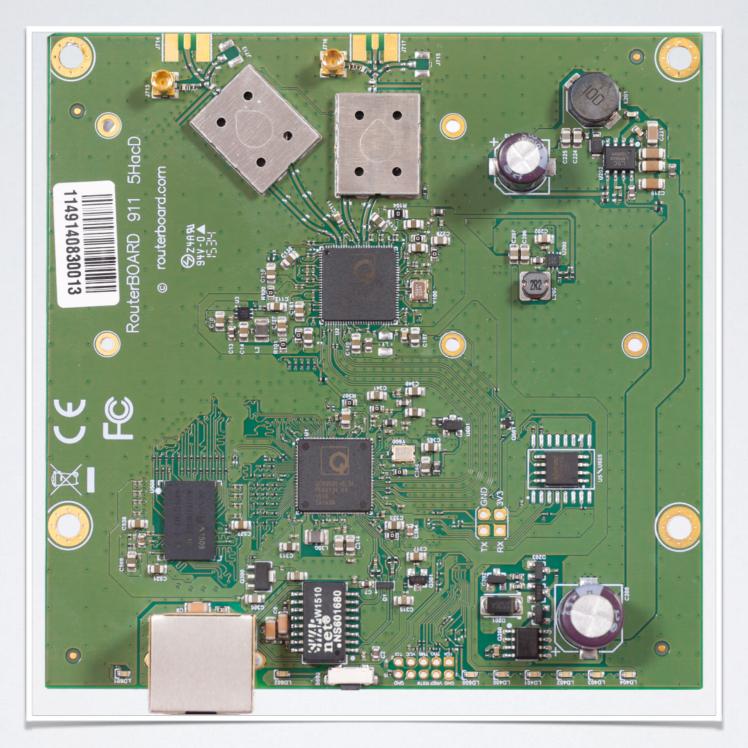
R52HnD



tx-power 26 dbm, R52H replacement



911 Lite 5ac



ac update for extremely affordable board

hEX PoE

- Small Ethernet device
- Five Gbps ports
- Power over Ethernet out on ports 2-5



OmniTIK 5 ac

- 802.11ac, 2 chains
- 5x | Gbit Ethernet ports
- 7.5 dBi
- PoE in





OmniTIK 5 PoE ac

- 802.11ac, 2 chains
- 5x | Gbit Ethernet ports
- 7.5 dBi
- PoE in
- PoE out (ports 2-5)



All Products

- Include free software upgrades for life
- Run the same RouterOS software*
- For more info see routerboard.com

ROUTEROS FEATURES

CHR Cloud Hosted Router

- RouterOS version tailored for running in virtual environments
- Runs on VMware Workstation and ESXi,
 VirtualBox, HyperV, KVM, XenServer, etc.
- Cloud services Amazon, Azure and others



1. Choose AMI

Choose Instance Type

Configure Instance

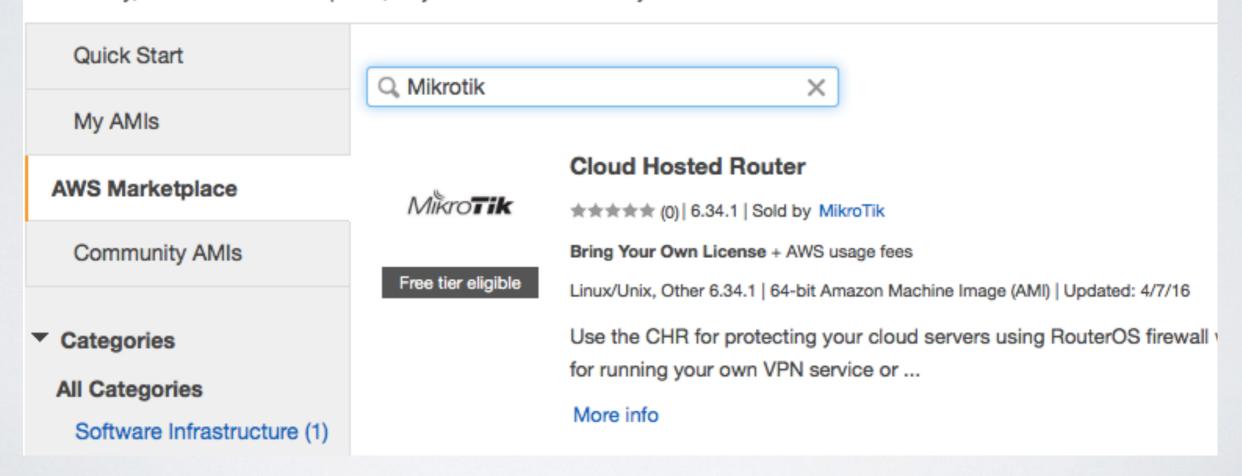
Add Storage

Tag Instance

6. Configure Security

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required community, or the AWS Marketplace; or you can select one of your own AMIs.





- Firewall for your cloud services
- VPN server in the cloud
- The Dude monitoring server
- Simulate networks for learning or training
- And much more



License	Speed limit	Price
Free	IMbit	FREE
PI	I Gbit	\$45
PIO	IOGbit	\$95
P-Unlimited	Unlimited	\$250

- 60 day trial available
- Purchased license can be transferred



Licence			
System ID:	6lR1ZP/utu3		OK
Level:	free	Ger	nerate New I
Next Renewal At:		Re	new Licence
Deadline At:			
	Limited Upgrades		
Renew Licence			K
Account: mymik	rotikcomaccount	Start	
Password: *****	*****	Stop	il
Level: P1	₹	Close	i l

2			
	Licence		□×
	System ID:	6lR1ZP/utu3	OK
	Level:	P1	Generate New ID
	Next Renewal At:	Jan/10/2016 21:59:59	Renew Licence
	Deadline At:	Feb/09/2016 21:59:59	
		Limited Upgrades	

WinBox → System → License



Routers & Wireless

home

software

hardware

support

downloads

purchase

training

account

Logout

Search...

Overview Support

Account Notices



You must approve your account for creditcard purchases.

Account authorisation procedure ***

Current account balance is \$0 Prepaid keys available: 0

Generate a NEW software KEY

- purchase a key
- make a demo key

For already created software keys

- all keys or try search
- replacement key (0)
- request key from another account

Cloud Hosted Router (CHR)

- all keys
- orders and invoices

Account information

- balance
- change user information
- hardware orders

Training

- my training sessions(0) my certificates(0)
- MikroTik User Meeting

Support

- support contact form
- supout.rif viewer

Other

lockpack creator

www.mikrotik.com





[Back To Main Menu]

User Keys

Show 10 + entries Search:

System ID	Key	Issued	Expires	Level	Transfer	Action	Note
6IR1ZP/utuJ	BEGIN MEKROTIK SOFTWARE KEY BINRYNUSh1VkqfcR4xfrXcyF38844BysE1q64BksNodTDUhTuKBggpNxddOGCebjUSn1WwL7fsDsf/e2cMFA== END MEKROTIK SOFTWARE KEY	2015-12-09	2016-02-09	P1-Perpetual (Trial version)		Upgrade) 🖗

Previous 1 Next

CHR Licensing



Upgrade system license ②

System ID

Level

6lR1ZP/utuJ

√ Select level

P1-Perpetual (\$ 45.00)

P10-Perpetual (\$ 95.00)

P-Unlimited (\$ 250.00)

System 6IR1ZP/ut
Perpetual Trial version

You have following prepaid balance keys available to purchase a CHR license:

P1-Perpetual - 4 keys

Back



Payment ⁽¹⁾

You have selected: P1-Perpetual
System ID 6IR1ZP/utuJ

Total price: \$ 54.45

Pay using deposit (left: \$ 73.51)

Pay using CC

Pay using PayPal

Pay using Balance key (4)

Note: Price includes VAT 21% because you have specified EU country as your residence. To avoid this you have to enter your VAT registration number in your account settings.

Back

CHR Cloud Hosted Router

- For more info, see the CHR page on our wiki: http://wiki.mikrotik.com/wiki/Manual:CHR
- Available on the download page: http://mikrotik.com/download#chr

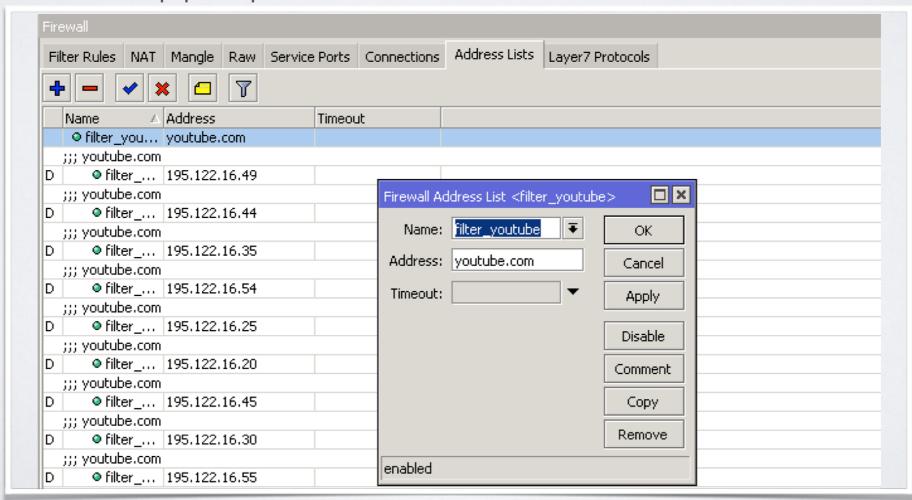
RouterOS v6.36 changelog 146 line

Wireless in v6.37

- New wireless package 'wireless'
- Read changelog before upgrade!
- DFS mode changed, all devices will be with dfs=radar-detect
- Improved driver and more come to Uldis presentation

DNS at address-list

- add DNS name to address-list, router will find addresses automatically
- set appropriate rules at firewall



The Dude v6.x

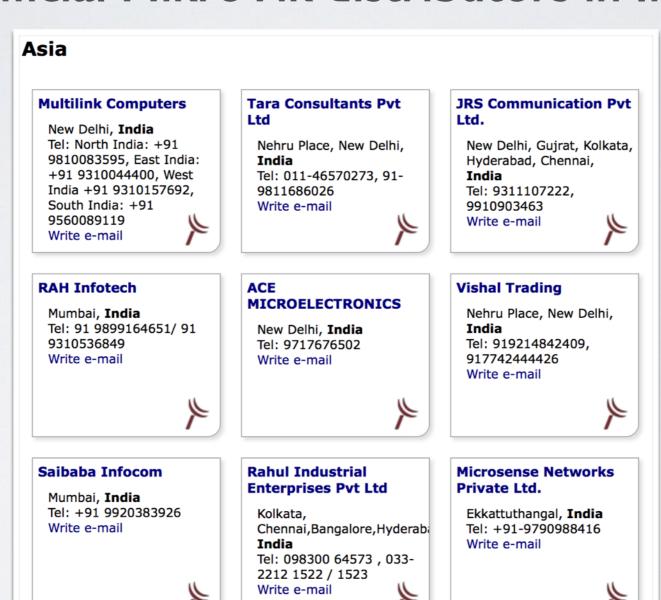
- Dude is back
- v6. server support at CCR/x86 and RB3011
- fixes and new features development
- more information at 13:45 workshop

Need Help?

- Ask a local distributor
- Read the manual wiki.mikrotik.com
- Email support@mikrotik.com
- Hire a consultant
- Attend a training class or join an Academy class in a University

Need Help?

Official MikroTik distributors in India:



Need Help?

Official MikroTik consultants in India:

Muralikrishna Kema

MTCINE, MTCNA, MTCRE, MTCTCE, MTCWE

Hyderabad, Bangalore, Tamil Nadu, India

ISP / Carrier networks design, Hotspot,QoS,OSPF, BGP,MPLS,Traffic Engineering. Wireless PtP and PtMP,Campus Wifi,Network Security Other advanced configurations Configure & Manage NMS, Gpon /Epon/ Switching L2 & L3 Mikrotik/Huawei Infrastructure ISP-VOIP Implementation, Billing, DID ,Trunking ,LCR, PBX, Load balance, large Scale Deployments. IPTV Implementation, Live Streaming, Video on Demand, Scalability for Any Size Audience

Tel: 09346732544 Write e-mail

Web: www.ctrltik.com

Manoj Kumar MUM

MTCNA, MTCRE, MTCTCE, MTCWE

Faridabad, India

Wireless Networks: desing, implementation, analysis & troubleshooting of WLAN, PtP and PtMP. High-Speed Wireless Links. Tunnel and VPN (IPSec, PPtP, L2TP) Bridging & Routing (Dymamic and Static). Firewall (Filtering Policies) . Hotspot, PPPoE, Queueing, Bandwidth Management, Firewall, Security. Hotspot, WISP administration experience, Load balancing, Advanced Wireless Security, > Bridging, STP RSTP, WDS, Mesh, Network Monitoring, Caching and WebProxy,Remote Assistance and on-site Support.

Tel: +919818763764

Write e-mail

Dawinder Singh

MTCNA, MTCRE, MTCTCE

Amritsar, **India** Tel: 91-9814138141

Write e-mail

Web: www.webtecz.com

PARTNERSHIP

How to Participate

- Become a distributor
- Take classes and become a certified trainer
- Start offering consulting services
- Coordinate a new MikroTik academy in a local University
- Create accessories and enclosures with the MFM program

PARTNERSHIP PROGRAMS

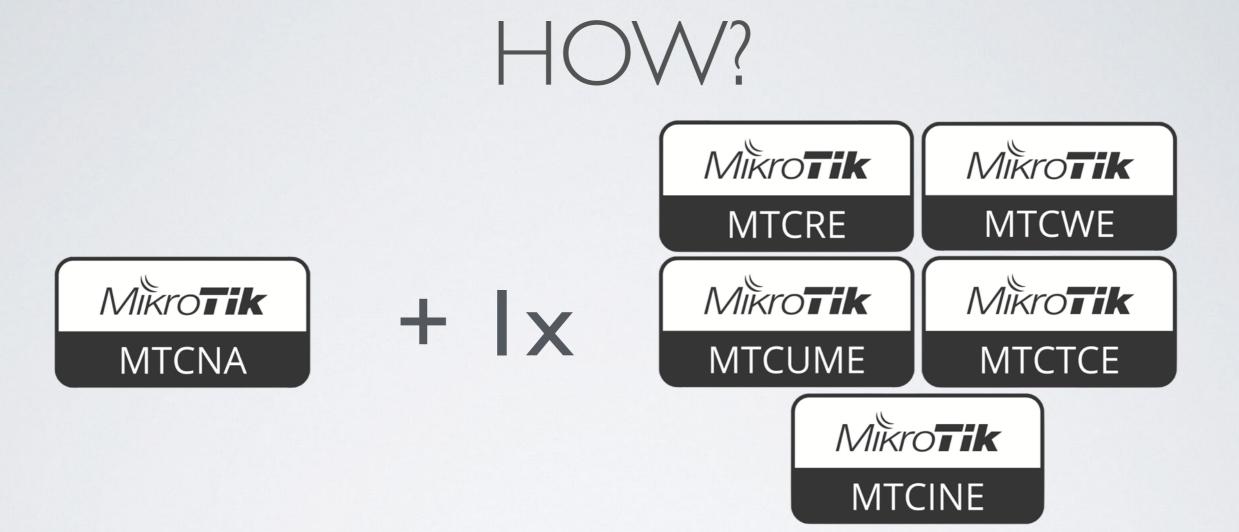




Accessories, integrators, software

WHO?

- Experienced network engineers
- Profound RouterOS and RouterBOARD knowledge



Result: 75%+
sales@mikrotik.com

WHERE?



mikrotik.com/consultants



MikroTik Train the Trainer



Training courses developed by MikroTik

Training center

WHO?

- MikroTik certified trainers
- Training according to official outline
- Develop their own training materials

Training center

HOW?

- Motivation to teach!
- At least 2 MikroTik certificates, 75%+
- Pass Train the Trainer course

Training center

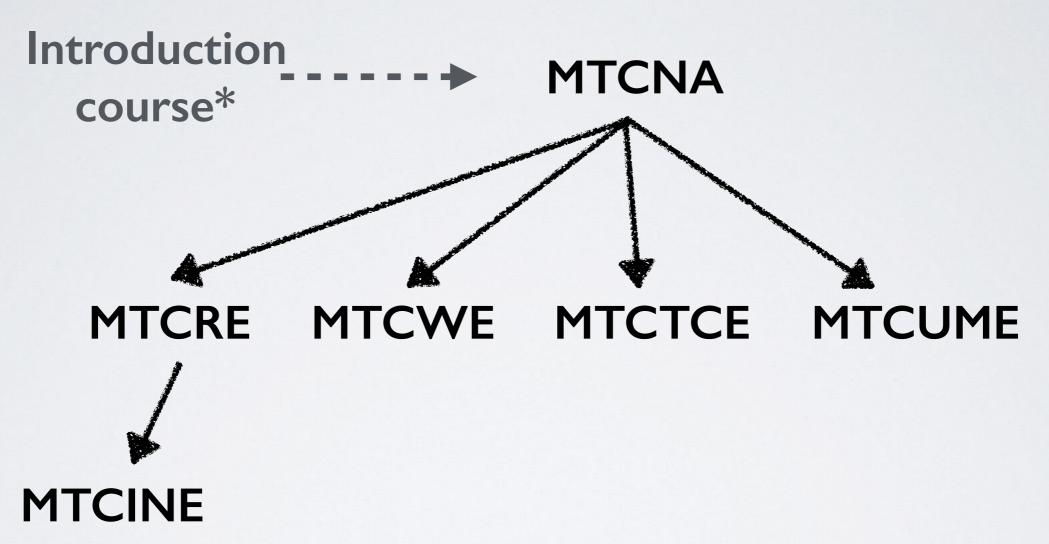


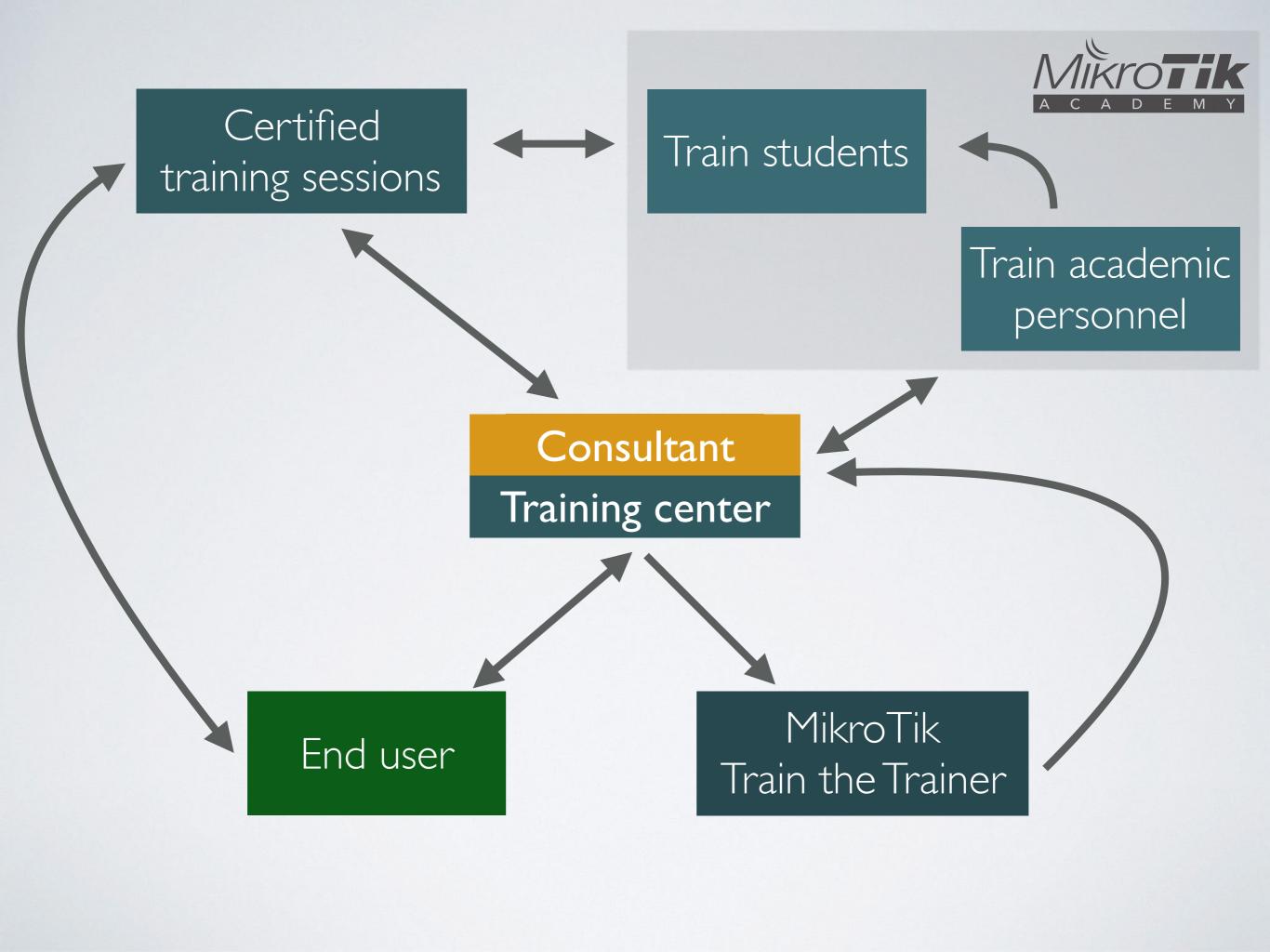
- Courses developed by MikroTik
- We offer certification tests
- Publish training schedule on our website

MIKROTIK COURSES

MTCNA	Network Associate
MTCRE	Routing Engineer
MTCWE	Wireless Engineer
MTCTCE	Traffic Control Engineer
MTCUME	User Management Engineer
MTCINE	Inter-networking Engineer

MIKROTIK COURSES





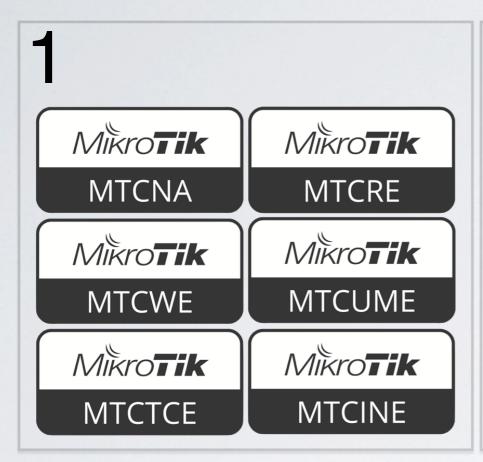
PARTNERSHIP PROGRAMS





Accessories, integrators, software

Distributor







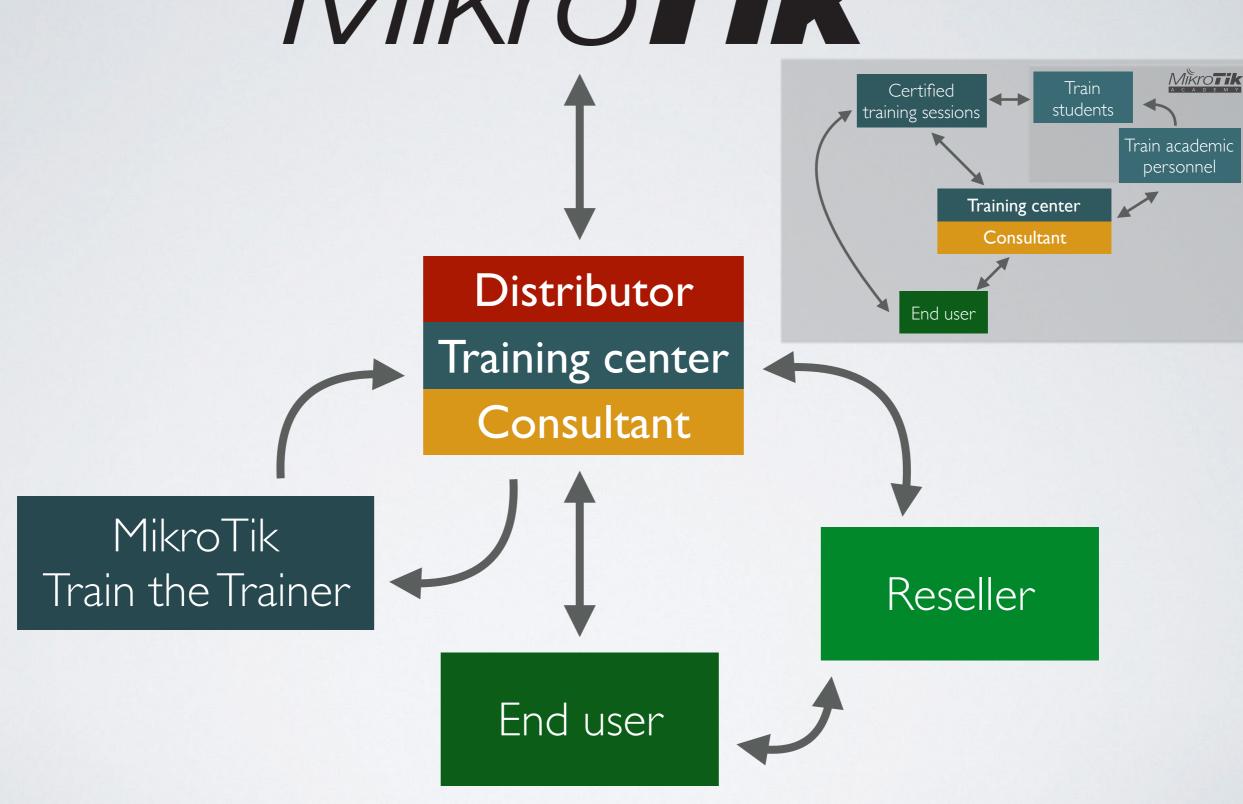
At least 1 certificate

Web page

Purchase volumes

sales@mikrotik.com





Distributor

BENEFITS

- The more you learn, the better you can help your customers
- Happier customers > better sales

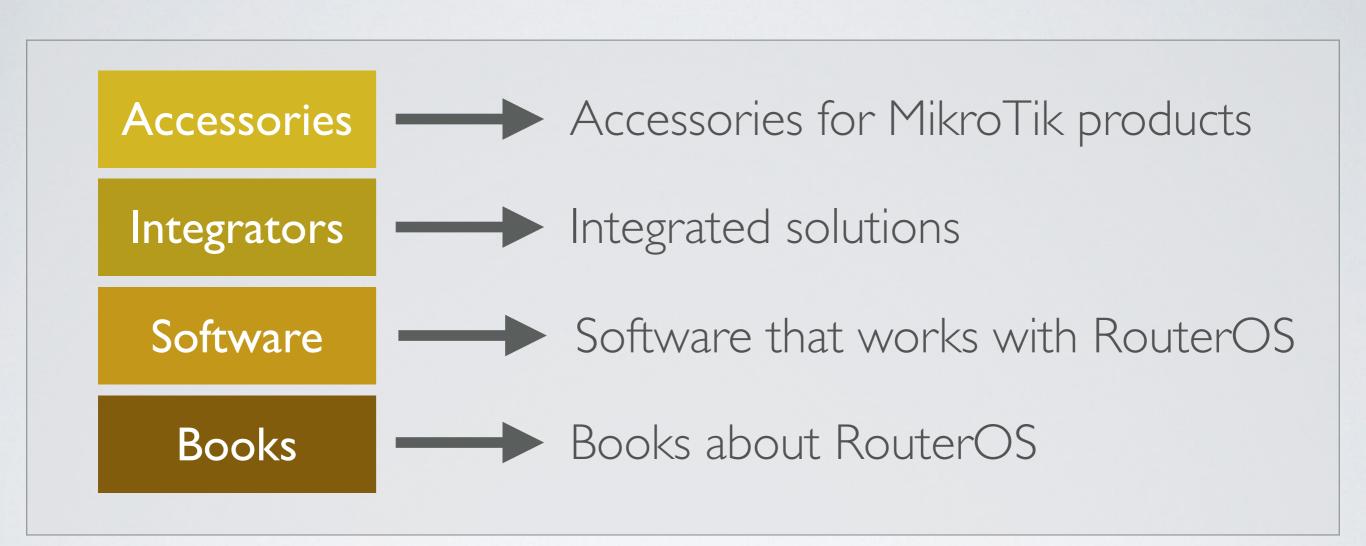
PARTNERSHIP PROGRAMS





Accessories, integrators, software





mikrotik.com/mfm

Made for Mikrotik

The Made for Mikrotik program consists of two parts: "Mikrotik certified Integrators" and "Mikrotik certified Accessories".

MikroTik Certified Accessories are made by Mikrotik approved companies, who make accessories specifically for MikroTik products. This includes RouterBOARD compatible cases, outdoor antennas and other products

MikroTik Certified Integrators are companies who make turnkey solutions based on Mikrotik RouterBOARD and RouterOS, their products include assembled CPE/AP devices, preinstalled Integrated antennas and Rackmount solutions assembled for and with RouterOS



Click here to apply to the "MFM" program

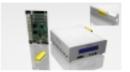
Below is a list of our 173 Certified Mikrotik Integrators and Accessory makers in Random order:

Accessories Integrators Software CPE Textbooks

Netkrom solution

http://netkromsolution.com

NetMedic is one product design to the hospital. Powered by MikroTik RouterOS NetMedic bundle with Monitor temperature, date and uptime of MikroTik. New Design Casing spesific for Hospital.



Choice NetMedic for improving performance Your Network Hospital

Pro-Cell Co., Ltd.

http://www.antenna.com.tw/

PRO-CELL is a professional antenna manufacturer in Taiwan. PRO-CELL product range includes an outdoor APA enclosure which can be combined with RouterBoards inside and antennas both inside or outside.



mikrotik.com/mfm

HOWTO APPLY?

Description

sales@mikrotik.com





WE OFFER

- Certification program for educational institutions
- Course is based on MTCNA
- Taught by Academy trainers
- Includes free MTCNA exam

MIKROTIK OFFERS

 75% compensation to Training Centers for training Academy staff

MIKROTIK OFFERS

- Training outline
- MTCNA course materials
- 20x RouterBOARDs

FREE

MIKROTIK OFFERS

- MTCNA certificates & RouterOS licenses to students
- Academy trainer shirts

FREE

HOWTO BECOME ACADEMY

- 1. Fill out application mikrotikacademy.com
- 2. Sign MikroTik Academy agreement

HOWTO BECOME ACADEMY

- 3. Attend preparatory training (conducted by partners)
- 4. Pass MTCNA + 1x engineer level certificate test (result 75%+)

HOWTO BECOME ACADEMY

- 5. Receive MikroTik Academy trainer certificate
- 6. Receive Academy package
- 7. Start giving MikroTik Academy classes



ACADEMY NUMBERS

- 200+ MikroTik Academies around the world
- 350+ Academy trainers

mikrotikacademy.com training@mikrotik.com



mikrotikacademy.com

Enjoy the MUM!

1 Alkrofik