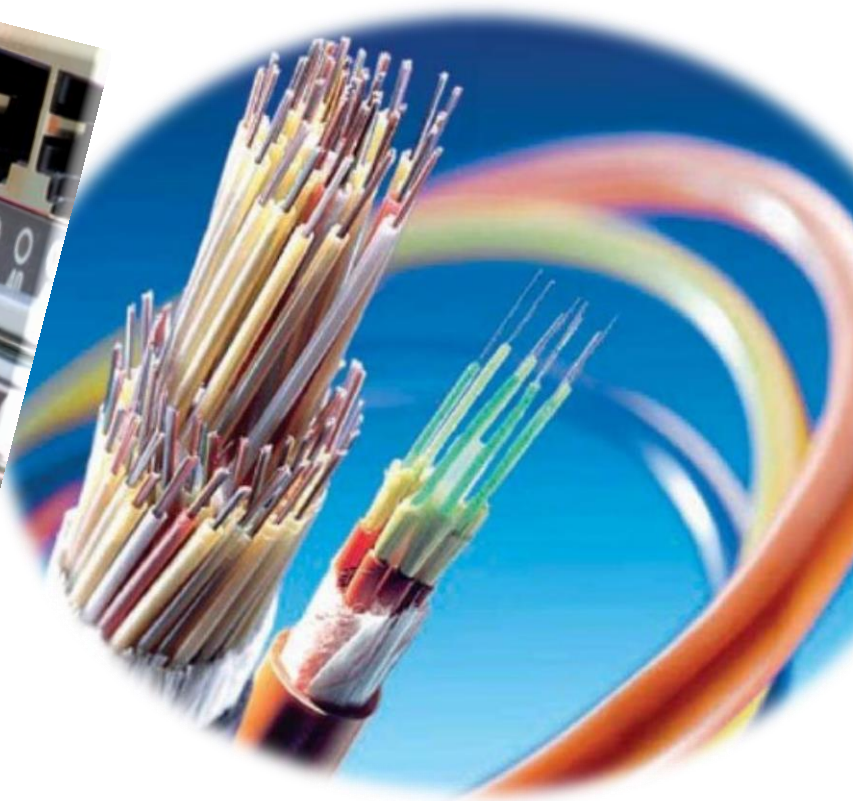
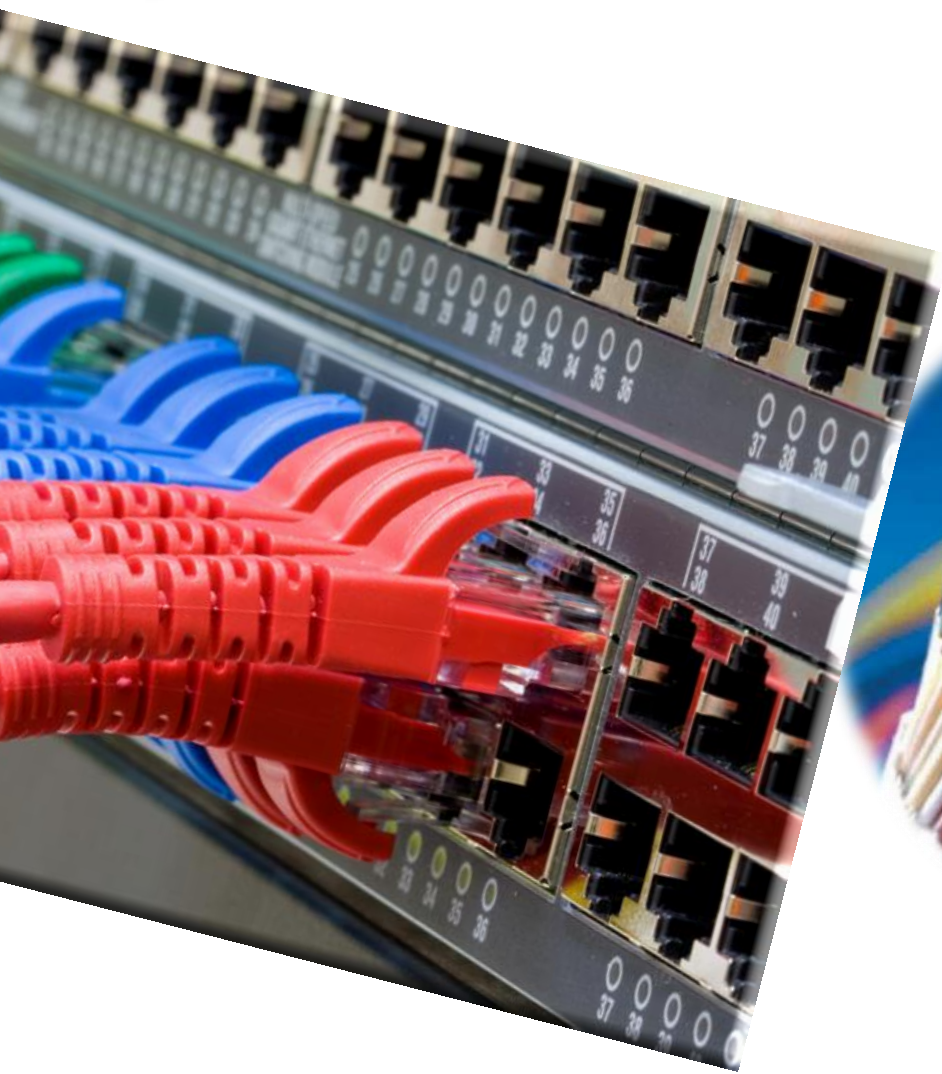




Case study on deployment of RouterOS products in Africa

MUM Kenya January 30, 2018

By: Michael Omondi

Name: Michael Omondi

Preferred Name: **Mike**

10+ years in the IT industry.

Introduced to Mikrotik in 2014

Areas of interest:

- ✓ISP Solutions
- ✓Wireless Services
- ✓Network Security

Certifications

- ✓Mikrotik:- MTCNA, MTCRE, MTCWE, MTCTCE & MTCINE
- ✓Other Vendors:- Cisco, CompTIA, Vmware, Solarwinds, Ubiquiti, Cyberoam

Who Are We?

We are an IT company

- Training
- Consultancy
- Design, deployment and management of computer networks
- Server deployment and management
- Cloud services (storage, backup & archiving, web & application hosting etc.), Data Center Virtualization and many more.

Provide insight into challenges
facing Network operators in the
African continent and how MikroTik
RouterOS is the solution

- **Network operators** (*ISPs, WISPs, large corporates, SMEs and SOHOs*) **in their quest to build robust, scalable, efficient and secure data networks face a myriad of challenges in the continent.**

- **Having traveled to 13 countries in the continent and interacted with operators at various levels, I would like to explore these challenges and suggest solutions based on MikroTik product offering.**

Challenge No.1

- **Total Cost of ownership of network equipment and software.**

This entails;

a) Acquisition

b) Operational expenses e.g licensing, power consumption etc.



- **MikroTik RouterBoard/RouterOS are the most graciously priced enterprise grade products in the market.**

- At the apex of their offering is the CCR1072-1G-8S+, a multicore processor router with a whooping 16GB RAM, 8x10G interfaces at a paltry \$3,050.

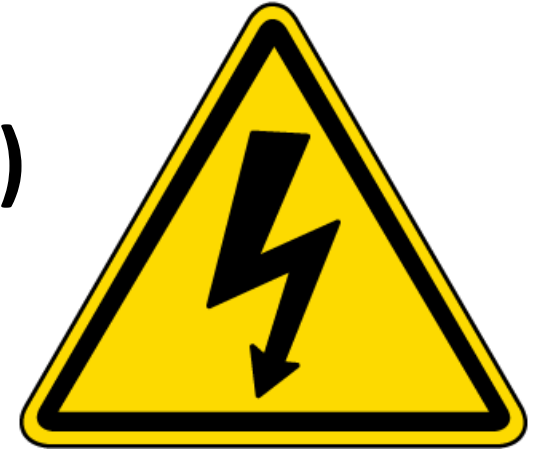


Solution No.1...

Level number	0 (Trial mode)	1 (Free Demo)	3 (WISP CPE)	4 (WISP)	5 (WISP)	6 (Controller)
Price	no key	registration required	volume only	\$45	\$95	\$250
Initial Config Support	-	-	-	15 days	30 days	30 days
Wireless AP	24h trial	-	-	yes	yes	yes
Wireless Client and Bridge	24h trial	-	yes	yes	yes	yes
RIP, OSPF, BGP protocols	24h trial	-	yes(*)	yes	yes	yes
EoIP tunnels	24h trial	1	unlimited	unlimited	unlimited	unlimited
PPPoE tunnels	24h trial	1	200	200	500	unlimited
PPTP tunnels	24h trial	1	200	200	500	unlimited
L2TP tunnels	24h trial	1	200	200	500	unlimited
OVPN tunnels	24h trial	1	200	200	unlimited	unlimited
VLAN interfaces	24h trial	1	unlimited	unlimited	unlimited	unlimited
HotSpot active users	24h trial	1	1	200	500	unlimited
RADIUS client	24h trial	-	yes	yes	yes	yes
Queues	24h trial	1	unlimited	unlimited	unlimited	unlimited
Web proxy	24h trial	-	yes	yes	yes	yes
User manager active sessions	24h trial	1	10	20	50	Unlimited
Number of KVM guests	none	1	Unlimited	Unlimited	Unlimited	Unlimited

- The Router ships with RouterOS Level 6 (L6) license
- This is the highest/unlimited (Controller) level software license
- There are no annual subscription fees
- Updates are for life

- This Router is very power efficient as it consumes only 125W.
- It features a Dual AC input (100-240V)



For more information, visit

<https://mikrotik.com/product/CCR1072-1G-8Splus>

- **Network Administration overhead**

Operators are subjected by product vendors to extremely complex user interfaces.

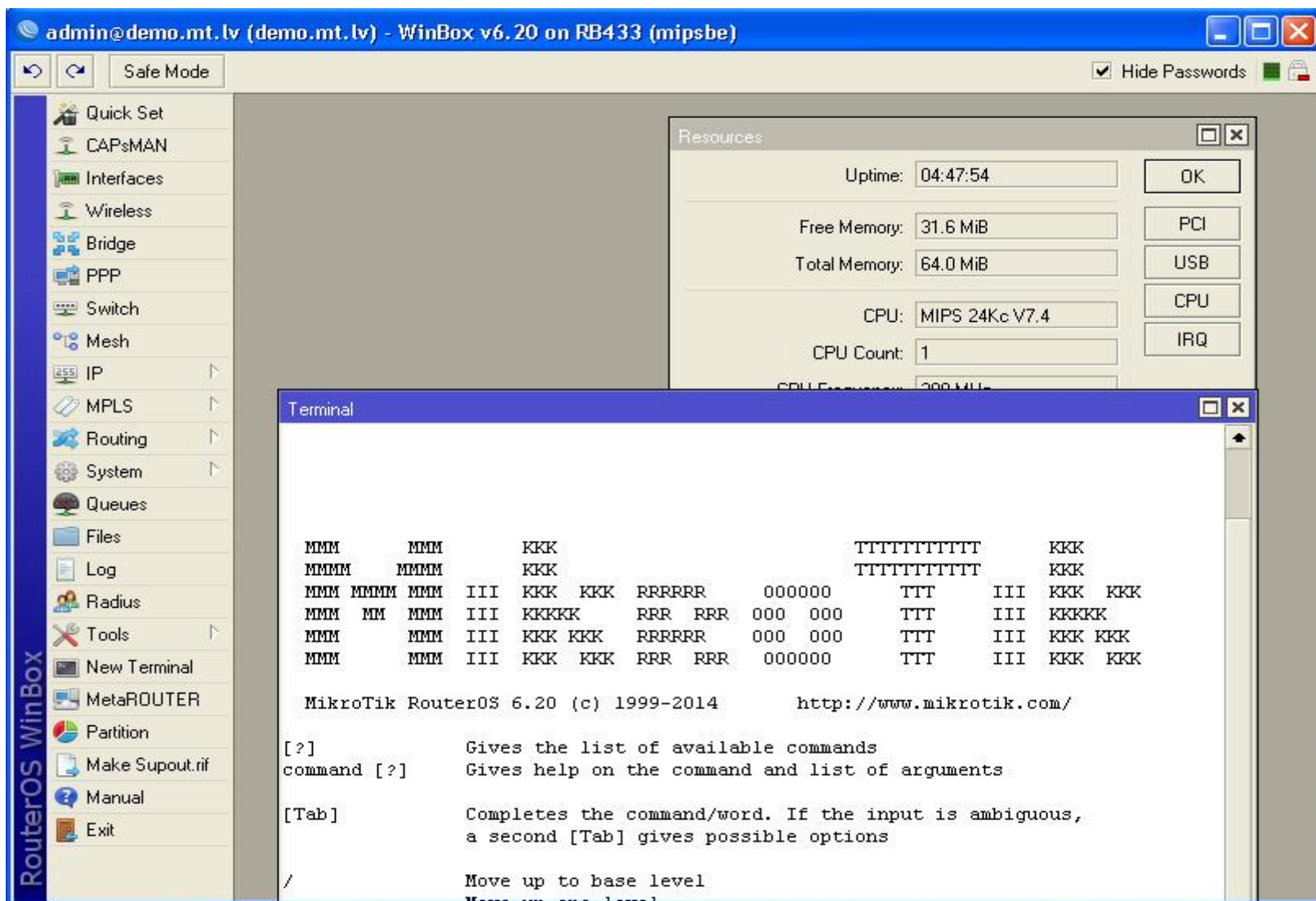
This forces network admins to rely on 3rd party tools to administrate these 'powerful' & sophisticated equipment.



To simplify access to configuration interface, MikroTik offers admins 'WINBOX'

- Winbox is a user-friendly GUI tool
- Creates encrypted connection to devices
- Allows connection on both Layer 2 & 3





- **Distribution Channels**

There are very few distributors & resellers for other vendors' products. Often times operators have to place purchase orders at least four weeks in advance.



- **Distribution Channels (*cont.*)**

Bureaucracy in the distribution chain makes it almost impossible for operators to be fluid.

They cannot provision networks on short notices

- **MikroTik has an extensive distribution network covering at least 27 countries in the African continent.**

These army of distributors and resellers always have products in stock unlike distributors for other vendors who are just speculative resellers.

Some of the distributors in Kenya include:



NETWORK OPTIONS
& SOLUTIONS

- **Network-wide visibility & Monitoring**

Network topology diagrams and documentation form the basis of a well managed and easy to troubleshoot network infrastructure!

- **Network-wide visibility & Monitoring**

Monitoring and alerting systems go along way in enhancing our response to issues thereby reducing downtime.

- **Network-wide visibility & Monitoring**

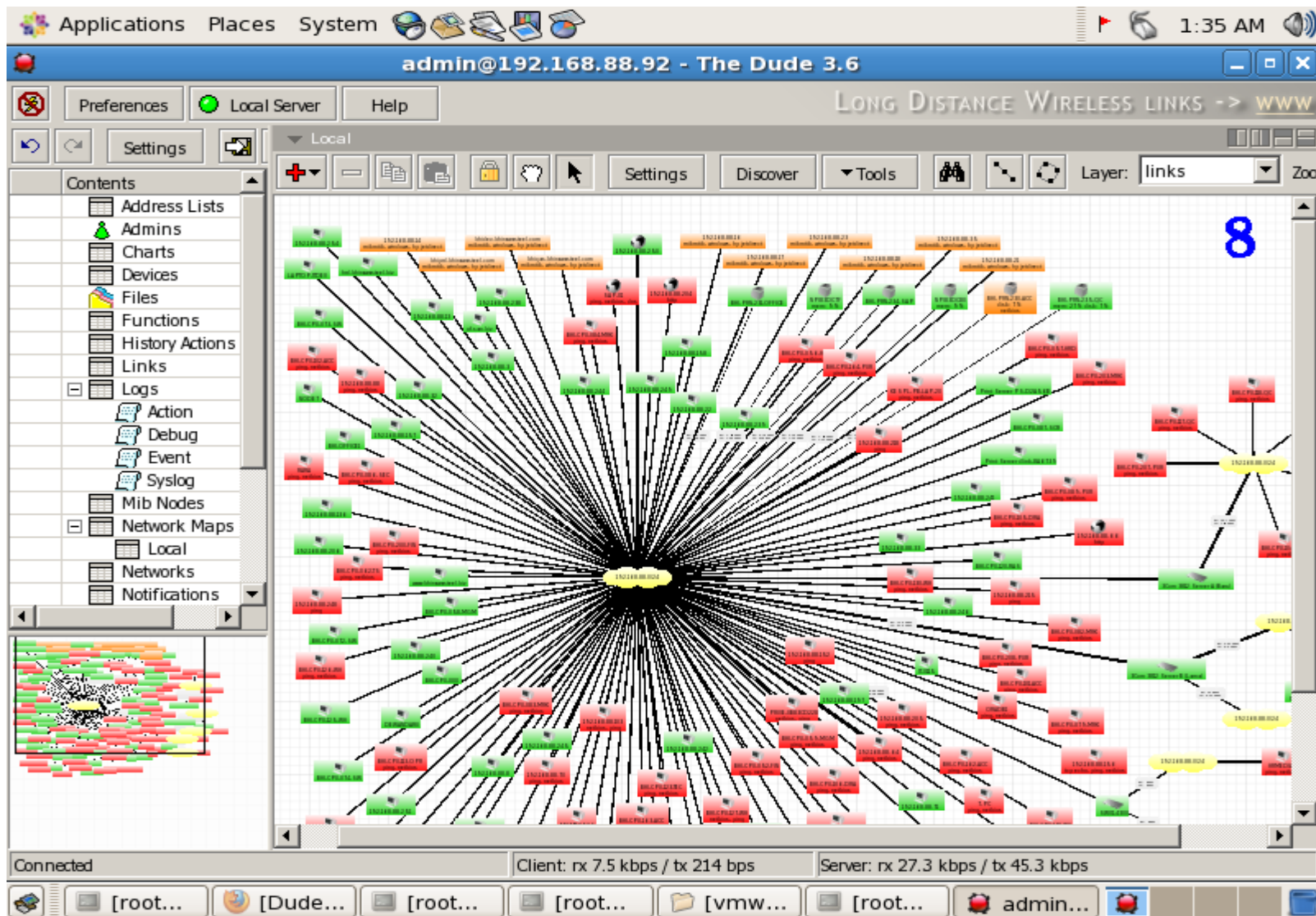
Unfortunately the market is awash with substandard, nonfunctional mapping and monitoring tools as well as overpriced complex solutions

- **MikroTik offers a solution in form of “DUDE”**

Dude is a vendor neutral, easy-to-use network management tool.

It does monitoring and alerting

It does auto-discovery of network topology



**The best part about this 'DUDE' is that it's
absolutely
FREE**



- **Training and Certification**

Training and certification for other vendors' products is shrouded in mystery!

It's intimidating

It's expensive

Shortage of official (authorized) trainers

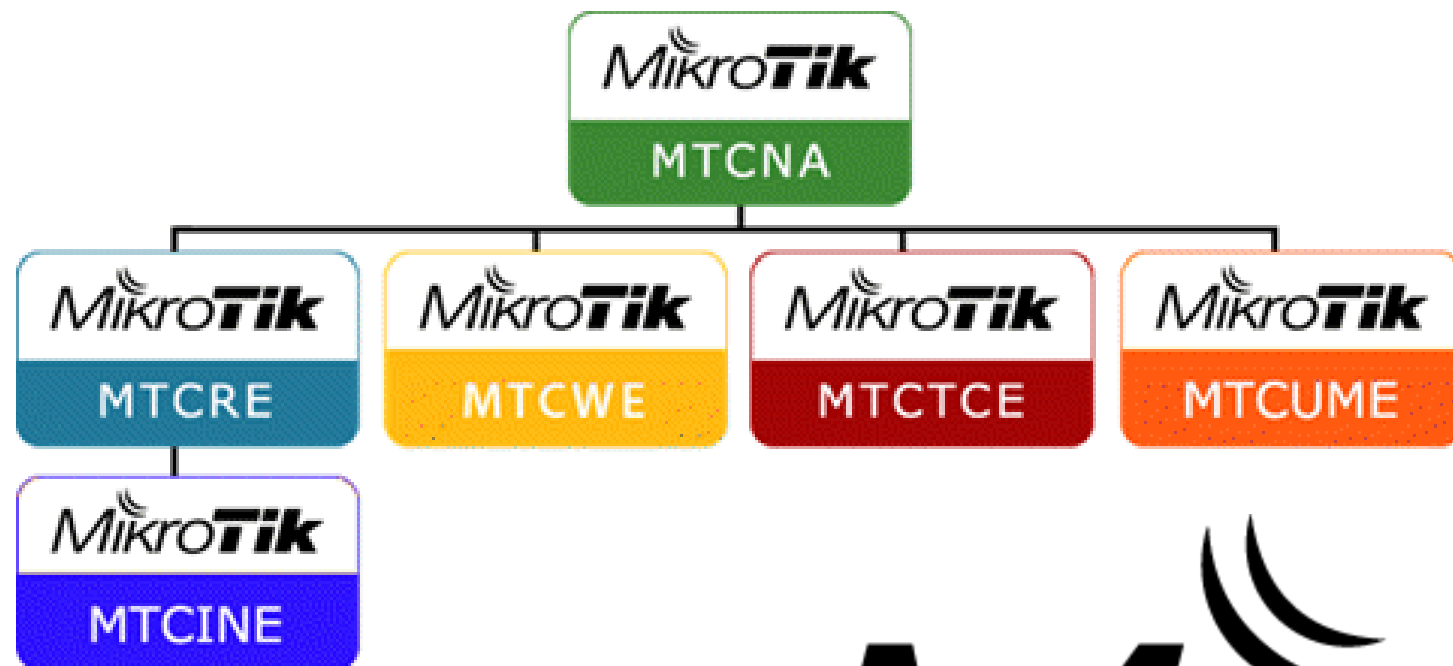
Certificates are not issued promptly upon passing the tests

- **Training and Certification**

Quality assurance standards' bodies often require operators to provide competence certificates of its engineers.

In some cases this is used to determine eligibility of an operator for contracts/tenders

- **MikroTik certification training program is decentralized allowing authorized training partners to offer courses across the globe.**
- **Courses are designed with plenty of LAB activities to enhance learners understanding and overall class experience.**



MikroTik

CERTIFIED TRAINER



- <https://www.mccharlesconsulting.net>

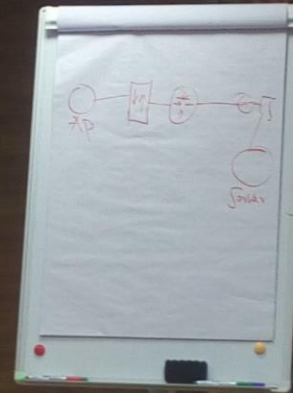
MikroTik
Certified Network Associate
(MTCNA)





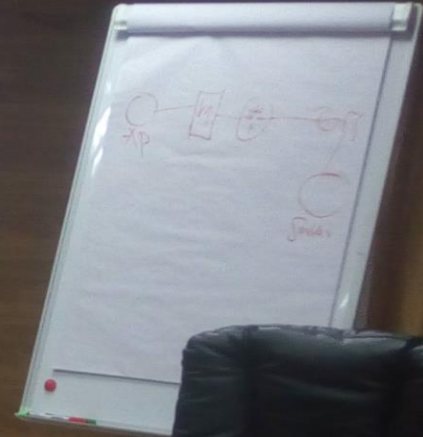
MikroTik

Certified Network Associate
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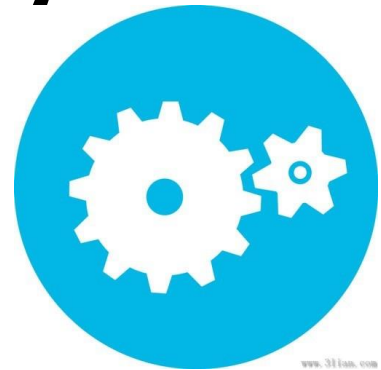


- **Technical Support**

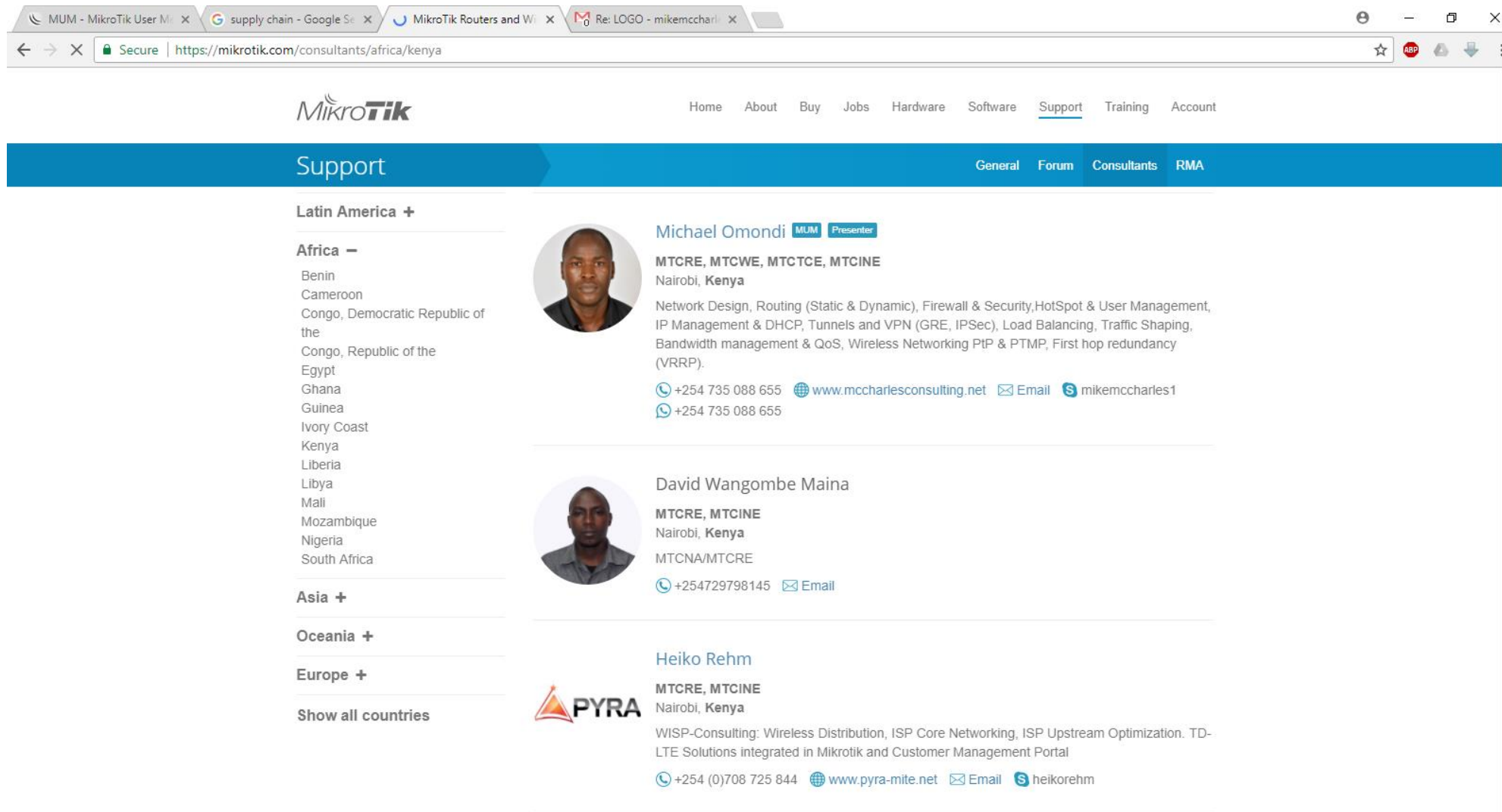
Access to quality, timely & affordable technical support is always one of the major deciding points when acquiring a product.

Majority of vendors either lack capacity to efficiently handle large number of support requests or are too expensive or take forever to respond to support calls.

- **MikroTik are keen on supporting their products to ensure that operators reap the benefits of choosing RouterOS.**
- **There are several avenues where one may obtain support services**



- support@mikrotik.com
- wiki.mikrotik.com,
- forum.mikrotik.com
- mum.mikrotik.com
- mikrotik.com/consultants/africa/kenya



The screenshot shows a web browser window with the URL <https://mikrotik.com/consultants/africa/kenya>. The page features the MikroTik logo and a navigation menu with links: Home, About, Buy, Jobs, Hardware, Software, Support (active), Training, and Account. Below the navigation bar, there's a blue header for the 'Support' section with sub-links: General, Forum, Consultants (active), and RMA. The main content area is titled 'Latin America +' and 'Africa -'. Under 'Africa -', a list of countries is shown: Benin, Cameroon, Congo, Democratic Republic of the, Congo, Republic of the, Egypt, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Libya, Mali, Mozambique, Nigeria, and South Africa. The 'Kenya' section is expanded, showing three consultants: Michael Omondi (MUM, Presenter), David Wangombe Maina, and Heiko Rehm (PYRA). Each consultant's profile includes their name, title, location, a brief description of their services, and contact information (phone, email, and social media links).

MikroTik Home About Buy Jobs Hardware Software Support Training Account

Support General Forum **Consultants** RMA

Latin America +

Africa -

- Benin
- Cameroon
- Congo, Democratic Republic of the
- Congo, Republic of the
- Egypt
- Ghana
- Guinea
- Ivory Coast
- Kenya
- Liberia
- Libya
- Mali
- Mozambique
- Nigeria
- South Africa

Asia +

Oceania +

Europe +

Show all countries

Michael Omondi **MUM** **Presenter**

MTCRE, MTCWE, MTCCTCE, MTCINE
Nairobi, **Kenya**

Network Design, Routing (Static & Dynamic), Firewall & Security, HotSpot & User Management, IP Management & DHCP, Tunnels and VPN (GRE, IPSec), Load Balancing, Traffic Shaping, Bandwidth management & QoS, Wireless Networking P2P & PTMP, First hop redundancy (VRRP).

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WISP-Consulting: Wireless Distribution, ISP Core Networking, ISP Upstream Optimization. TD-LTE Solutions integrated in Mikrotik and Customer Management Portal

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Conclusion

- **Network operators across the continent are embracing change, lowering their operation costs and overheads by taking advantage of MikroTik's broad range of product.**

Below are some of the companies enjoying..

1. Mawingu Networks – Nanyuki, Kenya
2. Castor Networks – Juba, South Sudan
3. Habari Node – Arusha, Tanzania
4. Microteck – Gaborone, Botswana
5. Uyanzi Telecom – Blantyre, Malawi
6. RCS Communication – Juba, South Sudan
7. Axiom Networks – Kigali, Rwanda
8. SpiderNet – Bujumbura, Burundi
9. Somtel – Mogadishu, Somalia
10. Samaritan's Purse – Kenya, South Sudan, DRC
11. AMPHATH – Eldoret, Kenya

Talk to us!



+254 735 088 655

The END!

*Thank you for
listening*