



*Mikro***Tik**

About Mikrotik

- MikroTik is a Latvian company, located in Riga.
- Founded in 1996 to develop routers and wireless ISP systems.
- MikroTik now provides hardware and software for Internet connectivity in most of the countries around the world.



MikroTik OS

- MikroTik RouterOS is the operating system of MikroTik RouterBOARD hardware.
- It is Linux based and can also be installed on any x86 PC and will turn it into a router and has all necessary features: routing, firewall, wireless access point, hotspot and more.





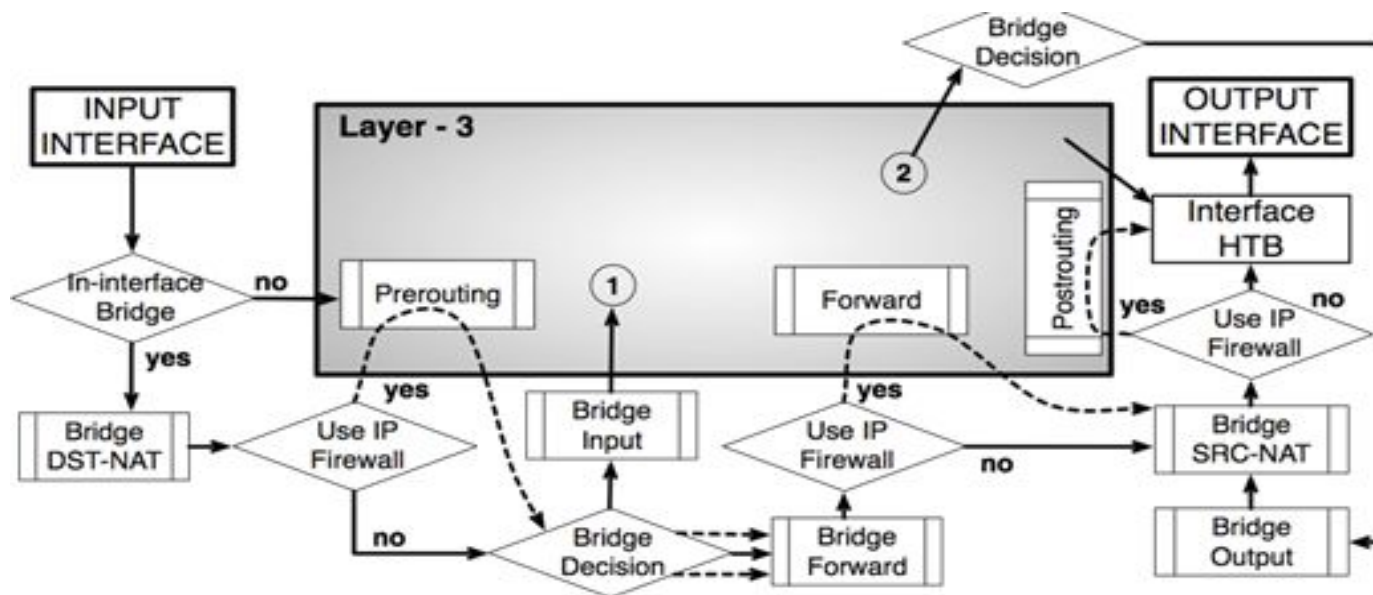
FIREWALL



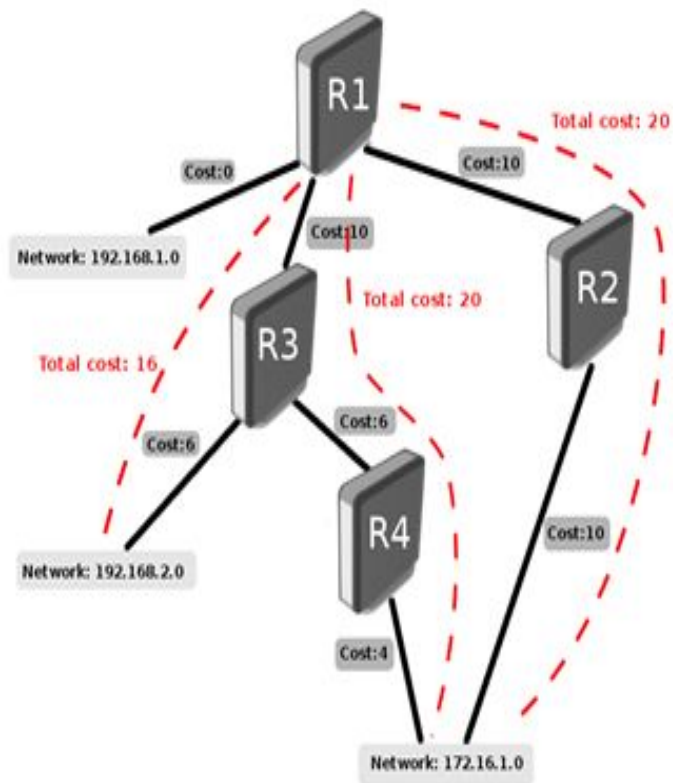
RouterOS features a stateful firewall with internal packet, connection, and route marking based on more than 50 independent properties.

It can filter by IP address, address range, port, port range, IP protocol and other parameters, also supports Static and Dynamic Address Lists, and can even match packets by pattern in their content, specified in Regular Expressions.

The RouterOS Firewall facility also supports IPv4 and IPv6 packets.

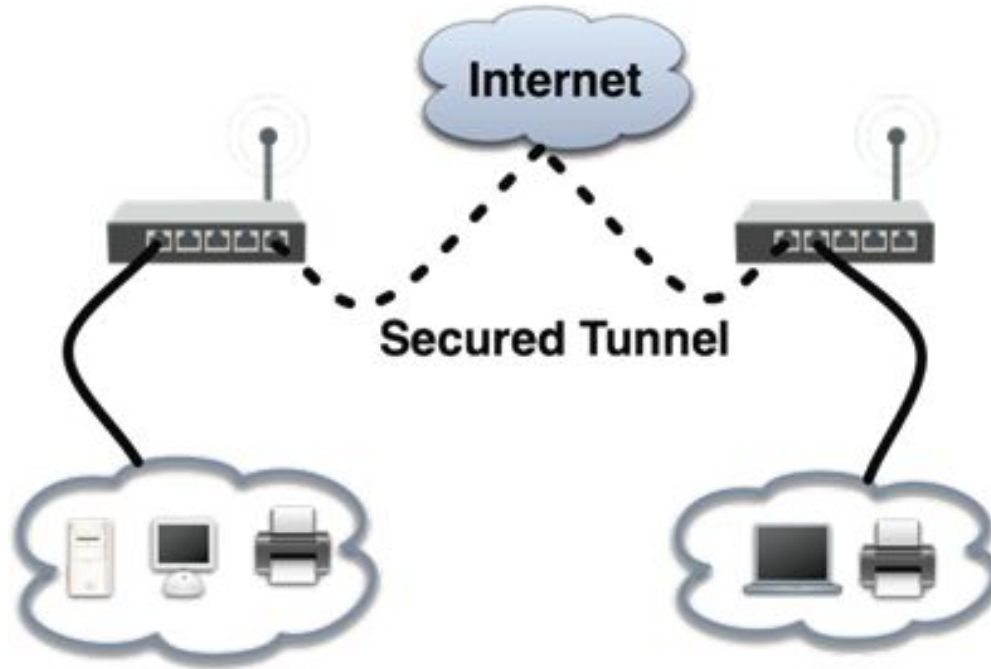


ROUTING



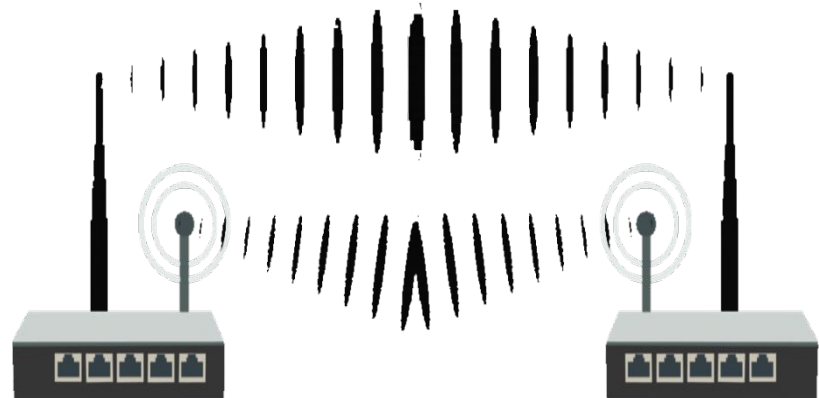
- RouterOS supports static routing and a multitude of dynamic routing protocols.
- RouterOS also supports Virtual Routing and Forwarding (VRF), Policy based routing, Interface based routing and ECMP routing
- You can use the Firewall filter to mark specific connections with Routing marks, and then make the marked traffic use a different ISP.

VPN



RouterOS supports various VPN methods and tunnel protocols

WIRELESS – Point to Point

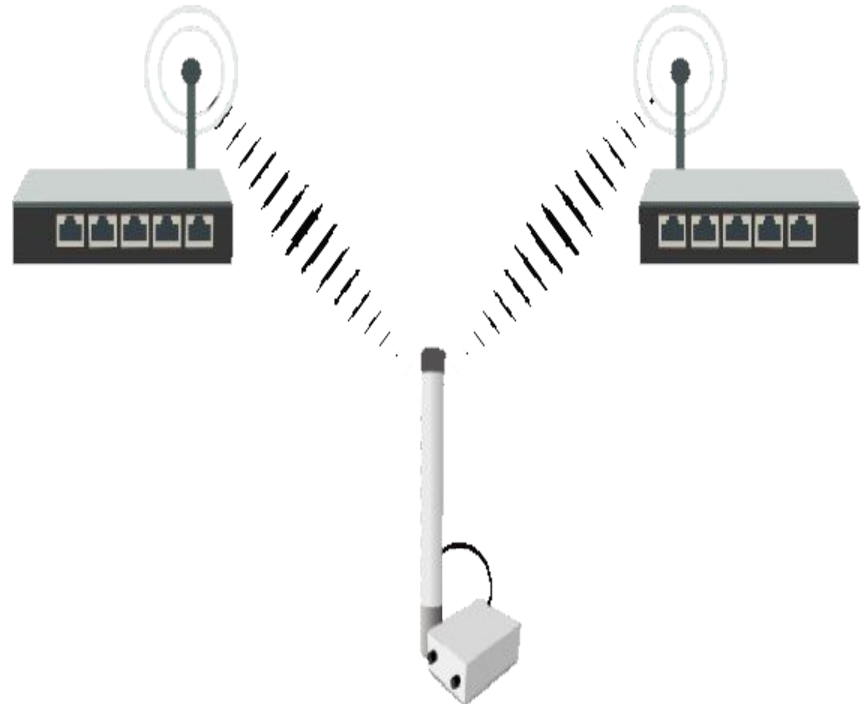


RouterOS also features the NStreme proprietary wireless protocol that allows to extend the connection range and speed, when using MikroTik routers at each end. *This has helped to achieve the current non-amplified wifi link length world record in Italy (304Km). Also supported is NStreme dual which allows to use two antennas at each end, one for receiving and one for sending.*

WIRELESS – Point to Multipoint

A variety of Wireless technologies are supported in RouterOS. Some of the features supported are:

- IEEE802.11a/b/g/n wireless client and access point
- Client polling
- RTS/CTS
- Wireless Distribution System (WDS)
- WEP, WPA, WPA2 encryption
- Access control list
- Wireless client roaming
- HWMP+ Wireless MESH protocol
- MME wireless routing protocol



Mikrotic OS Console Overview

- The console is used for accessing the configuration and management features using
 - text terminals, either remotely using serial port, telnet, SSH or console screen within Winbox, or directly using monitor and keyboard.
- The console is also used for writing scripts. Please consult the Scripting
- Linux Based

```
MMM      MMM      KKK
MMM MMMM  MMM  III KKK  KKK  RRRRRR      000000      TTT      III  KKK  KKK
MMM  MM   MMM  III KKKKK  RRR  RRR  000  000      TTT      III  KKKKK
MMM      MMM  III KKK  KKK  RRRRRR      000  000      TTT      III  KKK  KKK
MMM      MMM  III KKK  KKK  RRR  RRR      000000      TTT      III  KKK  KKK

MikroTik RouterOS 3.10 (c) 1999-2008      http://www.mikrotik.com/

[admin@Petr] > user edit admin password
[admin@Petr] > ip address
[admin@Petr] /ip address> /
[admin@Petr] > ip address
[admin@Petr] /ip address> add
broadcast comment copy-from disabled netmask network address interface
[admin@Petr] /ip address> add address=10.0.0.1/24 interface=ether
ether2 ether3 ether1
```

Mikrotic OS Console Modes

Modes

Console line editor works either in multiline mode or in single line mode. In multiline mode line editor displays complete input line, even if it is longer than single terminal line. Choice of modes depends on detected terminal capabilities. Modes:

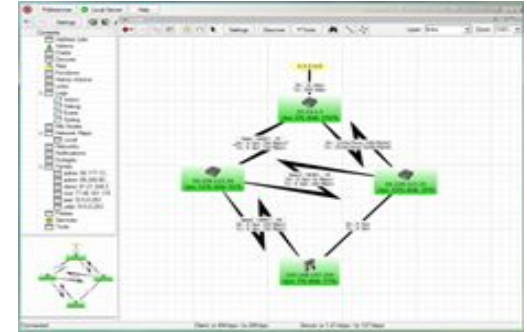
- Safe Mode - It's possible to change router configuration in a way that will make the router inaccessible. Safe mode can be used to minimize such risk.
- HotLock Mode- commands will be auto completed.

HOTSPOT

Built-in walled garden provides a powerful captive portal public access hotspot system with MAC address authentication capabilities and RADIUS server



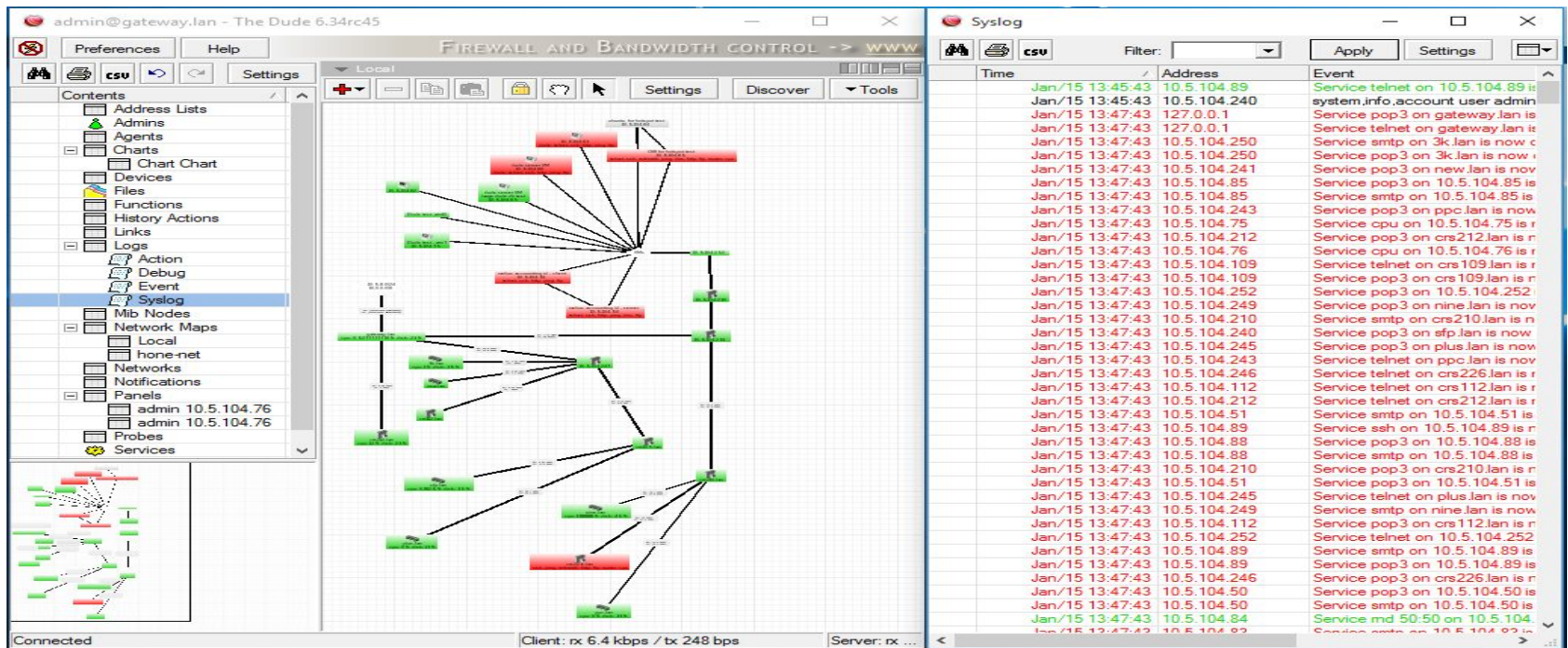
The Dude



- The Dude network monitor is a new application by MikroTik which can dramatically improve the way you manage your network environment.
- It will automatically scan all devices, draw and layout a map of your networks, monitor services of your devices and alert you in case some service has problems.

The Dude

- Not only can you monitor your devices, but you can also manage them.



The Dude: Nomenclature

Panel - Dude window, there can be several Panels open side by side.

Pane - Contents of the open Panel.

- When first opening The Dude, the main pane of the Dude window is occupied by the **device map**. The map shows graphical layout of your network.

Academy

- MikroTik is expanding RouterOS learning possibilities by launching the MikroTik Academy Program.
- The MikroTik Academy Program is for educational institutions such as universities, technical schools, colleges, vocational schools, and other educational institutions.

Academy

- MikroTik training sessions are organized and provided by MikroTik Training Centers at various locations around the World.
- They are attended by network engineers, integrators and managers, who would like to learn about routing and managing wired and wireless networks using MikroTik RouterOS.

Certificates

- **MTCTCE** - MikroTik Certified Traffic Control Engineer
 - **MTCWE** - MikroTik Certified Wireless Engineer
 - **MTCUME** - MikroTik Certified User Management Engineer
 - **MTCIPv6E** - MikroTik Certified IPv6 Engineer
 - **MTCNA** - MikroTik Certified Network Associate
 - **MTCRE** - MikroTik Certified Routing Engineer
- and more.

Certificates



The End

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- *Borislav Mihaylov XIIБ, №4*