

MikroTik, antes e depois

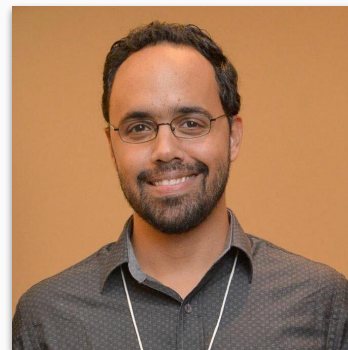
Por Leonardo Rosa, BRAUSER, Brasil



Apresentação

Leonardo Rosa

Baiano, pai de 2 meninos,
mora atualmente em Valinhos, SP.



Tem experiência com FreeBSD, Linux, Cisco, Juniper e MikroTik RouterOS.
Atualmente ministra treinamentos das certificações MikroTik e outros.



Quem é a MikroTik



Quem é a MikroTik

- Fabricante de software e hardware para routers e switches com interface amigável e mundialmente conhecida.
- Ativa no mercado de WISP desde **1995**.
- Fundada em **1996** em Riga, capital da Letônia.
- Desenvolve software para x86 desde **1997** e hardware desde **2002**.
- Promove o MUM ao redor do mundo desde **2006**.

Mais info em [perfil da MikroTik online](#)

QUEM É A MIKROTIK

- Mais de **500** distribuidores e revendas em **145** países.
- Alguns dos grandes clientes da MikroTik:



RouterOS vs SwitchOS

O que é o RouterOS

Sistema multifuncional

- roteamento dedicado
- firewall avançado
- wireless robusto
- controle de tráfego
- túneis e vpn
- muito mais



O que o RouterOS não é

UTM, Anti-DDOS, SD-WAN

- antivírus
- web-cache
- servidor dns
- controle de aplicação



INTERFACES DE GERENCIAMENTO

Winbox

File Tools

Connect To: Keep Password

Login: Autosave Session

Password: Open In New Window

Session:

Note:

Group:

RoMON Agent:

Managed Neighbors

MAC Address	IP Address	Identity	Version	Board	Uptime	

INTERFACES DE GERENCIAMENTO

Winbox

The screenshot displays the Mikrotik WinBox management interface. The top navigation bar includes 'Session', 'Settings', and 'Dashboard'. Below this, there are navigation buttons for 'Safe Mode' and 'Session'. The left sidebar contains a tree view of system components: Quick Set, CAPsMAN, Interfaces, Wireless, Bridge, PPP, Mesh, IP, MPLS, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, LCD, Partition, and Make Supout.rif.

The main content area is divided into three sections:

- User List:** A table with columns 'Name', 'Group', and 'Last Logged'. It lists users: admin (demo), demo (demo), martins (full), root (demo), sergejs (full), and test (demo).
- Log:** A table with columns for date, time, memory usage, and log details. It shows a series of firewall log entries from Nov/19/2018 18:35:05 to 18:35:58, and a final entry at 18:37:02 showing a user login via telnet.
- Terminal:** A terminal window showing firewall rule configurations. The rules include actions like 'drop' for various ports and protocols, and 'accept' for specific services like WinBox, Web, Telnet, and SSH. The terminal prompt is [demo@demo.mt.lv] /ip firewall filter>.

WebFig

← → ↻ 🏠 ⓘ Não seguro | demo.mt.lv/webfig/

RouterOS v6.43.6 (stable)

Interface | Interface List | Ethernet | EoIP Tunnel | IP Tunnel | GRE Tunnel | VLAN | VRRP | Bonding | LTE

Add New ▾ Detect Internet

10 items

		▲ Name	Type	Actual MTU	L2 MTU	Tx	Rx
<input type="checkbox"/>	R	🔌 ether1	Ethernet	1500	1580	142.4 kbps	14.7 kbps
<input type="checkbox"/>		🔌 ether2	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 ether3	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 ether4	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 ether5	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 ether6	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 ether7	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 ether8	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 sfp-sfpplus1	Ethernet	1500	1580	0 bps	0 bps
<input type="checkbox"/>		🔌 sfp-sfpplus2	Ethernet	1500	1580	0 bps	0 bps

Left sidebar menu: CAPsMAN, Wireless, Interfaces, Bridge, PPP, Mesh, IP, ARP, Accounting, Addresses, Cloud, DHCP Client, DHCP Relay, DHCP Server, DNS, Firewall, Hotspot, IPsec, Kid Control

O que é o SwitchOS

Sistema Smart Switch

- recursos de switching
- **sem** recursos de routing
- interface web simplificada



INTERFACE DE GERENCIAMENTO

MikroTik SwOS

Login

Link SFP SFP Status Port Isolation LAG Forwarding RSTP Stats Errors Hist. VLAN VLANs Static Hosts Hosts SNMP ACL System Upgrade

	Enabled	Name	Link Status	Auto Negotiation	Speed	Full Duplex	Flow Control
Port1	<input checked="" type="checkbox"/>	<input type="text" value="Port1"/>	link on	<input checked="" type="checkbox"/>	1G	yes	<input checked="" type="checkbox"/>
Port2	<input checked="" type="checkbox"/>	<input type="text" value="Port2"/>	link on	<input checked="" type="checkbox"/>	1G	yes	<input checked="" type="checkbox"/>
Port3	<input checked="" type="checkbox"/>	<input type="text" value="Port3-computer#1"/>	link on	<input checked="" type="checkbox"/>	1G	yes	<input checked="" type="checkbox"/>
Port4	<input checked="" type="checkbox"/>	<input type="text" value="Port4"/>	no link	<input checked="" type="checkbox"/>		no	<input checked="" type="checkbox"/>
Port5	<input checked="" type="checkbox"/>	<input type="text" value="Port5-computer#2"/>	link on	<input checked="" type="checkbox"/>	100M	yes	<input checked="" type="checkbox"/>
Port6	<input checked="" type="checkbox"/>	<input type="text" value="Port6"/>	link on	<input type="checkbox"/>	10M <input type="button" value="v"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Port7	<input checked="" type="checkbox"/>	<input type="text" value="Port7"/>	no link	<input checked="" type="checkbox"/>		no	<input checked="" type="checkbox"/>
Port8	<input checked="" type="checkbox"/>	<input type="text" value="Port8"/>	no link	<input checked="" type="checkbox"/>		no	<input checked="" type="checkbox"/>
Port9	<input checked="" type="checkbox"/>	<input type="text" value="Port9-NAS"/>	link on	<input checked="" type="checkbox"/>	1G	yes	<input checked="" type="checkbox"/>
Port10	<input checked="" type="checkbox"/>	<input type="text" value="Port10"/>	no link	<input checked="" type="checkbox"/>		no	<input checked="" type="checkbox"/>

INTERFACE DE GERENCIAMENTO

MikroTik SwOS

Logout

[Link](#) [SFP](#) [SFP Status](#) [Port Isolation](#) [LAG](#) [Forwarding](#) [RSTP](#) [Stats](#) [Errors](#) [Hist.](#) [VLAN](#) [VLANs](#) [Static Hosts](#) [Hosts](#) [SNMP](#) [ACL](#) [System](#) [Upgrade](#)

	Port Lock	Lock On First	Mirror Ingress	Mirror Egress	Mirror To	Storm Rate (%)	Limit Unknown Unicast	Ingress Rate
Port1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>
Port10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="text" value="100"/>	<input type="checkbox"/>	<input type="text"/>

INTERFACE DE GERENCIAMENTO

MikroTik SwOS Logout

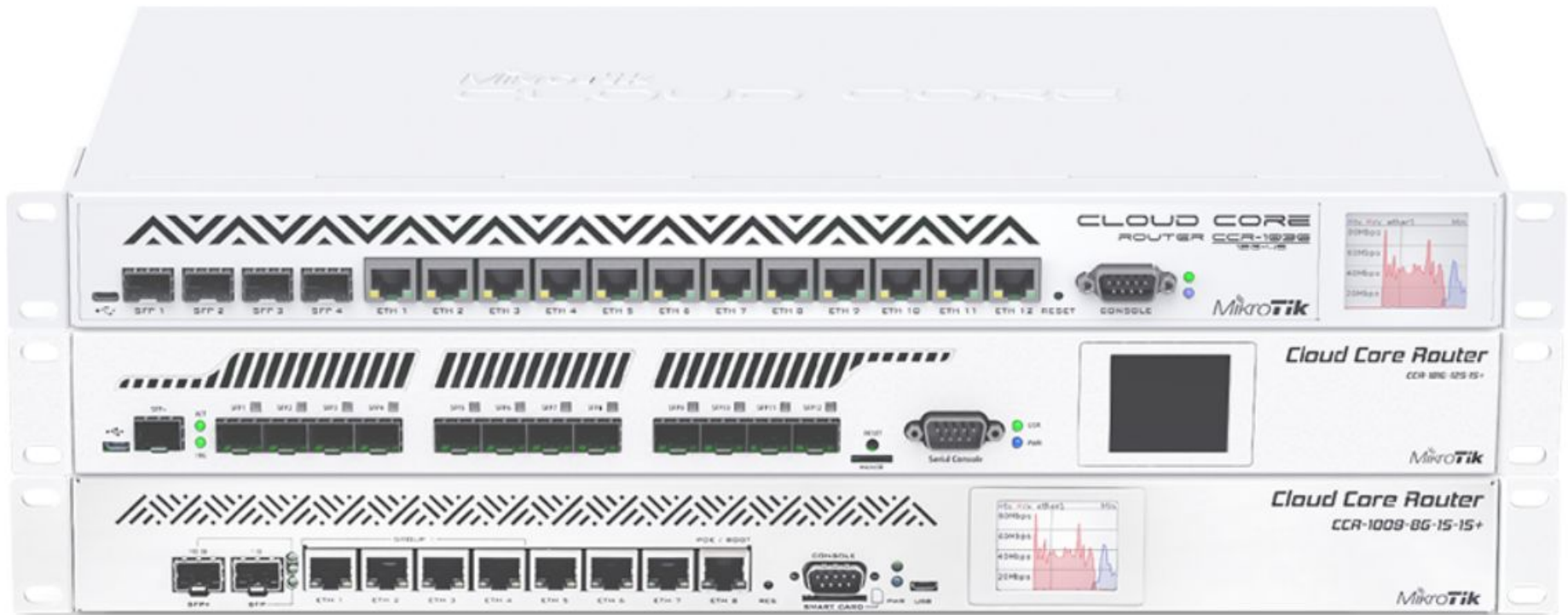
Link SFP SFP Status Port Isolation LAG Forwarding RSTP Stats Errors Hist. VLAN VLANs Static Hosts Hosts SNMP ACL System Upgrade

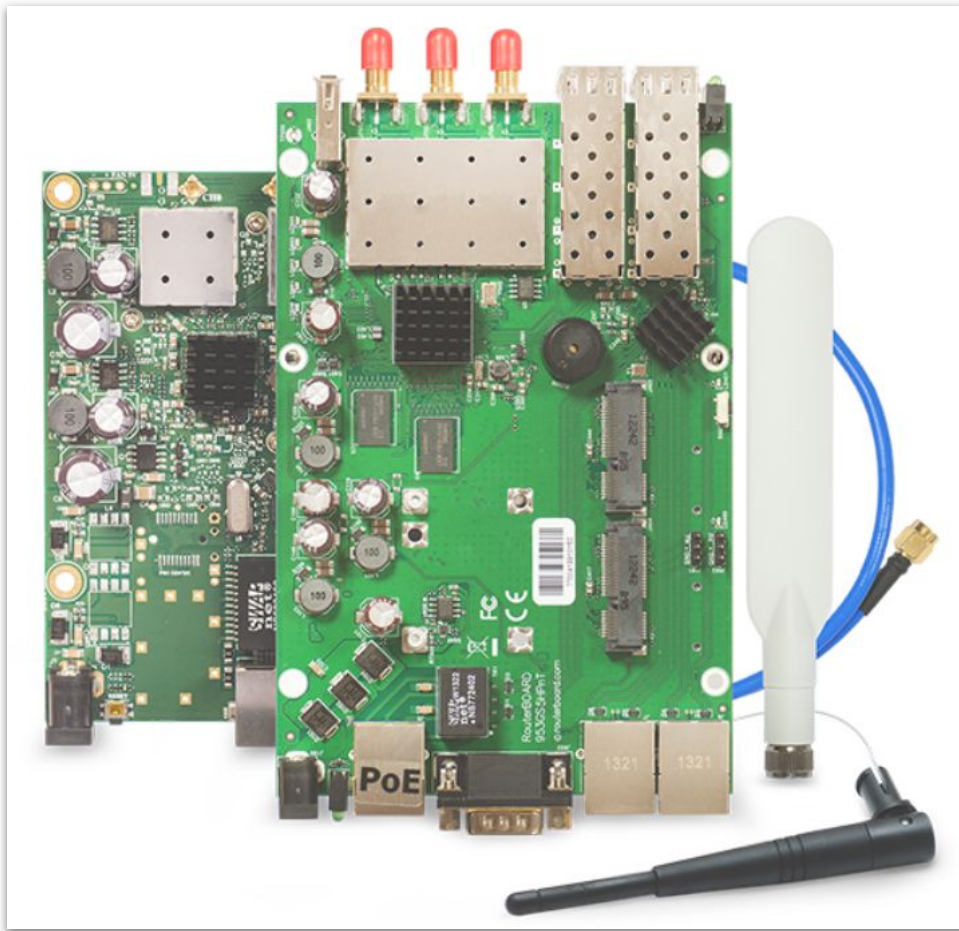
	RSTP	Mode	Role	Root Path Cost	Type	State
SFP1	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP2	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP3	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP4	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP5	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP6	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP7	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP8	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP9	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding
SFP10	<input checked="" type="checkbox"/>	RSTP	designated		point-to-point	discarding

Linhas de Produtos



<https://mikrotik.com/products>





<https://mikrotik.com/products>



hAP mini



hAP ac²

HOME-OFFICE



RB4011iGS+5HacQ2HnD-IN

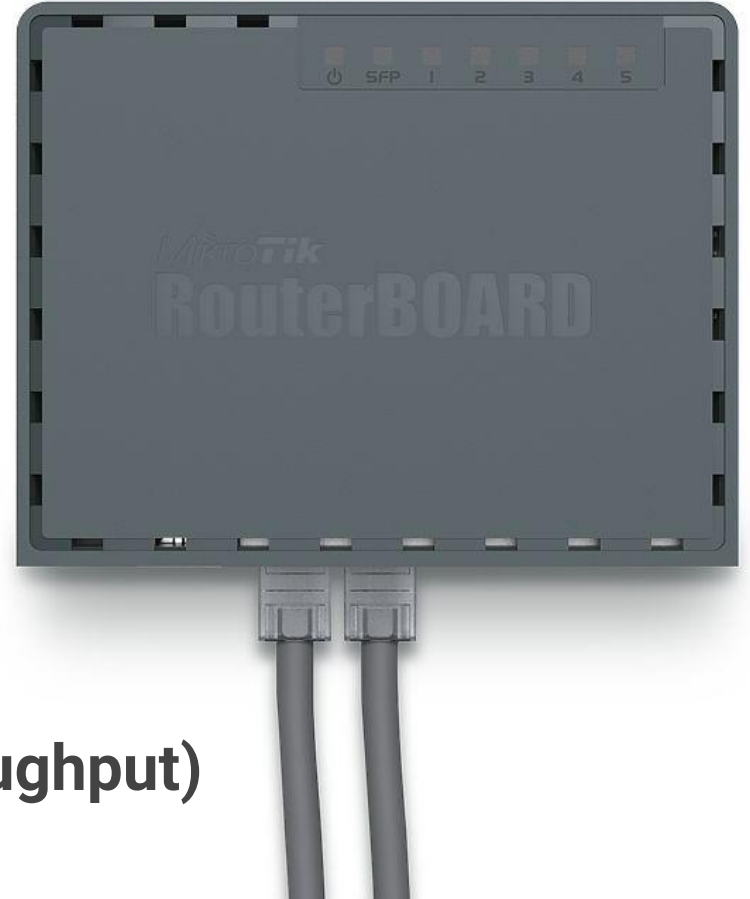
(9,8Gbps throughput)

ETHERNET ROUTERS



hEX S

(470Mbps IPsec throughput)



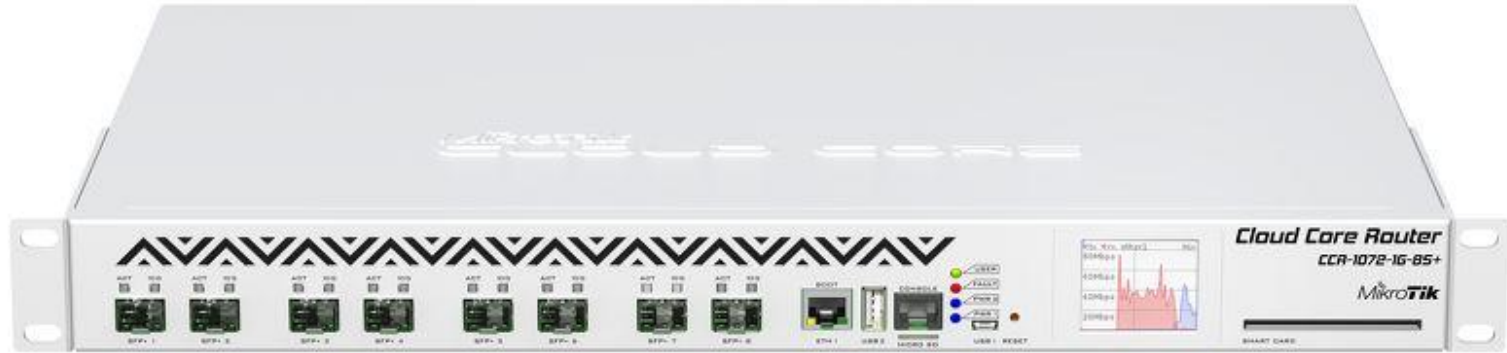
ETHERNET ROUTERS



RB1100AHx4 Dude Edition

(2Gbps IPSec throughput)

ETHERNET ROUTERS



CCR1072-1G-8S+ (80Gbps throughput)

WIRELESS OUTDOOR



mANTBox, SXTsq e LHG

Wireless systems

WIRELESS OUTDOOR



Groove e Metal

Wireless systems

WIRELESS OUTDOOR



Wireless Wire e Wireless Wire Dish
(2Gbps throughput agregado)

Wireless systems

DISTRIBUIDORES E REVENDA MIKROTIK

Latin America —

Argentina
Bolivia
Brazil
Chile
Colombia
Costa Rica
Dominican Republic
Ecuador
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama
Paraguay
Peru
Puerto Rico

OIW Telecom Solutions

Taquari - RS, **Brazil**
Tel: +55 51 3653-6800
[Write an e-mail](#)

Dicomp Distribuidora de Eletrônicos Ltda.

Maringa, **Brazil**
Tel: (44) 4009-2826
[Write an e-mail](#)

IspShop

Goioere-PR, **Brazil**
Tel: +55 44 3838 1030
[Write an e-mail](#)

WDC Networks

São Paulo, **Brazil**
RouterBOARD components
Tel: +55 11 - 3035-3777
[Write an e-mail](#)

MGN Tecnologia

SÃO PAULO, **Brazil**
Tel: 55 11 2976-0305
[Write an e-mail](#)

Comercial Brazil Distribudora

Fortaleza, **Brazil**
Tel: 85 3253.1376
[Write an e-mail](#)

All Networks

Sao Paulo, **Brazil**
Tel: + 55(11)26262512,
+55(11)26263875
[Write an e-mail](#)

Wireless Connect

Campinas-SP, **Brazil**
Tel: +55(19)3395-0819, +55(19)3368-0819
[Write an e-mail](#)

Computech Tecnologia Ltda.

Porto Alegre, **Brazil**
Tel: +55 51 3230-0900
[Write an e-mail](#)

MikroTik App para Android

MIKROTIK APP para Android (TikApp)

MikroTik
v1.0.0

LOG IN **SAVED** **DISCOVER**

Address
192.168.88.1

Username
admin

Password

Keep password

SAVE **CONNECT**

EXIT **hAP ac lite**
Router ID: a952
RouterOS: 6.43.3 (stable)
Model: RB952Ui-5ac2nD

Quick setup
Configure your device in a few simple steps

CPU 7%
Memory 23.9 MiB/64.0 MiB
Uptime 14d 23:05:11

Internet
Available on ether1, ether2
IP: 10.55.8.241, 192.168.88.1, 192.168.88.54

Interface	Download	Upload
ether1	23.4 Kbps	251.0 Kbps
ether2	8.6 Kbps	2.6 Kbps

ether1 Download: 23 kbps Upload: 251 kbps

977 kbps
781 kbps
586 kbps
391 kbps
195 kbps
0 bps

Tx **Rx**

Quick Setup

Quick setup wizard will help you to configure basic settings for your device in a few simple steps.

Please select language and press START to run the wizard or MAIN MENU to cancel the setup and go to the main screen.

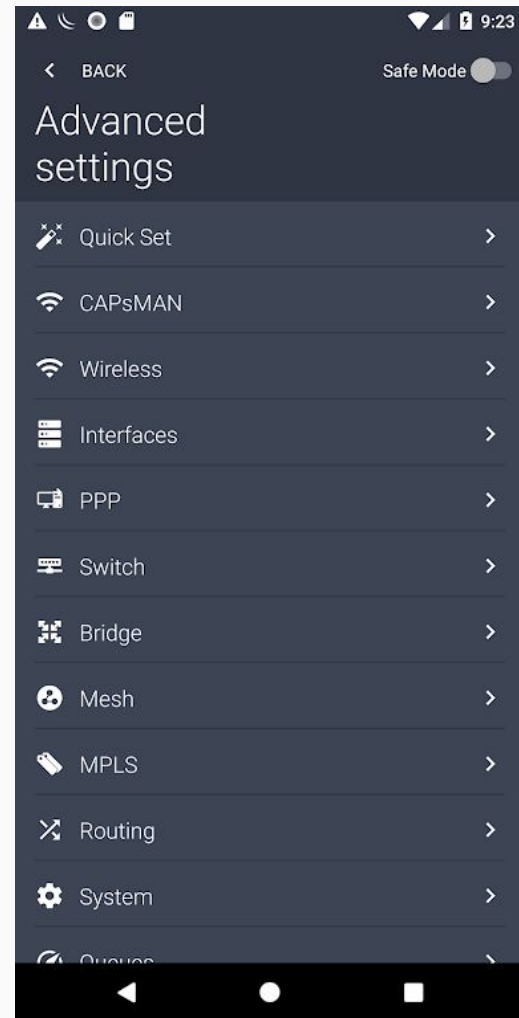
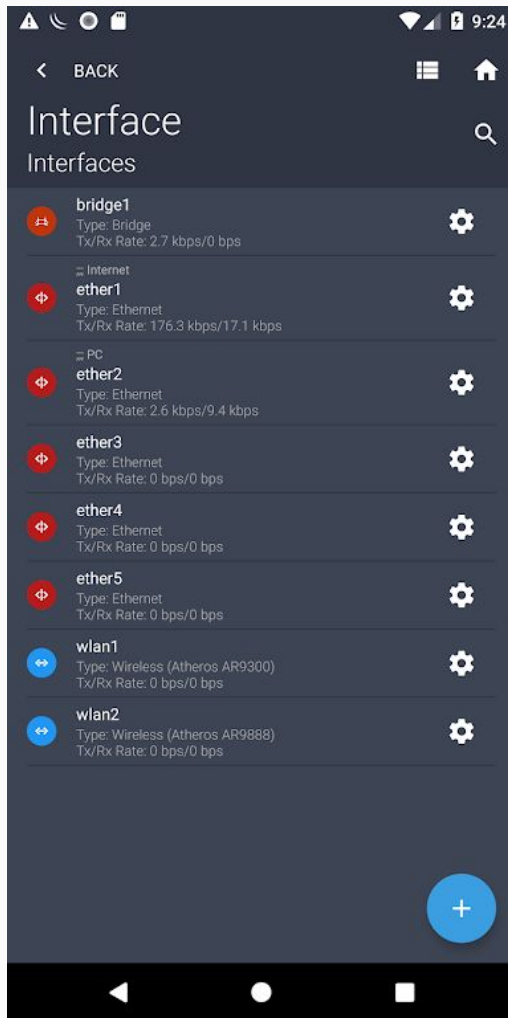
System language
English

Use recommended defaults?

MAIN MENU **START**

[Google Play Store](#)

MIKROTIK APP para Android (TikApp)



Academia MikroTik

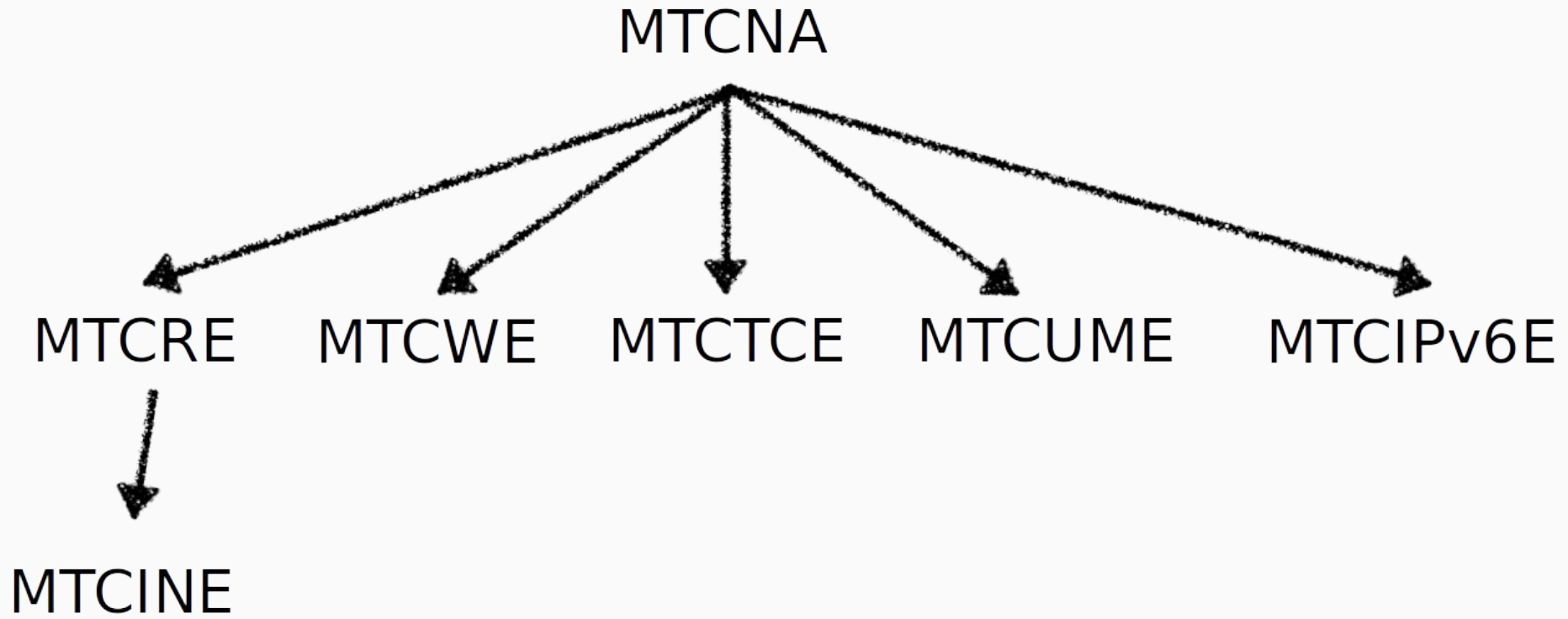


Instituições elegíveis:

- ★ Universidades
- ★ Escolas técnicas
- ★ Colégios de ensino médio
- ★ Outras

Treinamentos MikroTik

GRADE DE CERTIFICAÇÕES



Latin America —

Argentina
Bolivia
Brazil
Chile
Colombia
Costa Rica
Dominican Republic
Ecuador
Mexico
Paraguay
Peru
Puerto Rico
Venezuela

Africa +

Asia +

Oceania +

Europe +

Anderson M. Matozinhos / Alive Solutions

Rating:  5/5 (257 votes)

Average student result: 70%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCINE, MTCIPv6E

Belo Horizonte - MG, **Brazil**

Tel: 55-31-97112-1998

[Write an e-mail](#)

Guilherme Ramires, Alive Solutions

Rating:  4.9/5 (233 votes)

Average student result: 68%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCINE, MTCIPv6E

João Pessoa/PB, Brazil, **Brazil**

Tel: +55 (83) 9119-0832

[Write an e-mail](#)

Leonardo Rosa, BRAUSER

Rating:  4.8/5 (136 votes)

Average student result: 72%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCINE, MTCIPv6E

Campinas, Sao Paulo, **Brazil**

Tel: +55 19 3090 3600 | 19 98166 1728

[Write an e-mail](#)

Francisco Neto, Redes Brasil

Rating:  5/5 (224 votes)

Average student result: 72%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCINE, MTCIPv6E

Goiânia, Goiás, **Brazil**

Tel: +55 62 3275-5786

[Write an e-mail](#)

Eng. Flavio Camacho / GrupoVipnet

Rating:  5/5 (44 votes)

Average student result: 86%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCINE, MTCIPv6E

Duque de Caxias - RJ, **Brazil**

Tel: +55 21 3799-8299 / 97959-2225

[Write an e-mail](#)

Ademir Vida

Rating:  5/5 (16 votes)

Average student result: 74%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCIPv6E

Florianópolis / SC, **Brazil**

Tel: +1 (754) 444-1835

[Write an e-mail](#)

Edielson Pantoja Santana, MyRouter Soluções e Treinamentos

Rating:  5/5 (232 votes)

Average student result: 71%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCINE, MTCIPv6E

Brasilia, **Brazil**

Tel: +55 (61) 98203-6581

[Write an e-mail](#)

Leonardo Vieira, CONTRACT TI

Rating:  4.9/5 (55 votes)

Average student result: 75%

MTCNA, MTCRE, MTCWE, MTCTCE, MTCUME, MTCINE, MTCIPv6E

Belo Horizonte, MG, **Brazil**

Tel: +55 31 3347-0627

[Write an e-mail](#)

João Krieger - Academia MT

Rating:  4.9/5 (92 votes)






















Average student result: 75%

MTCNA, MTCRE, MTCTCE, MTCIPv6E

Florianópolis / SC, **Brazil**

Tel: +55 48 9-9982-8707

[Write an e-mail](#)

2018-11-23	2018-11-25	MTCNA	Brazil, Fortaleza	 BRAUSER Gatre Treinamentos	Portuguese
2018-11-24	2018-11-26	MTCINE	Brazil, Sao Paulo	 Redes Brasil - MTCINE Pós MUM	Portuguese
2018-11-26	2018-11-27	MTCRE	Brazil, Fortaleza	 BRAUSER Gatre Treinamentos	Portuguese
2018-11-27	2018-11-29	MTCRE	Brazil, Florianópolis	 MyRouter Soluções e Treinamentos	Portuguese
2018-11-30	2018-12-02	MTCINE	Brazil, Florianópolis	 MyRouter Soluções e Treinamentos	Portuguese
2018-11-30	2018-12-02	MTCRE	Brazil, Sinop	 Redes Brasil	Portuguese
2018-12-01	2018-12-03	MTCRE	Brazil, Salvador	 BRAUSER F5 Núcleo de Treinamentos	Portuguese
2018-12-06	2018-12-07	MTCRE	Brazil, Manaus	 AmazoniaSat - Sidi Technology & Telecom	Portuguese
2018-12-07	2018-12-09	Introduction, MTCNA	Brazil, Ribeirao Preto	 REDES BRASIL + CONTRACT TI	Portuguese
2018-12-07	2018-12-09	CAPsMAN, MTCWE	Brazil, Belo Horizonte	 Alive Solutions	 Portuguese
2018-12-07	2018-12-09	MTCNA	Brazil, Florianopolis	 ACADEMIA MT	 Portuguese
2018-12-07	2018-12-09	MTCINE	Brazil, Salvador	 BRAUSER F5 Núcleo de Treinamentos	Portuguese
2018-12-07	2018-12-09	Introduction, MTCNA	Brazil, Alagoinhas	 Redes Brasil e Argo Consultoria	Portuguese
2018-12-08	2018-12-10	MTCINE	Brazil, Manaus	 MyRouter Soluções / Redes Brasil	 Portuguese
2018-12-10	2018-12-12	MTCRE	Brazil, Ribeirao Preto	 CONTRACT TI + Redes Brasil	Portuguese
2018-12-10	2018-12-11	MTCTCE	Brazil, Florianopolis	 ACADEMIA MT	 Portuguese
2018-12-10	2018-12-12	MTCRE	Brazil, Alagoinhas	 Redes Brasil e Argo Consultoria	Portuguese
2018-12-14	2018-12-16	Introduction, MTCNA	Brazil, Belo Horizonte	 CONTRACT TI	Portuguese

Consultores MikroTik



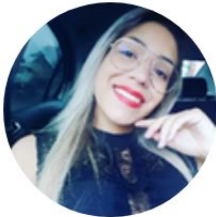
Leonardo C. Rosa MUM Presenter

MTCRE, MTCWE, MTCTCE, MTCIPv6E, MTCINE

Valinhos, Sao Paulo, **Brazil**

Consultor desde 2006 e instrutor oficial desde 2012 com experiência em Inter-networking, Segurança e Qualidade na área de TIC. Especialista em BGP, Firewall, IPv6 e QoS. *English*
Consultant since 2006 and official trainer since 2012 with experience on Inter-networking, Security and Quality in ICT. Specialist on BGP, Firewall, IPv6 and QoS.

+55 (19) 9 8166 1728 Email leonardoroza +5519981661728



Hemily Alves Lima MUM

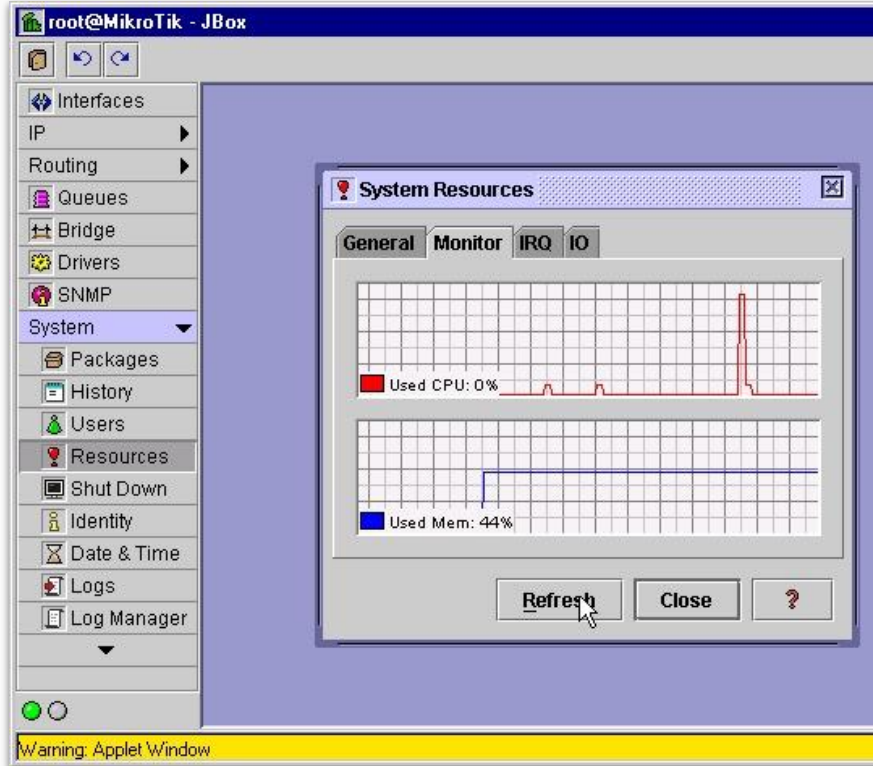
MTCRE, MTCIPv6E

Alexânia, Goiás, **Brazil**

Expert: Wireless networks, Advanced Routing(RIP, OSPF, BGP, MPLS,VPLS), Firewall, Security, HotSpot, PPPoE, Tunnels (EOIP) and VPN, Bonding, Load balancing, Monitoring SNMP, User Manager Integration, Authentication and Accounting with Radius, failover, Bandwidth management and queues, QoS, Caching and webproxy, Dude, Assistance support, Bridge and Filter Bridge, Other advanced configurations

61981033834 www.facebook.com Email

Uma breve história no tempo



- 1997 → Primeiro RouterOS
- 1999 → RouterOS v2
- 2008 → RouterOS v3
- 2009 → RouterOS v4
- 2011 → RouterOS v5
- 2013 → RouterOS v6

Connect ...

Login

Password:

Keep Password

Secure Mode

Load Previous Session

Note:

Address	User	Note

MAC Address	IP Address	Identity	Version	Board Name
08:00:27:4D:C4:0C	0.0.0.0	MikroTik	4.17	x86
08:00:27:90:33:B1	0.0.0.0	MikroTik	2.9.51	
08:00:27:A4:E2:2D	0.0.0.0	MikroTik	3.30	x86
08:00:27:C8:14:67	0.0.0.0	MikroTik	5.26	x86

- 1997 → Primeiro RouterOS
- **1999 → RouterOS v2**
- 2008 → RouterOS v3
- 2009 → RouterOS v4
- 2011 → RouterOS v5
- 2013 → RouterOS v6

1999 → RouterOS v2

Welcome to MikroTik Router Software installation

Move around menu using 'p' and 'n' or arrow keys, select with 'spacebar'.
Select all with 'a', minimum with 'm'. Press 'i' to install locally or 'r' to
install remote router or 'q' to cancel and reboot.

<input checked="" type="checkbox"/> system	<input type="checkbox"/> lcd	<input checked="" type="checkbox"/> telephony
<input checked="" type="checkbox"/> ppp	<input type="checkbox"/> ntp	<input type="checkbox"/> ups
<input checked="" type="checkbox"/> dhcp	<input type="checkbox"/> radiolan	<input type="checkbox"/> user-manager
<input checked="" type="checkbox"/> advanced-tools	<input type="checkbox"/> routerboard	<input checked="" type="checkbox"/> web-proxy
<input type="checkbox"/> arlan	<input checked="" type="checkbox"/> routing	<input checked="" type="checkbox"/> webproxy-test
<input type="checkbox"/> calea	<input checked="" type="checkbox"/> routing-test	<input type="checkbox"/> wireless
<input type="checkbox"/> gps	<input type="checkbox"/> rstp-bridge-test	<input type="checkbox"/> wireless-crd
<input checked="" type="checkbox"/> hotspot	<input type="checkbox"/> security	<input type="checkbox"/> wireless-legacy
<input type="checkbox"/> isdn	<input type="checkbox"/> synchronous	

telephony (depends on system):
Telephony H.323 package

1999 → RouterOS v2

The screenshot displays the WinBox interface for RouterOS v2. On the left is a vertical sidebar with a blue 'WinBox' label and a list of system components: Interfaces, Bridge, PPP, IP, Routing, Ports, Queues, Drivers, System, Files, Log, SNMP, Users, Radius, Tools, New Terminal, Telnet, Password, Certificate, and Make Supout.rif. The main window is divided into several panes. The top pane is titled 'Web Proxy' and has tabs for 'Access', 'Cache', and 'Direct'. Below these are control buttons: a plus sign, a minus sign, a checkmark, a cross, a folder icon, and a 'Settings' button. A table shows the proxy rules:

#	Src. Address	Dst. Address	Dst. Port
1	::: block telnet & spam e-mail relaying		
2	0.0.0.0/0	0.0.0.0/0	23-25

The 'Package List' pane below shows a table of installed packages:

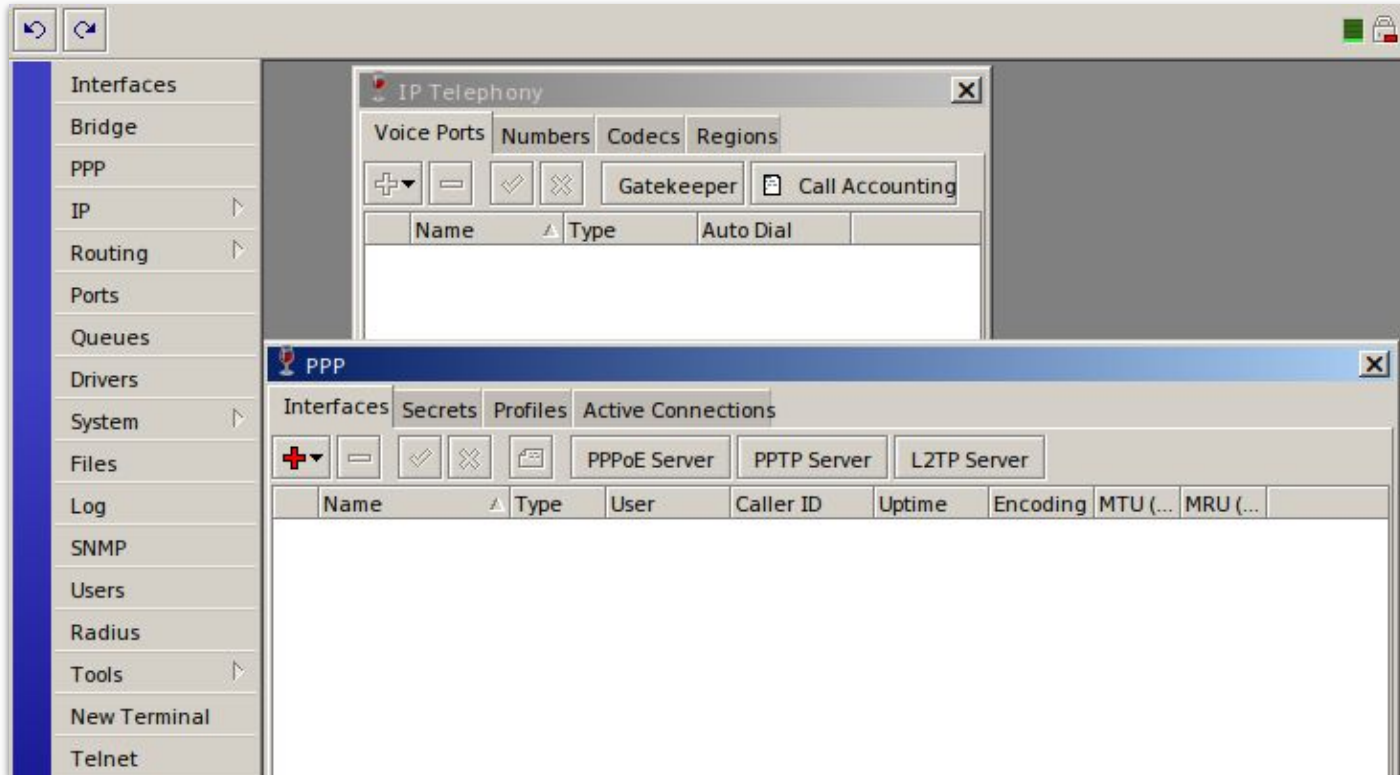
Enable	Disable	Uninstall	Unschedule	Down	Name	Version	Build Time
					advanced-tool	2.9.51	Feb/20/2008 17:53:50
					dhcp	2.9.51	Feb/20/2008 17:53:55
					hotspot	2.9.51	Feb/20/2008 17:54:02
					ppp	2.9.51	Feb/20/2008 17:53:58
X					routing	2.9.51	Feb/20/2008 17:53:59
					routing-test	2.9.51	Feb/20/2008 17:54:25
					system	2.9.51	Feb/20/2008 17:53:43
					telephony	2.9.51	Feb/20/2008 17:54:33
					web-proxy	2.9.51	Feb/20/2008 17:54:35
X					webproxy-test	2.9.51	Feb/20/2008 17:54:26

The 'Web Proxy Settings' dialog box is open, showing the 'General' tab. It contains the following fields and options:

- Src. Address: [empty]
- Port: 3128
- Hostname: proxy
- Transparent Proxy:
- Parent Proxy: [empty]
- Parent Proxy Port: [empty]
- Cache Administrator: webmaster
- Maximum Object Size: 4096 KIE
- Cache Drive: system
- Maximum Cache Size: none KIE
- Maximum RAM Cache Size: unlimited KIE

At the bottom of the dialog, the status is shown as 'disabled' and 'stopped'. On the right side of the dialog are buttons for 'OK', 'Cancel', 'Apply', 'Enable', 'Clear Cache', 'Format Drive', and 'Check Drive'.

1999 → RouterOS v2



Welcome to MikroTik Router Software installation

Move around menu using 'p' and 'n' or arrow keys, select with 'spacebar'.
Select all with 'a', minimum with 'm'. Press 'i' to install locally or 'q' to
cancel and reboot.

<input checked="" type="checkbox"/> system	<input type="checkbox"/> isdn	<input checked="" type="checkbox"/> routing-test
<input checked="" type="checkbox"/> ppp	<input checked="" type="checkbox"/> kvm	<input type="checkbox"/> security
<input type="checkbox"/> dhcp	<input type="checkbox"/> lcd	<input type="checkbox"/> stpbridge-legacy
<input type="checkbox"/> advanced-tools	<input checked="" type="checkbox"/> mpls-test	<input type="checkbox"/> synchronous
<input type="checkbox"/> arlan	<input checked="" type="checkbox"/> multicast	<input type="checkbox"/> ups
<input type="checkbox"/> calea	<input type="checkbox"/> ntp	<input type="checkbox"/> user-manager
<input type="checkbox"/> gps	<input type="checkbox"/> radiolan	<input type="checkbox"/> wireless
<input type="checkbox"/> hotspot	<input type="checkbox"/> routerboard	<input type="checkbox"/> wireless-test
<input checked="" type="checkbox"/> ipv6	<input checked="" type="checkbox"/> routing	<input checked="" type="checkbox"/> xen

xen (depends on system):
Provides support Xen virtual machines.

2008 → RouterOS v3

The screenshot displays the Mikrotik WinBox v3.30 interface. The main window title is "admin@08:00:27:A4:E2:2D (MikroTik) - WinBox v3.30 on x86 (x86)". The status bar shows "00:02:12", "Memory: 491.1 MiB", "CPU: 0%", and "Hide Passwords" checked. On the left, a vertical sidebar lists various system components: Interfaces, Bridge, Mesh, PPP, IP, IPv6, MPLS, VPLS, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, ISDN Channels, Make Supout.rif, Manual, and Exit. The "Package List" window is open, showing a table of installed packages. The "kvm" package is selected. Below the table, a list of actions is displayed, including "continue", "find", "reboot", "start", "interface", "disable", "get", "reconfigure-routeros-image", "add", "edit", "make-routeros-image", "remove", "comment", "enable", "pause", "set", "console", "export", "print", "shut-down", and "uninstall".

Package List

Name	Version	Build Time	Scheduled
ipv6	3.30	Sep/14/2009 14:21:14	
isdr	3.30	Sep/14/2009 14:23:27	
kvm	3.30	Sep/14/2009 14:23:49	
mpls-test	3.30	Sep/14/2009 14:21:07	
ppp	3.30	Sep/14/2009 14:18:49	
routing-test	3.30	Sep/14/2009 14:20:36	
security	3.30	Sep/14/2009 14:18:26	
synchronous	3.30	Sep/14/2009 14:23:42	
system	3.30	Sep/14/2009 14:18:05	

9 items (1 selected)

```
[admin@MikroTik] > /kvm
..          continue  find          reboot          start
interface  disable  get          reconfigure-routeros-image
add        edit    make-routeros-image  remove
comment    enable  pause       set
console    export  print       shut-down
[admin@MikroTik] > /kvm
```


Welcome to MikroTik Router Software installation

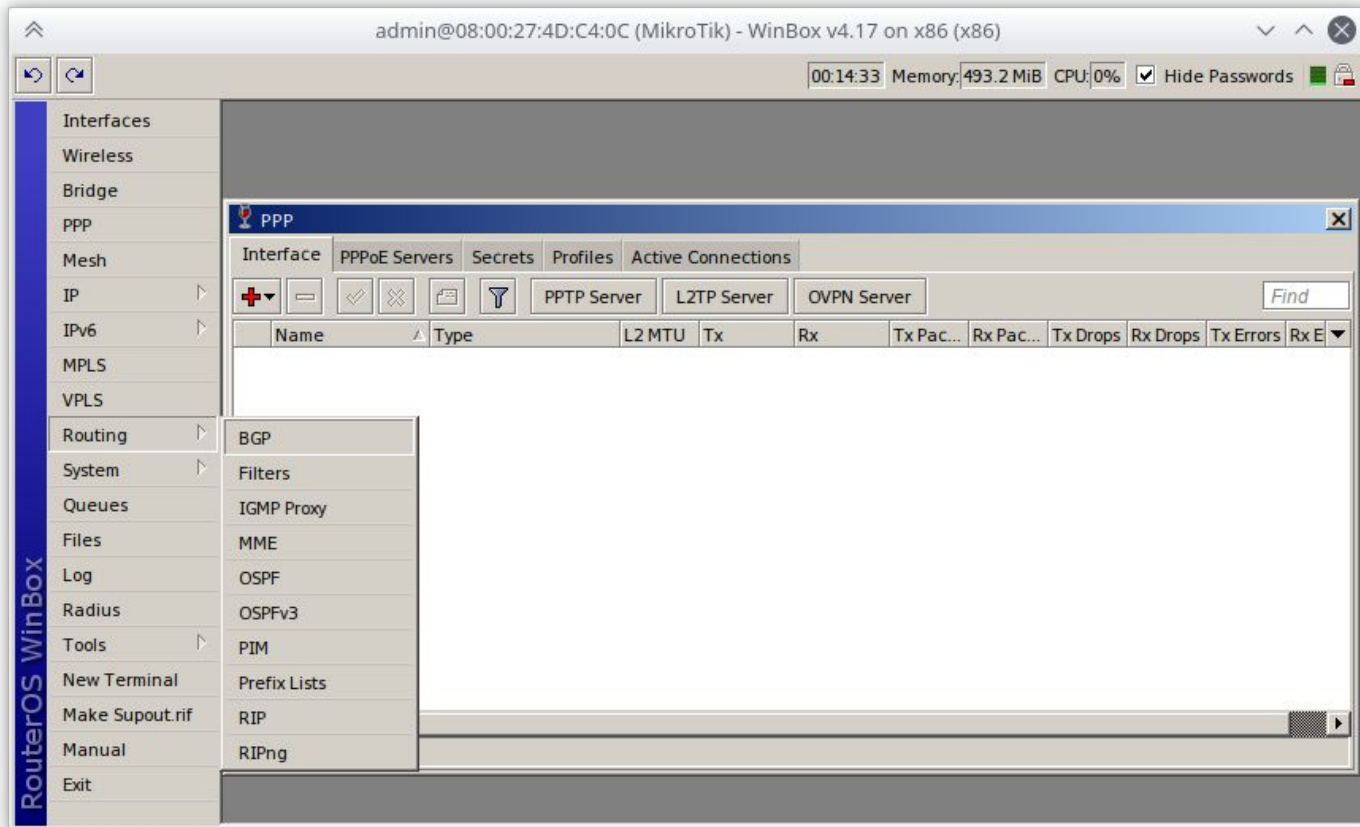
Move around menu using 'p' and 'n' or arrow keys, select with 'spacebar'.
Select all with 'a', minimum with 'm'. Press 'i' to install locally or 'q' to
cancel and reboot.

<input checked="" type="checkbox"/> system	<input checked="" type="checkbox"/> ipv6	<input type="checkbox"/> routerboard
<input checked="" type="checkbox"/> ppp	<input type="checkbox"/> isdn	<input checked="" type="checkbox"/> routing
<input type="checkbox"/> dhcp	<input checked="" type="checkbox"/> kvm	<input checked="" type="checkbox"/> security
<input type="checkbox"/> advanced-tools	<input type="checkbox"/> lcd	<input type="checkbox"/> synchronous
<input type="checkbox"/> arlan	<input checked="" type="checkbox"/> mpls	<input type="checkbox"/> ups
<input type="checkbox"/> calea	<input type="checkbox"/> multicast	<input type="checkbox"/> user-manager
<input type="checkbox"/> gps	<input type="checkbox"/> ntp	<input checked="" type="checkbox"/> wireless
<input type="checkbox"/> hotspot	<input type="checkbox"/> radiolan	<input checked="" type="checkbox"/> wireless-nv2

wireless-nv2 (depends on system):

Provides support for PrismII and Atheros wireless station and AP + NV2.

2009 → RouterOS v4



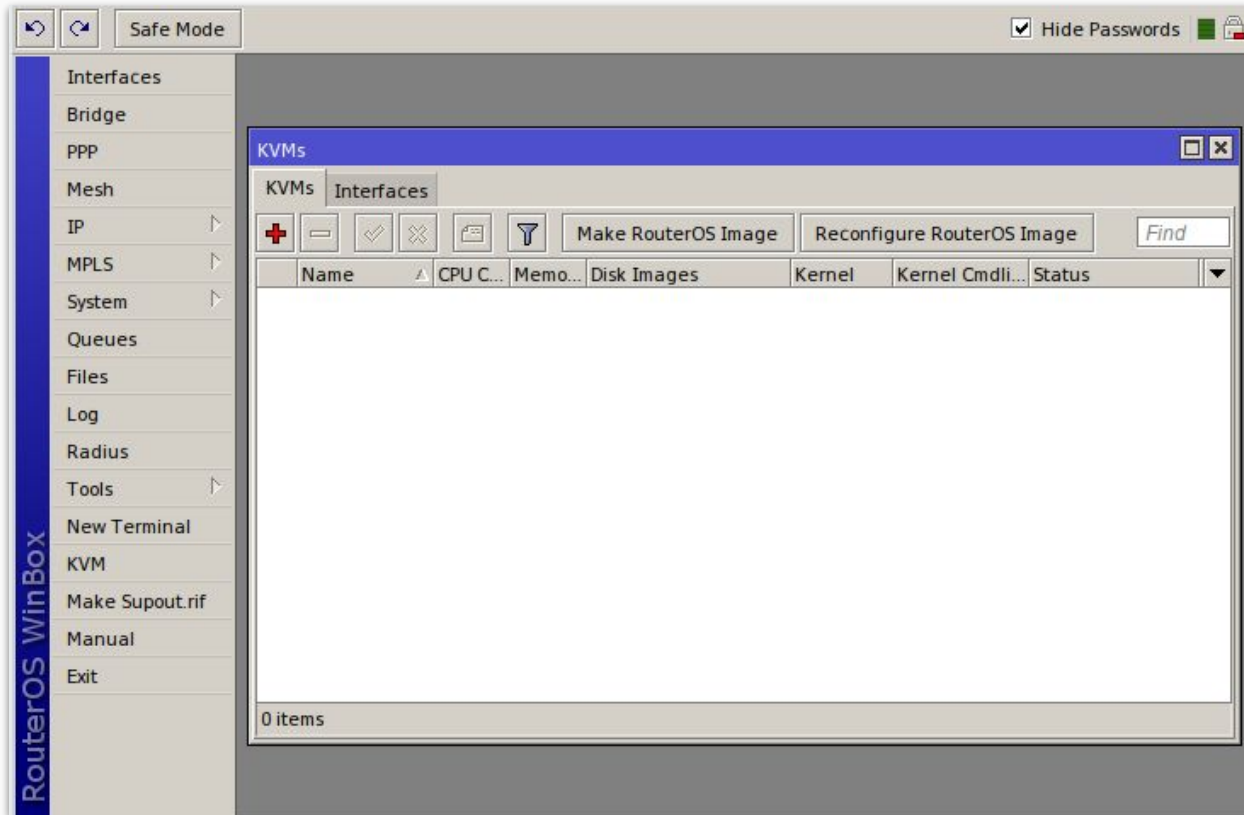
Welcome to MikroTik Router Software installation

Move around menu using 'p' and 'n' or arrow keys, select with 'spacebar'.
Select all with 'a', minimum with 'm'. Press 'i' to install locally or 'q' to
cancel and reboot.

<input checked="" type="checkbox"/> system	<input type="checkbox"/> ipv6	<input type="checkbox"/> routerboard
<input checked="" type="checkbox"/> ppp	<input type="checkbox"/> isdn	<input type="checkbox"/> routing
<input type="checkbox"/> dhcp	<input checked="" type="checkbox"/> kvm	<input type="checkbox"/> security
<input type="checkbox"/> advanced-tools	<input type="checkbox"/> lcd	<input type="checkbox"/> ups
<input type="checkbox"/> callea	<input checked="" type="checkbox"/> mpls	<input type="checkbox"/> user-manager
<input type="checkbox"/> gps	<input type="checkbox"/> multicast	<input type="checkbox"/> wireless
<input type="checkbox"/> hotspot	<input type="checkbox"/> ntp	

kvm (depends on system):
Provides support KVM virtual machines.

2011 → RouterOS v5



2013 → RouterOS v6

Session Settings Dashboard

Safe Mode Session

Time: 19:23:52 Uptime: 00:06:44 CPU: 0%

Kid Control

Kids Devices

Name	MAC Address	User
B celular	00:00:09:00:00:00	filho1
tablet	00:00:00:00:00:01	filho2

2 items

Firewall

Filter Rules NAT Mangle Raw Service Ports Connections Address Lists Layer7 Protocols

#	Action	Chain	Src. Address	Dst. Address	Proto...	Src. Port	Dst. Port	In. Int
---	--------	-------	--------------	--------------	----------	-----------	-----------	---------

0 items

Resources

Uptime	00:06:44	OK
Free Memory	954.0 MiB	PCI
Total Memory	976.5 MiB	USB
CPU: Intel(R)		CPU
CPU Count	2	IRQ
CPU Frequency	2396 MHz	RPS
CPU Load	0 %	Hardware
Free HDD Space	69.6 MiB	
Total HDD Size	95.3 MiB	
Sector Writes Since Rebo	3 000	
Total Sector Write	3 001	
Architecture Nam	x86_64	
Board Name	CHR	
Version	6.42.9 (long-term)	
Build Tim	Sep/27/2018 05:19:48	

v7





Muito obrigado!

Leonardo Rosa

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