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RouterOS

RouterOS Documentation

This webpage contains the official RouterOS user manual. RouterOS is the operating system of MikroTik devices. Documentation applies for the latest stable RouterOS version.

Also available in the documentation in PDF format for offline use (updated monthly).

SwOS Documentation

For RB260, CSS326, CRS3xx, CSS610 and GPEN21 devices running SwOS, see the SwOS user manual.

MikroTik Newsletter

To follow the latest product and software news, make sure to read our newsletters in the blog section.

- **Newsletter section**
- **PDF archive of all newsletters**

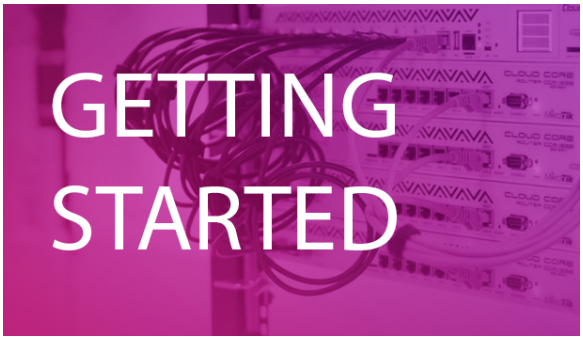
Recently Updated

Configuring outdoor CPE to AP links
yesterday at 10:25 AM • updated by Deniss M. • view change
SMB
yesterday at 7:40 AM • updated by Normunds R. • view change
Neighbor discovery
Jun 20, 2025 • updated by Mārtiņš S. • view change
DHCP
Jun 19, 2025 • updated by Edgars P. • view change
VRRP
Jun 19, 2025 • updated by Edgars P. • view change
Route Selection and Filters
Jun 19, 2025 • updated by Māris B. • view change
WiFi
Jun 18, 2025 • updated by Toms Filatovs • view change
Routing Protocol Overview
Jun 18, 2025 • updated by Māris B. • view change
Container
Jun 18, 2025 • updated by Artūrs Z. • view change
WinBox
Jun 17, 2025 • updated by Mārtiņš S. • view change
Certificates
Jun 17, 2025 • updated by Matīss O. • view change
BGP
Jun 17, 2025 • updated by Māris B. • view change
EVPN
Jun 16, 2025 • updated by Māris B. • view change
Partitions
Jun 13, 2025 • updated by Serhii T. • view change
Chateau S53 series

Jun 12, 2025 • updated by Serhii T. • view change

Getting started

In This Section:



RouterOS is a stand-alone operating system based on Linux kernel. It powers MikroTik hardware devices, but is also available for virtual machines. If you are reading this document and have no prior experience with RouterOS, please use the menu on the left hand side, to learn about first steps with RouterOS. The different methods of connecting to your device are discussed under the "management tools" section.

Software Specifications

- Hardware Support
- Installation
- Configuration
- Backup/Restore
- Firewall
- Routing
- MPLS
- VPN
- Wireless
- DHCP
- Hotspot
- QoS
- Proxy
- Tools
- Other features
- Kernel version
- Supported Encryptions

Hardware Support

MikroTik made devices: RouterOS is compatible with MikroTik hardware it comes preinstalled on. Even MikroTik devices that are no longer manufactured, can run the latest RouterOS versions and will receive software updates. There are a few exceptions to this for the very oldest product lines. The latest RouterOS v7 is not compatible with all MIPS-LE family of devices (such as RB100, series, some RB700 series devices etc. please check the architecture of the device in question). It is also not compatible with MikroTik devices that have 32MB of RAM or less, but a minimum of 64MB is suggested. In short, there is no set limit on software compatibility or upgrades. Even devices that are no longer manufactured for 20 years, will still receive software updates, as long as they have enough RAM and are not based on a MIPS-LE CPU.

3rd party devices: RouterOS can also be run on 3rd party devices if they meet the following requirements:

- x86 or AMPERE powered ARM CPU
- Minimum 64MB of RAM
- IDE, SATA, USB, and flash storage medium with a minimum of 64MB of space
- Network cards supported by Linux kernel

Note: NVMe storage is supported only for CHR, x86, Tile, and MMIPS architecture. For specific information, please look at each product brochure or block diagram.

Note: We do not recommend running v7 on hardware that does not have at least 64 MB of RAM.

Installation

- Netinstall: Full network-based installation from PXE or EtherBoot enabled network card
- CHR: RouterOS version intended for running as a virtual machine
- CD-based installation

Configuration

- MAC-based access for initial configuration
- WinBox – standalone Windows GUI configuration tool
- Webfig - advanced web-based configuration interface
- MikroTik - Android and iOS-based configuration tool
- Powerful command-line configuration interface with integrated scripting capabilities, accessible via local terminal, serial console, telnet and ssh
- API - the way to create your own configuration and monitoring applications

Backup/Restore

- Binary configuration backup saving and loading

- Configuration export and import in human-readable text format

Firewall

- Stateful filtering
- Source and destination NAT
- NAT helpers (h323, pptp, quake3, sip, ftp, irc, tftp)
- Internal connection, routing and packet marks
- Filtering by IP address and address range, port and port range, IP protocol, DSCP and many more
- Address lists
- Custom Layer7 matcher
- IPv6 support
- PCC - per connection classifier, used in load balancing configurations
- RAW filtering to bypass connection tracking.

Routing

- Static routing
- Virtual Routing and Forwarding (VRF)
- Policy based routing
- Interface routing
- ECMP routing
- IPv4 dynamic routing protocols: RIP v1/v2, OSPFv2, BGP v4
- IPv6 dynamic routing protocols: RIPng, OSPFv3, BGP
- Bidirectional Forwarding Detection (BFD)

MPLS

- Static Label bindings for IPv4
- Label Distribution protocol for IPv4
- RSVP Traffic Engineering tunnels
- VPLS MP-BGP based autodiscovery and signaling
- MP-BGP based MPLS IP VPN

VPN

- IPSec – tunnel and transport mode, certificate or PSK, AH and ESP security protocols.
- IKEv2 support
- AES-NI hardware acceleration support for IPSec
- Point to point tunneling (OpenVPN, PPTP, PPPoE, L2TP, SSTP)
- Advanced PPP features (MLPPP, BCP)
- BCP supported on sstp, ppp, pptp, l2tp and pppoe
- Simple tunnels (IPIP, EoIP) IPv4 andIPv6 support
- 6to4 tunnel support (IPv6 over IPv4 network)
- VLAN – IEEE802.1q Virtual LAN support, Q-in-Q support
- MPLS based VPNs
- WireGuard
- ZeroTier

Wireless

- IEEE802.11a/b/g wireless client and access point
- Full IEEE802.11n support
- Nstreme and Nstreme2 proprietary protocols
- NV2 protocol
- Wireless Distribution System (WDS)
- Virtual AP
- WEP, WPA, WPA2
- Access control list
- Wireless client roaming
- WMM
- HWMP+ Wireless MESH protocol
- MME wireless routing protocol