

MikroTik CRS328-4C-20S-4S+RM Routers and Wireless Switch



MikroTik CRS328-4C-20S-4S+RM Routers and Wireless Switch User Manual

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Safety Warnings

Before you work on any equipment, be aware of the hazards involved with electrical circuitry, and be familiar with standard practices for preventing accidents. Ultimate disposal of this product should be handled according to all

national laws and regulations. The Installation of the equipment must comply with local and national electrical codes. This unit is intended to be installed in the rackmount. Please read the mounting instructions carefully before beginning installation.

Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation for people and damage to the system.

This product is intended to be installed indoors. Keep this product away from water, fire, humidity, or hot environments.

Use only the power supply and accessories approved by the manufacturer, which can be found in the original packaging of this product. Read the installation instructions before connecting the system to the power source. We cannot guarantee that no accidents or damage will occur due to the improper use of the device. Please use this product with care and operate at your own risk! In the case of device failure, please disconnect it from power. The fastest way to do so is by unplugging the power plug from the power outlet.

It is the customer's responsibility to follow local country regulations, including operation within legal frequency channels, output power, cabling requirements, and Dynamic Frequency Selection (DFS) requirements. All Mikrotik devices must be professionally installed.

Quick start

- Mount the unit in a rackmount cabinet or place it on a flat surface (see "Mounting").
- Connect two powering units to the AC source using power cords.
- The Initial connection has to be done via the Ethernet cable, using the MikroTik Winbox utility.
- Use Winbox to connect to the default IP address of 192.168.88.1 from any port, with the username admin and no password (or, for some models, check user and wireless passwords on the sticker).
- Update the device by clicking the "Check for updates" button to v6.46 or the latest RouterOS software to ensure the best performance and stability. The device needs to have an active internet connection.
- To manually update the device, go to our download page <https://mikrotik.com/download>
- Choose your architecture (ARM) and download the latest packages from any channel to your PC.
- Open Winbox and upload packages in the Files menu.
- Reboot the device.
- Updating software will ensure the latest security fixes and regulations set by local law.
- Set up your password to secure the device.

Powering

- The device accepts powering from two IEC connectors. AC input range 100-240 V.
- The power consumption under maximum load can reach 43 W.

Booting process

The device supports booting RouterOS (for routing and switching configuration) or SwOS (for only use as a switch). By default, the device will boot RouterOS, but you can reboot into the other operating system in the following ways:

- From SwOS: In the System menu, click the "Boot RouterOS" button at the bottom of the page.
- From RouterOS: in the System, RouterBOARD menu, click "Settings" and there select "Boot OS".
- It is also possible to select the OS and configure other boot settings via the serial console menu.

Configuration

Full RouterOS and SwOS documentation is located here: <https://mt.lv/help>. This device is not preconfigured other than an IP address on the bridge interface. You can connect from any port, as all ports are switched together by default. Another configuration has to be applied according to the documentation manual linked above. The Initial connection has to be done via the Ethernet cable, using the MikroTik WinBox utility. WinBox should be used to connect to the default IP address of 192.168.88.1 from any port, with the username admin and no password.

For recovery purposes, it is possible to boot the device for reinstallation, see Buttons and jumpers. In case the IP connection is not available, the WinBox utility can also be used to connect to the MAC address of the device. This applies only when the device has booted RouterOS. The device is equipped with an RJ45 serial port, set by default to 115200 bit/s, 8 data bits, 1 stop bit, and no parity. Standard RJ45 to COM cable can be used, pinout can be found here: <https://mt.lv/console>

Extension slots and ports

- 20 SFP ports.
- 4 SFP+ ports, which accept both 1.25 Gb SFP and 10 Gb SFP+ modules.
- 4 combo ports, consisting of four twisted pair (T) sockets and four SFP sockets (F).
- RJ45 serial port.

Please visit the wiki pages for the MikroTik SFP module compatibility table:

https://wiki.mikrotik.com/wiki/MikroTik_SFP_module_compatibility_table

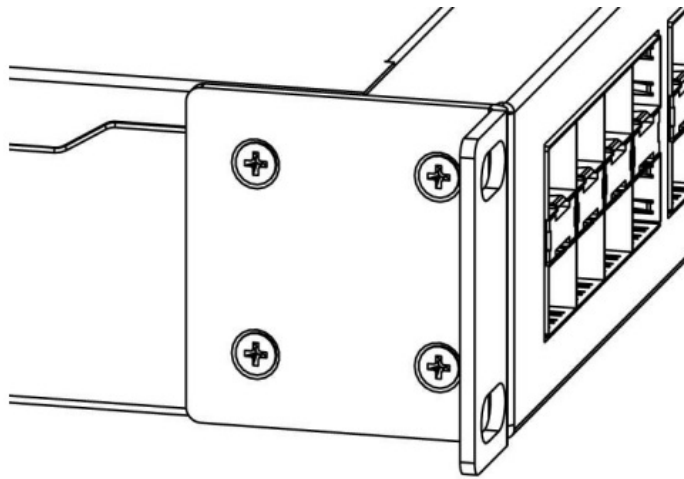
Combo ports

The four combo interfaces each have two physical connectors of which only one can be used at the same time. The ports will be automatically represented as combo1-4 in the RouterOS. It is possible to select which physical port will be used in the RouterOS software Ethernet menu. If left to default "auto", and both F/T have cables plugged in, SFP will take priority. For example, if you have plugged an Ethernet cable into the 1T port and an SFP module in the 1F port, you will have to choose in RouterOS which one to use. Double-click the respective combo interface in RouterOS GUI to see which socket is used.

Mounting

The device is designed to be used indoors and it can be mounted in a rackmount enclosure using provided rack mounts or it can be placed on the desktop. Please attach rubber pegs on the bottom of the router if the desired placement is on the flat surface or use a Phillips screwdriver to attach rackmount ears on both sides of the device if the designated use is for rackmount enclosure:

1. Attach rack ears to both sides of the device and tighten four screws to secure them in place, as shown in the picture.
2. Place the device in a rackmount enclosure and align it with the holes so that the device fits conveniently.



3. Tighten screws to secure it in place.
4. The IP rating scale for this device is IPX0. The device has no protection from water contamination, please ensure the placement of the device in a dry and ventilated environment.
5. The mounting and configuration of this device should be done by a qualified person. We recommend using Cat6 cables for our devices.

Buttons and jumpers

Reset button

- Hold this button during boot time until the LED light starts flashing, release the button to reset RouterOS configuration (total 5 seconds).
- Keep holding the button for 5 more seconds until the LED turns off, then release it to make the RouterBOARD look for Netinstall servers (total of 15 seconds). The first Ethernet port (comboether1) is used for the Netinstall process.
- See RouterOS documentation about using the Netinstall recovery utility.
- Regardless of the above option used, the system will load the backup routerBOOT loader if the button is pressed before power is applied to the device. Useful for RouterBOOT debugging and recovery.

Mode button

The action of the mode button can be configured from RouterOS software to execute any user-supplied RouterOS script. For configuration, use the menu `/system routerboard mode button`

Specifications

For more information about this product, specifications, pictures, downloads, and test results please visit our web page: https://mikrotik.com/product/crs328_4c_20s_4s_rm

Operating system support

The device supports dual boot SwOS software version 2.9 and RouterOS v6. The specific factory-installed version number is indicated in the RouterOS menu `/system resource`. Other operating systems have not been tested.

Included parts



IEC cord



IEC cord



Rackmount ears

Safety Notice

Electric shock hazard. This equipment is to be serviced by trained personnel only. To avoid pollution of the environment, please separate the device from household waste and dispose of it in a safe manner, such as at designated waste disposal sites. Familiarize yourself with the procedures for the proper transportation of the equipment to the designated disposal sites in your area.

Federal Communication Commission

Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, under Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used by the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

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Canada

This device complies with Industry Canada's license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. This Class A digital apparatus complies with Canadian ICES-003.

CE Declaration of Conformity

Manufacturer: Mikrotiks SIA, Brivibas gatve 214i Riga, Latvia, LV1039. The full text of the EU Declaration of Conformity is available at the following internet address: <https://mikrotik.com/products>. Information contained here is subject to change. Please visit the product page on www.mikrotik.com for the most up-to-date version of this document.

