

CRS328-24P-4S+RM



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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 to 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, and 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

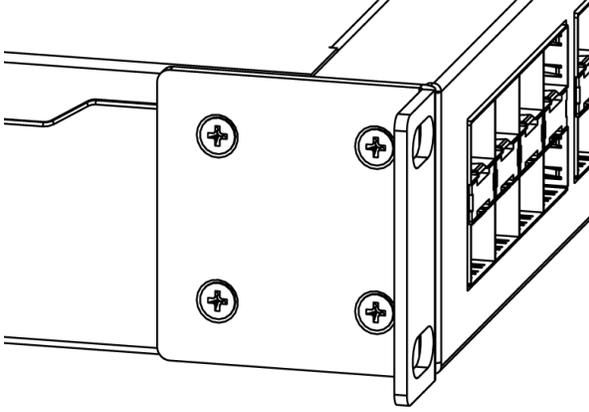
- Mount unit in a rackmount cabinet or place on the flat surface (see "[Mounting](#)").
- Connect to the power source (see "[Powering](#)").
- The Initial connection has to be done via the Ethernet cable, using the MikroTik Winbox utility.
- Set IP for your PC to 192.168.88.2
- Use Winbox to connect 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.

Mounting

The device is designed to use 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 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 the rackmount enclosure and align with the holes so that the device fits conveniently.
3. Tighten screws to secure it in place.

The device has no protection from water contamination, please ensure the placement of the device in a dry and ventilated environment.

We recommend Cat6 cables for our devices.

Mounting and configuration of this device should be done by a qualified person.

Powering

The unit is equipped with one IEC type AC power input, which accepts 100-240 V powering (~ 50/60 Hz 7 A max). The power consumption of this device itself under maximum load is up to 44 W.

Booting process

The device supports booting RouterOS (for complete routing and switching configuration) or SwOS (for only using 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 on 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 master Ethernet port. 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 from the network, 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. Applies only when the device has booted RouterOS.

The device is equipped with an RJ45 serial port, set by default to 115200bit/s, 8 data bits, 1 stop bit, no parity. Standard RJ45 to COM cable can be used, pinout can be found in our manual: <https://mt.lv/help>

Power output

This device can supply PoE powering to external devices from its Ethernet ports. The output voltage will be selected automatically, depending on what kind of voltage the connected device requires. The device can power both 802.3af/at devices and devices that accept passive PoE power. If necessary, the output voltage can be switched manually. By default the PoE mode is set to auto, it will not damage devices and will auto-detect devices with PoE support

and the needed voltage. Once a PoE device is detected, it will be powered and the PoE LEDs will turn on.

The PoE out ports is grouped in three PoE out groups of 8 ports each (PSE8). Total device PoE limit = 450w (150w per PSE8 group).

Each port can provide up to 30 W with high voltage, and 26,5 W with low voltage power output.

Buttons and Jumpers

Reset button:

- Hold this button during boot time until the USR LED light starts flashing, release the button to reset RouterOS configuration.
- Keep holding the button for 5 more seconds or until the user LED turns off, then release it to make the RouterBOARD look for Netinstall servers. **The first Ethernet port 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.

Release the button before LED begins to flash, to only load backup RouterBOOT without resetting. This is useful for RouterBOOT debugging and recovery.

Mode button:

The action of the mode buttons can be configured from RouterOS software to execute any user-supplied RouterOS script. You can also disable this button.

The mode button can be configured in RouterOS menu `/system routerboard mode-button`

Extension slots and ports

- 24 gigabit Ethernet ports (With Auto MDI/X so you can use either straight or cross-over cables for connecting to other network devices).
- 4 SFP+ cages, which accept both 1.25 Gb SFP and 10 Gb SFP+ modules.
- RJ45 serial port.

LED indicators

- PWR LED is lit when the router is powered on.
- The use of LEDs can be configured from RouterOS.
- Triangle LEDs (top row) indicate PoE out status. Green LED indicates that the respective port uses low voltage, a red LED indicates high voltage. Flashing single green LED: problem to start a low voltage device. Flashing single red LED: problem with high voltage device.
- The square port LEDs (bottom row) indicate the individual Ethernet, SFP port activity.
- FAN FAULT LED indicates a problem with any of the cooling fans.
- PoE FAULT LED indicates an exceeded overall max PoE output limit. Port PoE-out priorities will work in 3 independent sections (8 ports each) and overload will happen in any section that breach 150W consumption

Accessories

Package includes the following accessories that come with the device:



IEC cord



Rackmount ears

Please visit wiki pages for MikroTik SFP module compatibility table: https://wiki.mikrotik.com/wiki/MikroTik_SFP_module_compatibility_table

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.

<https://wiki.mikrotik.com/wiki/SwOS>



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 in 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, pursuant to 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 in accordance with 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.

Innovation, Science and Economic Development 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [A] est conforme à la norme NMB-003 du Canada.

CAN ICES-003 (A) / NMB-003 (A)

UKCA marking



Eurasian Conformity Mark

Информация о дате изготовления устройства указана в конце серийного номера на его наклейке через дробь. Первая цифра означает номер года (последняя цифра года), две последующие означают номер недели.

Изготовитель: Mikrotikls SIA, Aizkraukles iela 23, Riga, LV-1006, Латвия, support@mikrotik.com. Сделано в Китае, Латвии или Литве. См. на упаковке.

Для получения подробных сведений о гарантийном обслуживании обратитесь к продавцу. Информация об импортерах продукции MikroTik в Российскую Федерацию: <https://mikrotik.com/buy/europe/russia>

Продукты MikroTik, которые поставляются в Евразийский таможенный союз, оцениваются с учетом соответствующих требований и помечены знаком EAC, как показано ниже:



Norma Oficial Mexicana

EFICIENCIA ENERGETICA CUMPLE CON LA NOM-029-ENER-2017.

La operacion de este equipo esta sujeta a las siguientes dos condiciones:

- Es posible que este equipo o dispositivo no cause interferencia perjudicial y.
- Este equipo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operacion no deseada.

Fabricante: Mikrotikls SIA, Brivibas gatve 214i, Riga, LV-1039, Latvia.

País De Origen: Letonia; Lituania; China (Republica Popular); Estados Unidos De America; Mexico.

Por favor contacte a su distribuidor local para preguntas regionales específicas. La lista de importadores se puede encontrar en nuestra página de inicio – <https://mikrotik.com/buy/latinamerica/mexico>.

CE Declaration of Conformity

Manufacturer: Mikrotikls 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.