

MikroTik CCR2116-12G-4S+

MikroTik CCR2116-12G-4S+ Cloud Core Router User Manual

Model: CCR2116-12G-4S+ | Brand: MikroTik

1. INTRODUCTION

Welcome to the user manual for the MikroTik CCR2116-12G-4S+ Cloud Core Router. This document provides essential information for the proper installation, configuration, operation, and maintenance of your device. The CCR2116-12G-4S+ is a high-performance router designed for demanding network environments, featuring a powerful CPU, multiple Gigabit Ethernet ports, and SFP+ ports for high-speed connectivity. Please read this manual thoroughly before using the device to ensure optimal performance and safety.

2. SAFETY INFORMATION

Observe the following safety guidelines to prevent damage to the device or injury to yourself:

- **Power Supply:** Use only the power supply provided with the device or a compatible power supply specified by MikroTik. Ensure the power source voltage matches the device requirements.
- **Ventilation:** Ensure adequate airflow around the device. Do not block ventilation openings. Operating the device in an enclosed space without proper ventilation can lead to overheating.
- **Environment:** Do not expose the device to water, moisture, or extreme temperatures. Operate within the specified temperature and humidity ranges.
- **Qualified Personnel:** Installation and configuration should be performed by qualified personnel familiar with network equipment and electrical safety procedures.
- **Grounding:** Ensure the device is properly grounded if required by local electrical codes.

3. PACKAGE CONTENTS

Verify that your package contains the following items:

- MikroTik CCR2116-12G-4S+ Cloud Core Router
- Rackmount bracket (white)

- Power cable(s) (quantity may vary based on region)

4. PRODUCT OVERVIEW

Familiarize yourself with the physical components of your MikroTik CCR2116-12G-4S+ router.



Figure 4.1: Front angled view of the MikroTik CCR2116-12G-4S+ Cloud Core Router, showcasing the Gigabit Ethernet ports, SFP+ ports, console port, and LED indicators.



Figure 4.2: Rear view of the MikroTik CCR2116-12G-4S+ Cloud Core Router, displaying the dual redundant power supply inputs and cooling fan vents.



Figure 4.3: Side view of the MikroTik CCR2116-12G-4S+ Cloud Core Router, illustrating the rackmount ear attachment points.



Figure 4.4: Direct front view of the MikroTik CCR2116-12G-4S+ Cloud Core Router, highlighting the port numbering for Gigabit Ethernet and SFP+ interfaces, along with status LEDs.

5. SETUP

5.1. Rack Mounting

The CCR2116-12G-4S+ is designed for rack installation. Attach the included rackmount brackets to the sides of the device using the provided screws. Secure the device into a standard 19-inch server rack using appropriate rack screws.

5.2. Power Connection

Connect one or two power cables to the AC power inputs on the rear of the device. The CCR2116-12G-4S+ supports redundant power supplies for increased reliability. Plug the other end of the power cable(s) into a grounded electrical outlet.

5.3. Initial Network Connection

For initial configuration, connect a computer to one of the Gigabit Ethernet ports (e.g., ether1) or the dedicated console port using an appropriate cable. The device will typically obtain an IP address via DHCP on its default configuration, or you can connect via the console for direct access.

6. OPERATING INSTRUCTIONS

6.1. First Boot

Upon connecting power, the device will initiate its boot sequence. Observe the LED indicators on the front panel for status. The 'USER' LED may blink during boot and become solid once the RouterOS operating system has fully loaded.

6.2. Accessing RouterOS

The MikroTik CCR2116-12G-4S+ runs RouterOS, a powerful and versatile operating system. You can access and configure RouterOS using several methods:

- **WinBox:** A dedicated Windows utility for managing MikroTik devices. Download it from the MikroTik website. Connect to the device using its MAC address or IP address (default is typically 192.168.88.1).
- **WebFig:** A web-based interface accessible via a web browser. Enter the device's IP address into your browser's address bar.
- **Console:** Connect via the RJ45 console port using a serial cable and a terminal emulator (e.g., PuTTY) with appropriate serial settings (115200 baud, 8 data bits, 1 stop bit, no parity, no flow control).

The default login credentials for a new device are typically *admin* with no password. It is highly recommended to change the default password immediately after initial access.

6.3. Basic Configuration

After gaining access to RouterOS, you can proceed with basic network configuration:

- Configure WAN (Internet) interface settings (DHCP client, static IP, PPPoE).
- Set up LAN interfaces and IP addresses for your internal network.
- Configure firewall rules for security.
- Implement routing policies as needed for your network topology.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your router:

- **Firmware Updates:** Regularly check the MikroTik website for RouterOS updates. Keeping your firmware up-to-date provides new features, performance improvements, and security patches.
- **Cleaning:** Periodically clean the device's exterior and ventilation openings to prevent dust buildup, which can hinder cooling. Use a soft, dry cloth. Do not use liquid cleaners.
- **Monitoring:** Utilize RouterOS tools to monitor CPU usage, memory, temperature, and network traffic. This helps identify potential issues before they become critical.
- **Backup Configuration:** Regularly back up your RouterOS configuration. This allows for quick restoration in case of accidental misconfiguration or device failure.

8. TROUBLESHOOTING

If you encounter issues with your CCR2116-12G-4S+, refer to the following common troubleshooting steps:

- **No Power:** Check power cable connections and ensure the power outlet is functional. Verify the power LEDs on the device are illuminated.
- **No Network Connectivity:** Verify Ethernet cable connections. Check port status LEDs. Ensure correct IP address configuration on both the router and connected devices. Review firewall rules that might be blocking traffic.
- **Slow Performance:** Check CPU and memory usage in RouterOS. Identify any processes consuming excessive resources. Review network traffic statistics to pinpoint bottlenecks. Consider upgrading RouterOS or optimizing configurations.
- **Cannot Access RouterOS:** Ensure your computer's IP address is in the same subnet as the router's management IP. Try connecting via WinBox using the MAC address. If all else fails, consider a hard reset (refer to MikroTik documentation for specific reset procedures, as this will revert to factory defaults).

9. SPECIFICATIONS

Detailed technical specifications for the MikroTik CCR2116-12G-4S+ Cloud Core Router:

Feature	Value
Product Dimensions	19.69 x 19.69 x 11.02 inches
Item Weight	4.4 pounds
ASIN	B09RJM7VQD
Item model number	CCR2116-12G-4S+
Batteries	1 Lithium Ion batteries required.
Date First Available	August 10, 2022
Manufacturer	MikroTik
Brand	MikroTik
Model Name	CCR2116-12G-4S+

Feature	Value
Special Feature	WPS
Frequency Band Class	Single-Band
Wireless Communication Standard	802.11ac
Compatible Devices	Personal Computer
Recommended Uses For Product	Home
Included Components	Rackmount bracket white
Connectivity Technology	Ethernet
Color	Multicolor

10. WARRANTY INFORMATION

This MikroTik CCR2116-12G-4S+ Cloud Core Router is covered by a standard manufacturer's warranty. The specific terms and duration of the warranty may vary by region and retailer. Please retain your proof of purchase for warranty claims. For detailed warranty information, refer to the official MikroTik website or contact your point of purchase.

11. SUPPORT AND CONTACT

For further assistance, technical support, or to access additional resources, please visit the official MikroTik website:

<https://mikrotik.com/support>

You can find documentation, forums, and contact information for MikroTik support on their website.