CRS504-4XQ-IN

$ 799

Your most affordable, compact, energy-efficient doorway to the world of **100 Gigabit networking**. The next step in upgrading existing 10 or 25 Gigabit networks.

16X25 GIGABIT MARVELL PRESTERA SWITCH CHIP

MULTIPLE POWERING OPTIONS: POE-IN, DC JACK, 2-PIN TERMINAL

DUAL HOT-SWAP POWER SUPPLIES

COMPATIBLE WITH 40G, 25G, 10G, AND 1G FIBER CONNECTIONS

4X 100 GIGABIT QSFP28 PORTS
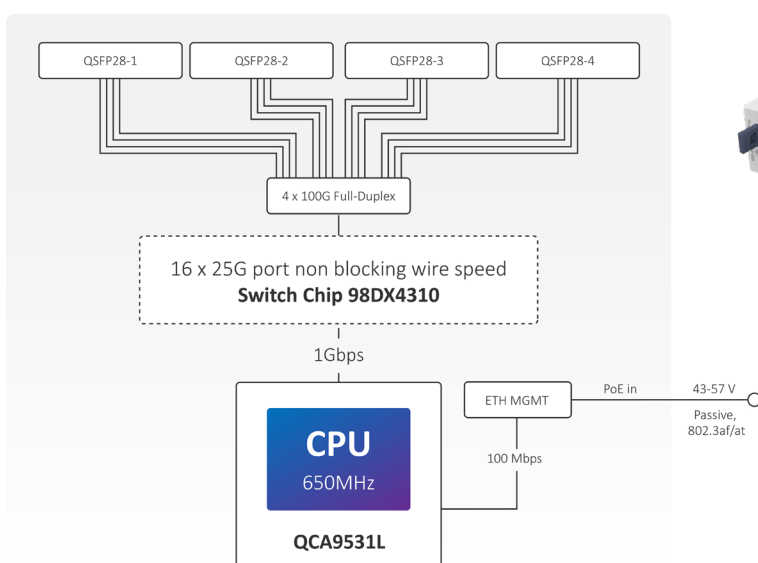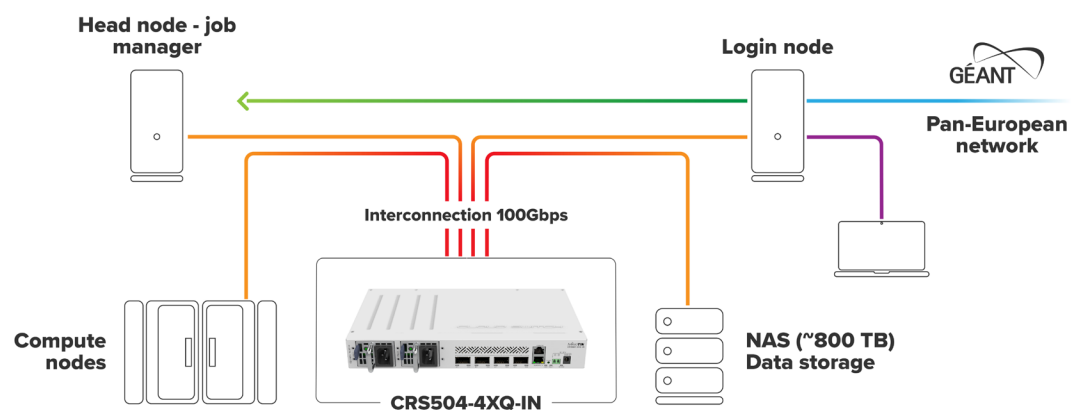
USES 25W OF POWER

Our 100 Gigabit family keeps expanding — you've already seen the incredible CCR2216 100 Gigabit router. Now it's time for a matching switch — the CRS504-4XQ-IN. The small size combined with the low power consumption (25W without attachments!) is perfect to start expanding 100 Gigabit networking in everyday setups. This speed is no longer limited to data centers, ISPs, and large offices. You too can upgrade your 10 or 25 Gigabit network and join the one hundred club!

There are **four 100 Gigabit QSFP28 ports**. Use them to connect other 100 Gigabit devices or grab a breakout cable to connect multiple 25 Gigabit devices: each port is connected to four 25 Gigabit lines, allowing you to connect 16 x 25 Gigabit devices. In fact, you can mix and match all kinds of connections this way: 100 Gigabits on one port, 40 Gigabits on the other, 4x25 Gigabits on the third, and maybe even some 10G or 1G cables on the fourth. Obviously, there is an Ethernet port for management purposes as well.

We've been using this switch for quite some time now in the Genomics Data Network project. A high-capacity data network for our local scientists working on ground-breaking cancer treatments. Genome data can take up a lot of space, so you need exceptionally fast connections there. Also, with these devices, Latvia became the first Baltic country to establish a 100 Gigabit connection to the pan-European research network.

The cost-effective and fast way to build truly high-speed infrastructures.

Head node - job manager

Login node

GÉANT

Pan-European network

Interconnection 100Gbps

Compute nodes

CRS504-4XQ-IN

NAS (~800 TB) Data storage

QSFP28-1   QSFP28-2   QSFP28-3   QSFP28-4

4 x 100G Full-Duplex

16 x 25G port non blocking wire speed
Switch Chip 98DX4310

1Gbps

CPU
650MHz

QCA9531L

ETH MGMT

PoE in

43-57 V

Passive, 802.3af/at

100 Mbps

Can be mounted on a wall!

LHG LTE18 kit

$ 279

Great distances, even greater speed – with the power of the ultra fast LTE Category 18 modem. Last-mile-internet solution for the most remote areas.

|		
HIGH-SPEED INTERNET EVEN WHEN YOUR PHONE HAS NO SIGNAL!	**BLAZING FAST CAT18 LTE MODEM**	**POWERFUL 64-BIT DUAL-CORE ARM CPU**
GRID ANTENNA DESIGN – PERFECT FOR HARSH, WINDY WEATHER	**GIGABIT ETHERNET WITH POE-IN**	**LARGE HIGH-GAIN ANTENNA**

Like the previous LHG LTE models, this is a **last-mile-internet solution** for situations **when even your phone might not have any signal**. The new LHG comes with a cutting-edge Category 18 LTE modem – for the fastest mobile internet no matter where you are. This kit supports **speeds up to one Gbps!** Due to its **large high-gain 17 dBi antenna**, LHG LTE18 kit can connect to cell towers in extreme rural locations where nothing else is available.

> *There is a massive heat sink, so you don't have to worry about overheating. The grid antenna design can withstand harsh, windy weather. And it can be mounted in different ways, including poles and masts.*

Gigabit Ethernet   SIM slot
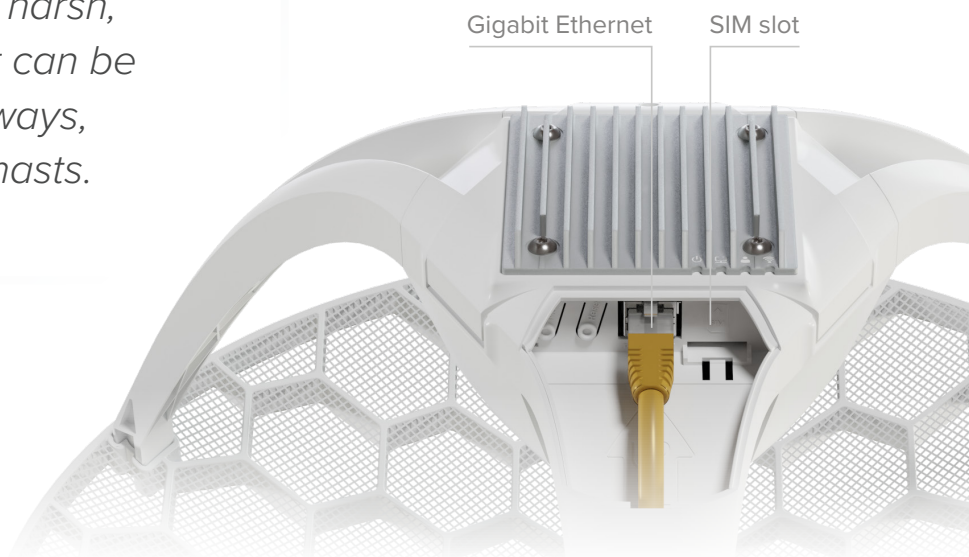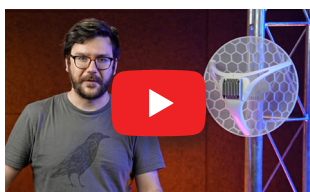
The LHG LTE18 kit features a 1.2 Gbps CAT18 LTE modem, which enables carrier aggregation and allows the device to use multiple bands at the same time. That is a huge advantage when there are a lot of LTE users in the area. It provides better responsiveness in a crowded environment and higher efficiency for weaker signal situations in the countryside. If you're competing for traffic in a place with poor connectivity, the new LHG will give you the upper hand. We have seen internet speed doubling in rural areas after switching to carrier aggregation, so there is no need to wait for cable network expansions.

Connect even where cell phones fail!
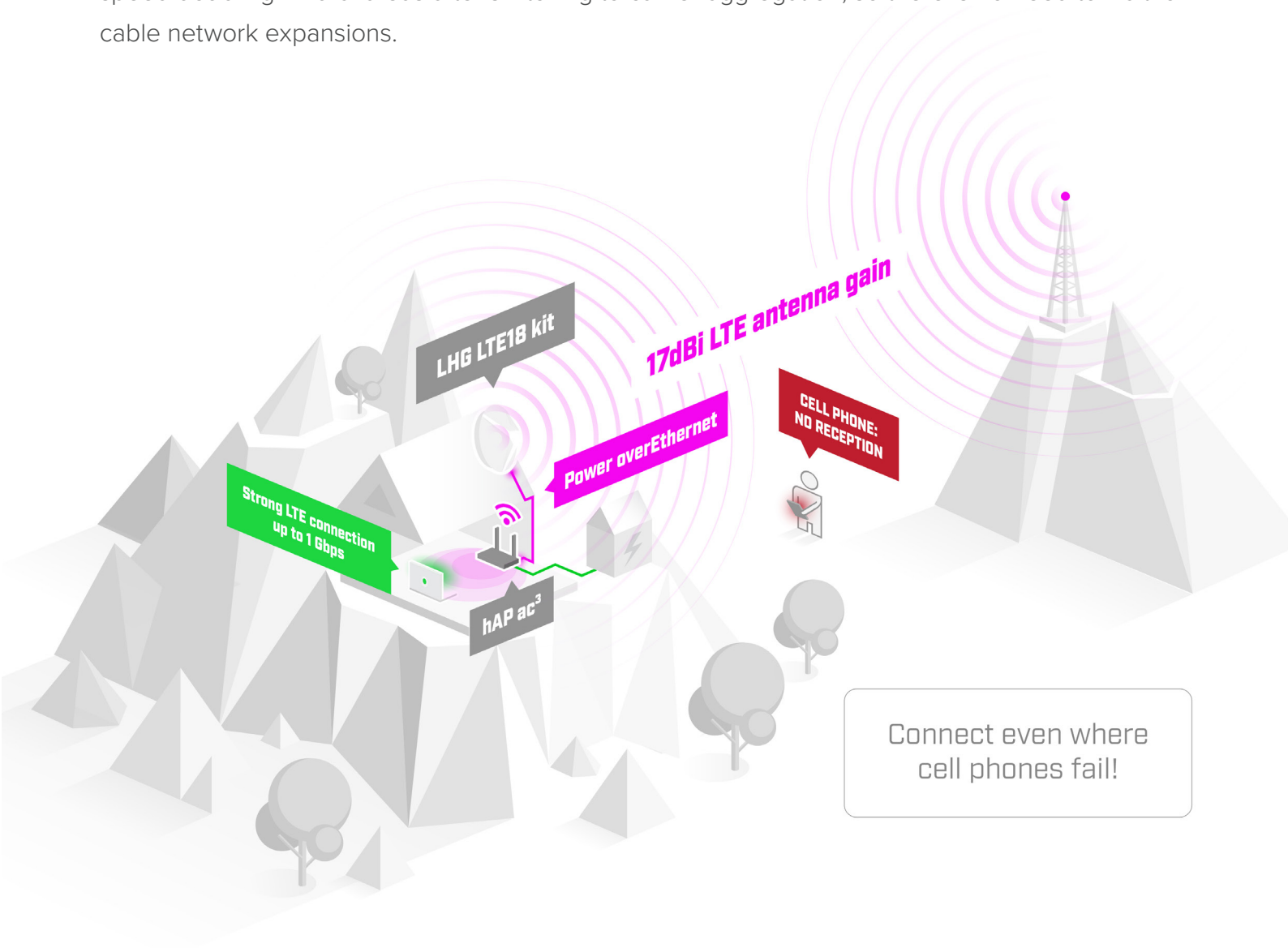
There's a mighty high-gain antenna inside that supports a variety of LTE bands. It goes as high as 2.7 GHz. And it offers extensive low frequency coverage as well.

You'll be using the **Gigabit Ethernet** port with **PoE-in** for powering from an ethernet switch. But we've included an injector as well. There's a standard **MicroSIM slot** for LTE connectivity. And at the heart of this useful gadget, we have a powerful 64 bit **dual-core ARM CPU**.

So don't wait for cable or satellite network providers to reach you – choose LHG LTE18 kit and always stay connected!

CCR2004-16G-2S+PC

Up to 300% faster than the previous CCR1009 routers - in a blissful silence! Luxury you deserve for the price you can afford.

|			
16X GIGABIT ETHERNET PORTS	**2X 10G SFP+ CAGES**	**POWERFUL QUAD-CORE CPU**	**RJ-45 CONSOLE PORT**

Like the other models in CCR2004 series, this CCR also features the Amazon Annapurna Labs Alpine v2 CPU with **4x 64-bit ARMv8-A Cortex-A57 cores**. While this CPU is running at 1.2 GHz, the router can be 3x as fast than the previous generation CCR's. **This is the silent powerhouse. Enjoy all the power of a real CCR in peace and quiet. Get rid of all the hum and buzz in your office, studio, server room or homelab without sacrificing the performance!**
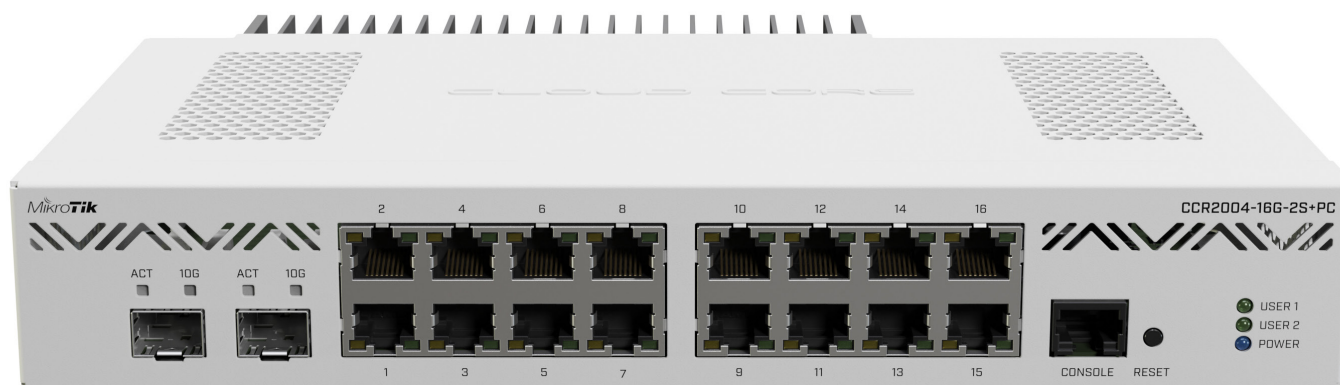
The new router has 18 wired ports, including 16x Gigabit Ethernet ports and two 10G SFP+ cages. It also has a RJ-45 console port on the front panel.

Each group of 8 Gigabit Ethernet ports is connected to a separate Marvell Amethyst family switch-chip. Each switch chip has a 10 Gbps full-duplex line connected to the CPU. The same goes for each SFP+ cage - a separate 10 Gbps full-duplex line. Boards come with 4GB of DDR4 RAM and 128MB of NAND storage.
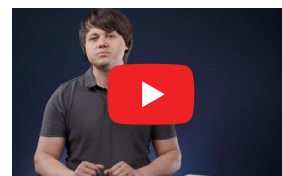
So as you can see - no bottlenecks. As long as the CPU can handle the processing, all ports can reach wire speed. And this CPU is a beast that can handle a lot. If we look at the performance, you can see that it is trading blows with our CCR1009.

CCR2004-16G-2S+PC

| | | 1518 byte | |
Mode	Configuration	kpps	Mbps
Bridging	none (fast path)	**2653.3**	**32221.5**
Bridging	25 bridge filter rules	**1645.2**	**19979.5**

CCR1009-7G-1C-1S+PC

| | | 1518 byte | |
Mode	Configuration	kpps	Mbps
Bridging	none (fast path)	1300.4	15792.1
Bridging	25 bridge filter rules	1100.4	13363.3

CCR1009-7G-1C-PC

| | | 1518 byte | |
Mode	Configuration	kpps	Mbps
Bridging	none (fast path)	652.8	7927.6
Bridging	25 bridge filter rules	649.6	7888.7

Performance increase up to **300%** *compared to the previous models!*

The best part? This brand new CCR is among the most affordable options out there - not only within the CCR series, but on the market in general.

One of the most common ways to use this device would be: Gigabit Ethernet ports for the internal network; SFP+ ports for downlink and uplink. The perfect all-in-one solution for small and medium-sized businesses. Easy and efficient.

With the new CCR2004, you can take your office network to the next level. Without breaking the bank.
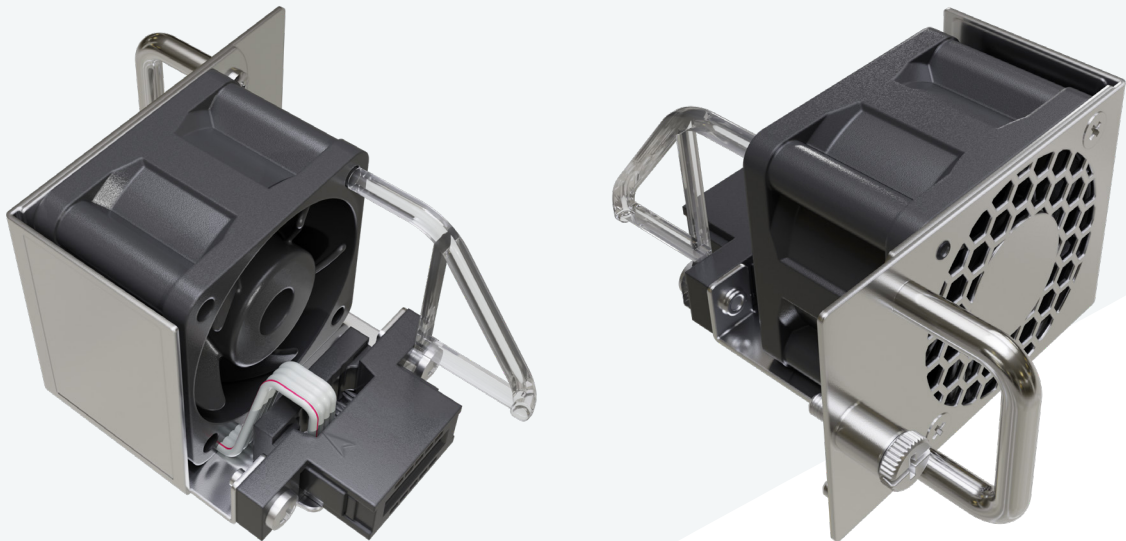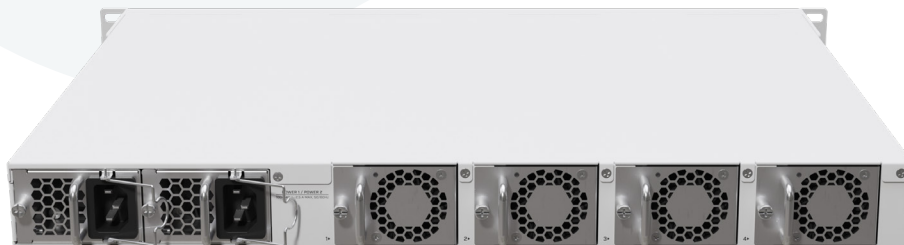
MT-HotSwapFan

$ 39

Be prepared for the unexpected with the backup hot-swappable fans for our newest devices, such as the flagship CCR2216!
If your fans go out of order at some point, you can swap them without unnecessary downtime, as there is no need to turn the router off.
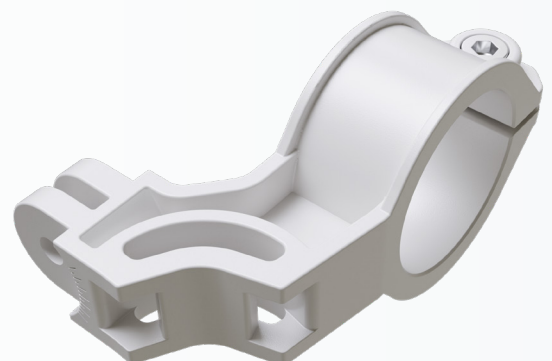
CCR2216-1G-12XS-2XQ

QMP-LDF

$ 5

An advanced pole/mast mount adapter for our LDF series – for extra ease of use and versatility. There are two standard mounting options and additional QMP compatibility for mounting LDF on a wall. The adapter offers extra durability due to its unique plastic composite material – anvilNITE™.

New heights with the new logo!

We have updated our visual identity to reflect our journey so far. As you all know, our mission is to make existing Internet technologies faster, more powerful, and affordable to a wider range of users. To create jobs, promote science and education, and help everyone stay connected to their loved ones. When we first started out, we would offer our clients specific tools to solve their problems. But now, 26 years later, we are blessed to have grown with you to become something bigger: a whole ecosystem for creative problem-solving. Ethernet switches and routers, 5G LTE, 60 GHz and fibre products, even IoT solutions. With MikroTik, anyone can now create fully-fledged network infrastructures from the ground up — without breaking the bank.

The background shape of our new logo is inspired by the main principles of our product design: it's all about math and efficiency. You can find hexagons everywhere — beehives, snowflakes, basalt columns, organic chemical compounds like benzene, insect eyes... The hexagon is all around - because it wastes no space or energy. Similarly, we commit to always looking for the most effective solutions to deliver the right devices for your networks.

The arrow-looking "M" also stands for something bigger: it is an agent of growth and curiosity. Your endless creativity with MikroTik devices inspires us to always return to the drawing board and do better. Each new product is an exciting opportunity for us to see what the fantastic MikroTik community will come up with. With your support, this arrow will keep going forward no matter what. Thank you for being a part of this journey!

MIKROTIK TRAIN THE TRAINER

May 25-27, Riga, Latvia

Do you want to become a MikroTik certified trainer and conduct your own training courses? Then join our Train-the-Trainer course this spring - we will teach you all there is!

Information for travellers

We kindly ask everyone to research the travel restrictions and rules on their own when leaving their country and arriving in Latvia.
You can find this information on the websites of your country's Ministry of Foreign Affairs or Ministry of Health, as well as here: **https://reopen.europa.eu/en**

You can apply via the link below:
https://mikrotik.com/training/train-the-trainer

A MikroTik certified trainer can conduct official training courses anywhere in the world. This is your chance to build your business with MikroTik.

The nearest hotel is the Rixwell Elefant Hotel, a 5-min walk away from the Training Center. We have negotiated a discount for training participants, please use promo code **MIKROTIK2022** during the booking. The code works in other Rixwell, Wellton and Rija hotels as well.

If you had already registered for the postponed training, please contact us via e-mail: **training@mikrotik.com**

Training location: MikroTik RouterOS Training Center, Volguntes street 32, Riga, Latvia

MikroTik is not responsible for any damage caused by the COVID pandemic, including, but not limited to, any difficulties with the EU-Digital COVID certificate.

IGMP multicast tutorial using SDVoE equipment

In this Mikrotips video, our colleague Edgars will explain how to set up IGMP snooping in MikroTik RouterOS, and demonstrate running multiple live video streams with SDVoE equipment, which converts HDMI signal and send it out over the network to remotely located monitors.


IoT product white-label options

On orders over 10 000 units, we can offer white-labeling for TG-BT5-IN and TG-BT5-OUT products. That means we can ship these Bluetooth tags with custom configuration and your logo on them. For more information, send an e-mail to **sales@mikrotik.com** with all the details.
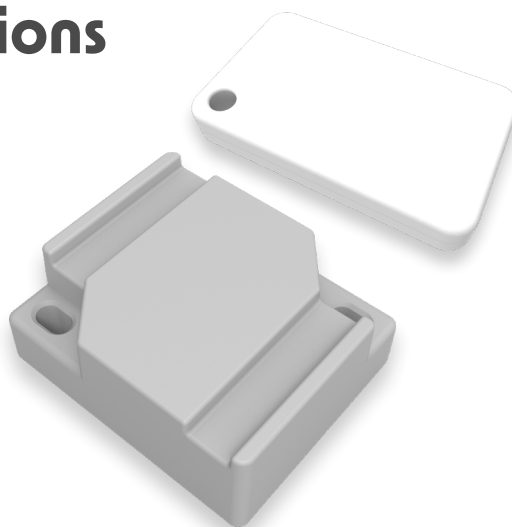
Default IP change for LTE CPE's

Please note that since RouterOS release 7.1.4, we have changed the default IP on non-wireless CPE boards with LTE support. See the complete changelogs for more information. We strongly suggest using the latest stable RouterOS version, as we continue to improve the software.
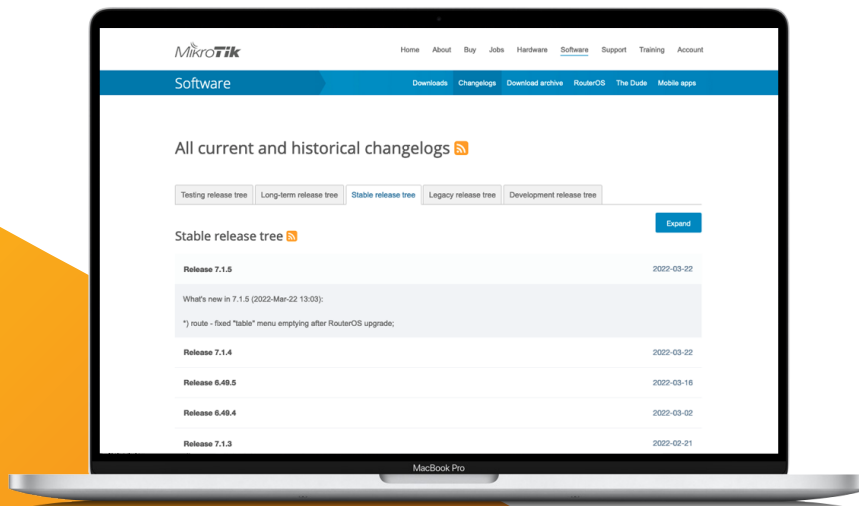
RouterOS v7.2 out now –
major stability improvements!

We are proud to present the most significant RouterOS update so far – 7.2 (stable). It features a massive changelog, including:

- **Routing** - notable improvements and fixes for routing services;
- **L3HW** - even more improvements regarding the Layer3 traffic hardware offloading;
- **System** - improved general system stability and resource allocation for increased performance;
- **WifiWave2** - continuous work on our new wireless package;
- ... and many, many more fixes and tweaks.

Remember to keep your devices updated for the best performance and maximum security!

Kolkata - Ganga Sagar: a point-to-point connection in the ocean

The most unusual opportunity presented itself when our colleagues from **Airpath Wirelessnet Solutions** were contacted by **The National Technology Centre for Ports, Waterways & Coasts** of India. They needed a link between two sites in the ocean: **Tsunami alert and tide reading buoy stations**.

Here's the challenge: all high-speed wireless links require a good line of sight and a clear Fresnel zone. Usually, you can achieve this with masts or towers. But what can you do in the middle of the ocean?

After ruling out 24, 60, and 80 GHz solutions, Airpath Wirelessnet turned to the good old 5 GHz connectivity.

"We chose the MikroTik **NetMetal** because it uses the extended upper part of the 5 GHz spectrum, leading to a much lower probability of interference, as well as high-gain TX Power." /Airpath Wirelessnet Solutions /

In the end, they had to use an anchored boat and even the help of experienced divers, but a stable 100 Mbps connection is now in place. **NetMetal – not even the vast ocean can stop it**.

Galvanized clamps to avoid corrosion.
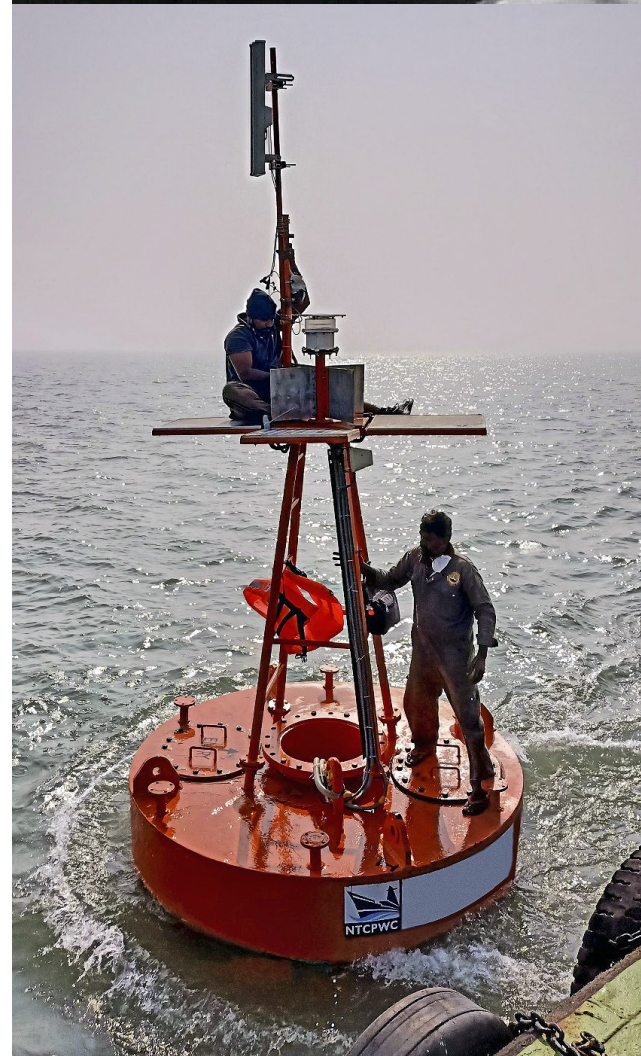
MikroTik's humanitarian aid to Ukraine exceeds EUR 300 000

As the brave people of Ukraine continue to suffer, we pledge to keep doing our part. MikroTik has provided over 300 000 EUR worth of networking devices to the humanitarian efforts. This includes setting up network connections in bomb shelters and crisis centres of Ukraine, as well as refugee facilities in Poland and Romania.

"We've received many requests to help with secure connectivity from Lviv, Poltava, Kharkiv, Odesa, Zhytomyr, and other regions. Our lionhearted distributors and partners in Ukraine are setting up Internet in temporary shelters, schools, and hospitals. The same goes on in Romania and Poland, with more refugee camps being set up by the day. We've been sending equipment to Siret, Isaccea, Albita, Baia Mare, Brasov, and other places" explains Martins Kengis, regional Sales manager for Eastern Europe incl. Ukraine.

» Here you can download all the visuals used in this newsletter «