



CarlOS

The operating system for continuous,
reliable networking

Cloud Based Advanced Router Linux Operating System

The Cloud-based Advanced Router Linux Operating System – CarlOS for short – is an operating system developed by onway for network devices such as (mobile) routers and switches or virtual network appliances. It is portable and can be used on a wide range of hardware.

Our operating system is based on the Linux kernel and carefully selected open-source components. The CarlOS core functions are proprietary software developments and onway ag intellectual property. Thanks to our software specialists' in-house expertise, which is available at any time, customised extensions and adaptations can be implemented reliably and in consistently high quality.

For use both in the office and on the road

onway usually includes CarlOS as part of a complete solution and provides it as a key component of its network products. The extremely flexible configuration options can be used in a wide variety of environments. Customers use our network products – particularly CarlOS – in coaches, trains, ships, and also in stationary applications, such as industrial environments and in enterprise networking.

Updated within seconds across all devices

The CarlOS software architecture allows and intends for it to be fully orchestrated from the cloud. Configuration changes can therefore be rolled out across entire fleets within seconds from the comfort of your desk.

In addition, specially developed network protocols are used and allow efficient, flexible and scalable communication between thousands of CarlOS devices and our cloud systems. Configuration and telemetry data are transferred reliably and in real time.

The sophisticated update management allows for prompt system updates, even on systems with fluctuating internet connectivity. Several fallback strategies ensure updates are reliable.



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Networks, modems and uplinks

CarlOS provides network connectivity via a wide range of interfaces – be it mobile networks, wireless LAN, Ethernet or other wired networks. It also creates logical connections via VPNs or other technology.

For mobile devices, CarlOS offers network functionalities that are otherwise only known in enterprise networking: VPN, VRF, VLAN/VXLAN, QoS, Network Access Control and many more. The specially developed modem stack controls 4G and 5G modems and monitors them to ensure reliable operation.

Of particular note is CarlOS' ability to bundle multiple modems or other uplinks to optimise costs or increase capacity and connection resilience. Several CarlOS devices can be operated in a cluster for this purpose.

Connecting sensors – such as GPS, accelerometer/gyroscope, CAN vehicle interfaces, voltage monitoring and more besides – allows measured values to be collected and processed, thereby providing customers with exciting and valuable insights into their systems or fleets.

Seamless integration

The support of standardised protocols such as ITxPT and the provision of further APIs allow seamless integration with third-party systems. Furthermore, CarlOS supports the operation of containers to run applications from partners or third parties on onway's hardware.

Summary

CarlOS-based devices are centrally managed and administered via the onway director. When combined with the onway products mpp and macman in the back-end, CarlOS devices can act as an access point via WLAN or Ethernet as part of a complete solution for guest WLAN and secure client authentication via network access control.



swiss made software

Who is onway?

We have been developing software solutions for Network Access Control (NAC), Bring Your Own Device (BYOD), Guest Access as well as communication access for public transport since 2004. Meanwhile, over 100 companies such as banks, insurance companies, hospitals and transport companies successfully use onway's Smart Network Access.

Do you have any questions?
We would be delighted to support you
in implementing your project.