

NetModule Router Software

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Product Information NRSW
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Our Linux-based router software ensures reliable data connections with a wide range of network functions and smart link management – stationary and mobile.

Overview

The NetModule router software (NRSW) is our standard software and runs on all our devices. This has the advantage of being able to use identical configuration processes and functions for every router (unless technical restrictions dictate otherwise). It is based on proven components such as Embedded Linux and a powerful communication protocol suite.

Routing options include static routes, multipath, OSPF, BGP, and more. Mobile IP permits switching from one network to the next while retaining a permanent IP address. Quality of Service (QoS) and various firewall options are also available. For secure connections to remote locations, the NRSW offers VPN protocols such as OpenVPN or IPSec.

An important feature is the Software Development Kit (SDK), which allows you to write your own scripts and functions for the router. It contains extensive functions for accessing hardware interfaces – to retrieve system status parameters, send email or SMS, or perform router configuration tasks.

The NRSW also supports Linux Containers (LXC) in case additional applications are to be integrated. The containers allow processes and process groups to be isolated by virtualizing kernel resources and shielding them from each other. With LXC you can launch single applications or whole Linux distributions in a container. Containers separate user and router applications particularly efficiently for the secure execution of both applications.

The NRSW can be configured via a Web GUI or a command-line interface (CLI). Configuration files can also be provided via auto-run USB.

The router software is continuously improved. Software updates are freely available.

Standard Features

- Implemented on all products
- Intuitive user interface
- All modern routing protocols
- Efficient mass deployment
- Simple setup
- OTA deployment

User Extendable

- Standard apps (open toolchain)
- Scripting with SDK commands
- Linux LXC

Standard Features

General Router Features

Fail-safe update (FOTA) via USB, HTTP(S), (S)FTP, TFTP

Remote CLI & WebGUI

RADIUS authentication, Simple Certificate Enrollment Protocol (SCEP)

Hardware and software watchdog

Link Management

Link prioritization and aggregation

Load Balancing

Multipath-TCP

IP-Passthrough

Link supervision

Cellular Networking

Multi-SIM, soft-SIM

Multi-APN

Signal strength supervision

GSM, CSFB calls

WLAN

Client or access point mode

Multi client support with WEP, WPA-PSK, WPA-RADIUS, WPA-EAP-TLS

Multi/hidden SSID support with WPA-PSK, WPA-RADIUS, WPA-EAP-TLS

IEEE 802.11w, IEEE 802.11r

RADIUS accounting

CAPWAP

USB

USB sticks for mass storage, adapter for Ethernet or RS232/RS485 interfaces for serial-to-IP-server.

IP/Routing Protocols

Routing: Destination, Policy, Multipath

Mobile-IP, OSPF, BGP, Multicast, TCP MSS Clamping, Bridging

Discovery protocols LLDP, CDP, SONMP, EDP, FDP, IRDP

STP, RSTP, VRRP, VLAN, PPPoE

VPN Protocols

OpenVPN, IPsec, PPTP, GRE, CSD Dial-In

Quality of Service

Diffserv, SFQ, HTB, Priority-based Queuing

Firewall

Stateful firewall, connection tracking

NAT, NATP, masquerading, bridge filtering

Services

DHCP Client/Server, DNS Chaching Server, Email, SMS Service

NTP Client/Server, SNTP Server, DynDNS, SSH Server, SNMP Agent, HTTP/HTTPS/FTP Server

Voice Gateway (SIP, Call Routing, Audio)

Coovachilli Hotspot

Programmability

SDK

Troubleshooting

Logging, Ping, Traceroute, Tcpdump, Speed-test, Darkstat

Licensed Features

As a complement to the standard software feature set, we offer additional software functions that can be activated or installed with a license key.

GNSS

Standalone GNSS server that provides data via a JSON/NMEA data stream Assisted and Dead Reckoning are supported (if the hardware allows it).

OpenVPN- and DynDNS Server

Enables OpenVPN server instance with a maximum of 25 clients (instead of 10 without license) and DynDNS server.

Voice Gateway

Enables voice gateway features. Calls made over the mobile network can be connected to VoIP clients through the NetModule router and vice versa. An FXS, PTT, or audio interface can also be used for voice communication.

LXC Container

Allows the installation and execution of customer applications parallel to the router application on the same hardware. Using Linux Containers (LXC), several isolated Linux systems can be operated on the same host at the operating-system level.

FMS to IP Gateway

The software stack picks up J1939 and FMS Standard packets on the CAN interfaces and translates them to IP packets.

- Message filter function
- FMStoIP, VEHICLEtoIP according to ITxPT

ITxPT Accordance Label

The label declares the conformity of the product with the ITxPT specifications S01 v2.0.1 and S02 v2.0.1 for the following services:

- Module inventory
- Time
- GNSS location (requires GNSS license)
- FMStoIP (requires FSM2IP license)
- VEHICLEtoIP (required FSM2IP license)

Enhanced RF Configuration

Allows WiFi settings to be configured by trained personnel.

- Radio frequencies
- Antenna amplification
- Regulatory domain