

Metamako Appliance

MetaProtect™ Firewall

Latency-optimised packet filtering in
130 nanoseconds or less



Deterministic



Packet Filtering



Reliable



130 ns



MetaProtect Firewall is a powerful, 48 x 10GbE port network appliance that performs sophisticated packet filtering in parallel between port-pairs. Filtering is implemented via per-port Access Control Lists (ACL). MetaProtect Firewall provides complete flexibility in configuration, allowing authenticated administrators to create mappings between physical port-pairs and apply ACLs to one or both endpoints.

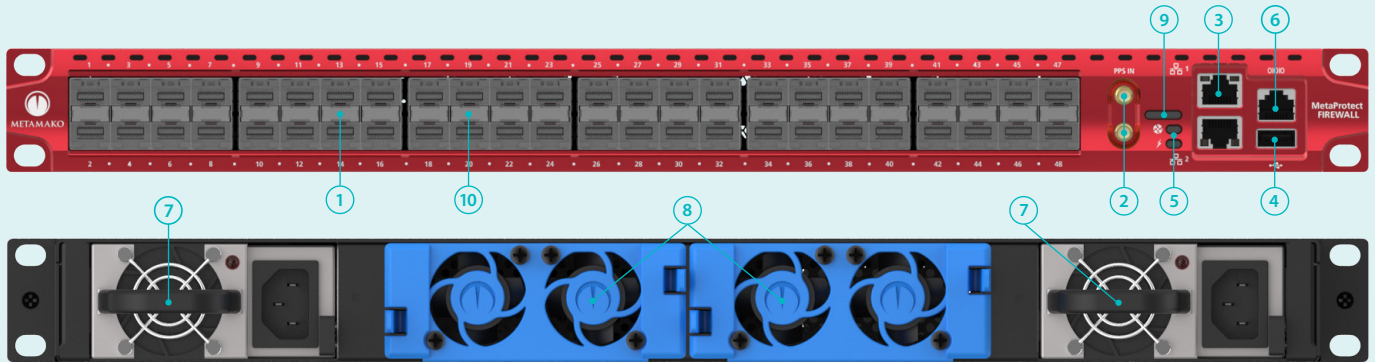
MetaProtect is architected for ultra-low-latency with packets passing an ACL being forwarded in 130 nanoseconds or less; significantly faster than most traditional firewalls.

Administrators may also define port-pairs that do not require filtering, in which case packets are passed through in 5 nanoseconds. Any ingress port, pre or post ACL, may be configured to fan out to multiple egress ports allowing for maximum flexibility based upon the desired filtering architecture.

When a packet fails an ACL, it is not forwarded and its header is logged. MetaProtect Firewall is ideal for situations where a firewall solution is mandatory but ultra-low latency as well as high port density are required.

FEATURES	BENEFITS
→ High port density	48 x 10GbE SFP+ ports in 1 RU with 32 x 10GbE Firewall filters and accelerated traffic processing capacity.
→ Parallel filtering	Cut-through filtering via 32 ACLs with up to 510 rules per ACL. Per-port filtering possible by assigning an ACL to a port.
→ Flexible ACLs	ACLs support permit/deny rules based upon source/destination IP address/Port number. IP addresses may be wild-carded using CIDR style notation.
→ Ultra-low latency filtering	Average filter latency of 130 ns for the minimum latency configuration (1 rule) to 155 ns for the maximum configuration (510 rules) - some of the fastest in the industry.
→ Flexible SFP/SFP+ support	Support of most third-party SFP/SFP+ transceivers including DWDM and direct attached copper cables, boosted by MetaProtect™ Firewall's high-performance signal recovery and regeneration.
→ Extensive packet statistics	Advanced monitoring and capture of comprehensive packet statistics across all ports. Support for detailed switch statistics via SNMP, CLI or InfluxDB.
→ 64-bit x86 management processor	Secure Linux-based platform running the Metamako Operating System (MOS), offering management and configuration via HTTPS, SSH and JSON-RCP over HTTPS.
→ Front-panel interfaces	48 x 10G SFP/SFP+ ports 2 x 100/1000BASE-T management ports 1 x PPS input & 1 x PPS output interface Console port USB port.
→ Comprehensive logging	<ul style="list-style-type: none"> • Logged statistics of permitted and denied packets • Individually logged events when packet fails an ACL, including packet information, date, time, ACL ID and reason • Logged administrative ACL rule changes • Local and remote logging via syslog.

- ① **48 SFP Ports** Works with any SFP/SFP+
- ② **SMA Connector** Pulse-per-second input and output
- ③ **Ethernet** Management 100/1000
- ④ **USB** Upgrades, storage
- ⑤ **Indicator LEDs** Fan, power, status
- ⑥ **Industry-standard console port**
- ⑦ **Dual redundant power supplies**
- ⑧ **Dual redundant fan modules**
- ⑨ **Tri-color status LED** for system-wide status
- ⑩ **Per-port link and activity LEDs**



Layer 1

- 5 ns latency with virtually no jitter when configured as pass-through
- Non-blocking matrix switching fabric connecting ports and filters
- 1/10GbE SFP/SFP+ ports
- Tap any port to any other for off-device capture/monitoring
- Configurable port-to-port fanout with regeneration
- High performance signal recovery, regeneration and conditioning (EDC on input, CDR on input and output)

Media Compatibility

- Accepts any MSA compliant SFP/SFP+ module
- Supports the majority of third-party SFP/SFP+ modules

Redundancy & Data Center

- 1 rack unit (1RU)
- Dual redundant, hot-swappable power supplies
- Dual redundant, hot-swappable fans
- Fan and power supply replacement kits are available
- Front-to-back or back-to-front air flow

Monitoring

- Packet statistics captured on every port (valid packets, invalid packets, link state)
- Fully managed SFP+ interface diagnostics including light levels, temperature and voltages
- Statistics and diagnostics stored in real-time in InfluxData time series stack for local or remote telemetry
- Statistics and diagnostics available via Syslog and SNMP
- Eye diagram for monitoring and troubleshooting signal quality
- Front panel LEDs for port activity and status

Management Platform

- Quad-core x86-64 CPU
- 8 GB RAM, on-board SSD
- Industry standard command line interface (serial/SSH/telnet)
- Web-based GUI
- Linux based (shells, scripting, Python, RPMs etc.)
- Binary compatibility with other x86-64 based Linux systems
- Firmware restore and update via USB, serial and network
- Switch subsystem API (JSON RPC API)
- Integrates InfluxData time series TICK stack providing sophisticated telemetry capability

Management Protocols

- HTTP/S, SSH, telnet
- Serial console
- PTP, NTP
- SNMP v1, v2, v3
- DHCP
- Local and remote syslog
- RADIUS and TACAS+ authentication

Operating Environment

- Temperature: 0°C to 40°C
- Humidity: 10% to 85%, non-condensing
- Maximum altitude: 3000m (9800ft)

Physical and Electrical

- Dimensions (h x w x d): 4.3 x 44.8 x 37.9cm (1.7 x 17.6 x 14.9in)
- Weight: ~8kg (17.6lbs), depending on configuration
- Maximum power: 290W
- AC voltage range: 100-240V, AC frequency: 50/60Hz
- DC voltage range: 40-72V