CUBRO
NETWORK VISIBILITY
SIMPLE | SCALABLE | SUSTAINABLE

DATA SHEET

# Cubro Packetmaster EX48400

## PRODUCT OVEREVIEW

The Packetmaster EX48400 is a high performance network packet broker that aggregates, filters, load balances and generally stears the traffic based on 4500 possible rules.

This network traffic is sent to network monitoring, security and management tools. The Packetmaster EX48400 filters and load balances traffic from 10 or 100 Gbps link to multiple 1 Gbps monitoring tools or aggregates multiple 1 Gbps links to 10 or 100 Gbps monitoring tools.

The Packetmaster EX48400 also supports traffic modification as well as changing, removing and adding VLAN, MPLS, VXLAN, NVGRE, MLA, GENEVE.

### Functions / Benefits:

- Lifetime of rules: Rules can be set with a live time counter. If the counter becomes 0, the rule will be removed automatically.
- Load balancing: L2 / L3 / L4 hash based load balancing, up to 15 load balancing groups.
- GRE Tunnel support: The device can work as end device for a GRE tunnel, for back hauling applications.
- AAA Radius support: User identification
- VXLAN Tunnel support: The device can work as end device for a VXLAN tunnel, for back hauling applications.
- Stacking of units: One Packetmaster can control several other Packetmasters. This gives the possibility to extend the amount of ports per unit.

## Network Packet Broker (NPB)

### At a glance

### Definition

A network packet broker (NPB) is a tool that receives data from number of network links; duplicates, aggregates and filters that data for the monitoring tools.

### Advantages of EX48400

- Filters and load-balances traffic from 10 or 100-Gbps link to multiple 1-Gbps monitoring tools
- Aggregates multiple 1 Gbps links to 10 or 100-Gbps monitoring tools
- Supports traffic modification as well as changing, removing and adding VLANs, MPLS, VXLAN, NVGRE/MLAG/GENEVE
- No additional software costs, all applications included in the unit price

### Extended Functions:

The management host controller of every EX unit runs a fully featured Debian Linux as operating system. On this host script languages like Python, Perl, TCL, or simple Linux shells are available to run 3rd party applications in order to extend the function of the Packetmaster. These applications can be developed by Cubro or the customer.

### Examples:

A python script reads files from a server and sets filters based on this changing data.

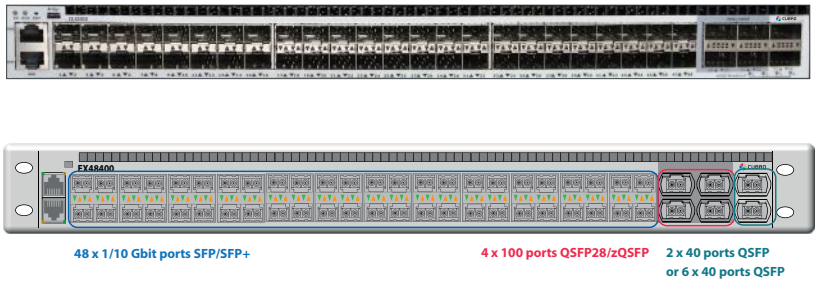
A python script changes the filters based on link load information from another Packetmaster.


A shell script pings different devices and changes filter rules based on ping response.

# PRODUCT CAPABILITIES / FEATURES

| | |
|---|---|
| Link/Port Aggregation | Aggregation many to any, and any to many at all link speeds. |
| 100 Gbps traffic de-multiplexer | The traffic can be easily de-multiplexed into 48 low traffic 10 Gbps links to monitor highly loaded 100 Gbps links. |
| Jumbo Frame Support | The Packetmaster supports jumbo Ethernet frames with a size of up to 16000 Bytes |
| Support of IPv4 and IPv6 | |
| Ports | 48 X 10 Gbps / 1 Gbps and<br>2 X QSFP 40 Gbps<br>4 x QSFP28 or zQSFP 100 Gbps<br>or<br>48 x 10 Gbps/1Gbps and<br>6 x QSFP 40 Gpbs |
| Configuration / Communication | Web and SSH |
| Bandwidth | 1920 Gbps backplane<br>3200 million Packets per sec |
| Aggregation latency | Average $< 1\ \mu s$ for 64-byte frames |
| MTBF | 178,125 hours |
| Power | 100-252 V AC power supply and DC power modules available |

# TECHNICAL DATA / SPECIFICATIONS




## Operating specifications:

Operating Temperature: 0°C to 40°C
Storage Temperature: -10°C to 70°C
Relative Humidity: 10% min, 95% max
Non-condensing

## Mechanical specifications:

Dimension (WxDxH): 484 x 495 x 43 mm
Weight: 9.4 kg
Airflow: Front-back

## Electrical specifications:

Input Power: 100-252V; 4,8 A (max.)
Maximum Power Consumption: 130W

## Certifications:

Fully RoHS compliant
CE compliant
Safety - UL 60950-1 / CSA C22.2 60950-1-07 / IEC 60950-1 (2005) EN 60950-1 (2006)

## INPUTS*

48 x 10 /1 Gbps full duplex
2 x 40 Gbps QSFP

4 x 100 Gbps full duplex QSFP28
Ports for any kind of QSFP28

* Each port can be input and/ or output depending on the application and configuration

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Ports for any kind of QSFP28

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## PERFORMANCE

Performance up to 1920 Gbps 3200 million packets/sec

Non blocking design

Boot time from power on to working 180 sec.

Packet delay through processing less than 1 $\mu$s

## MANAGEMENT

Management Port: (1) RJ45 10/100/1000 Mbit Configuration (CLI) Port: (1) RS-232 DB9
USB for software update

## INDICATORS

Per RJ45 port: Speed, Link/ Activity

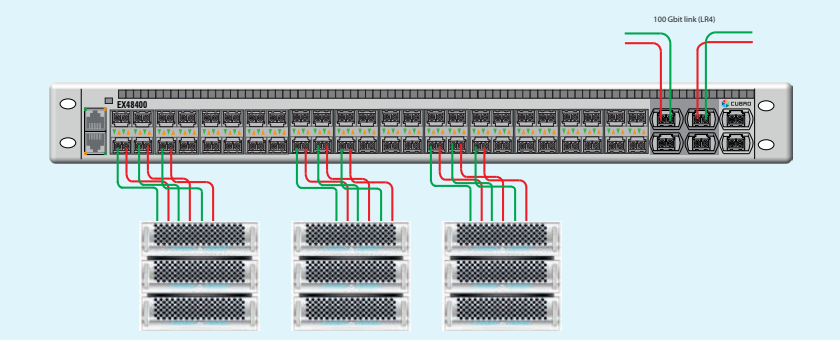
Per SFP+ port: Status, Rx, Tx, Link

Per Device: Power, Status

# APPLICATIONS / SOLUTIONS

## Load balancing

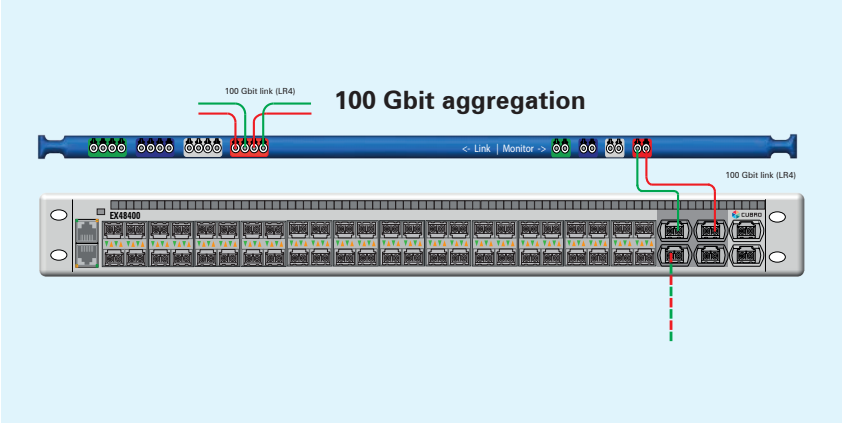
The EX48400 is connected inline to a 100 Gbit live link. The Packetmaster EX48400 can load balance 100 Gbit traffic to several 10 Gbit ports.



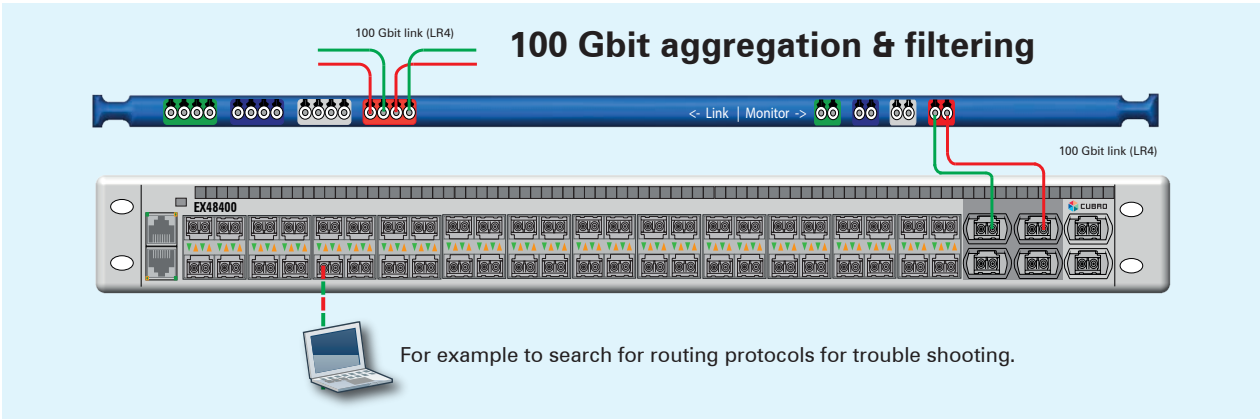

## Aggregation

The EX48400 is connected via the Cubro optical TAP to a 100 Gbit live link.

The aggregation feature combines the traffic of the two directions to one 100 Gbit output for monitoring purposes. Using the filtering capability of the Packetmaster EX48400, the user can select the portion of the traffic which is needed to solve the network problem.



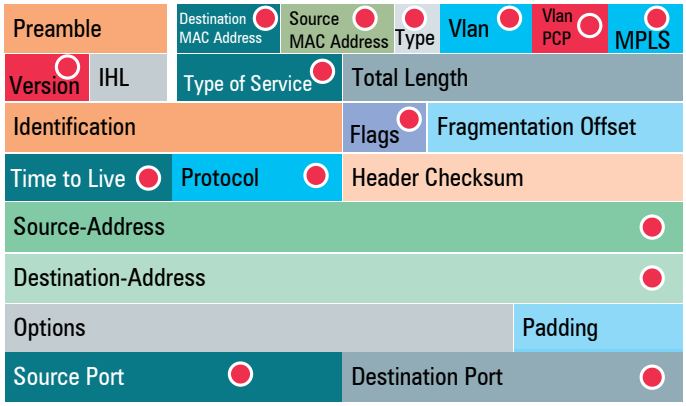

## Monitoring and trouble shooting




The Packetmaster EX48400 supports 4500 layer 4 + filters. These filters can be used to redirect a small portion of the traffic to a low end, in terms of bandwidth, monitoring tool like a PC with Wireshark and to trouble shoot routing issues on 100 Gbit link. It is also possible to feed several monitoring probes with specific traffic.

## Filtering

4500 flow rules (filters) can be set in the unit. The red dot marked fields can be used as a match for a packet, stand-alone, combined or with wild cards. For IP Src and IP Dst super nets are supported.




**Available actions after a positive match include:**

- **Send out:** To one or more ports - even the same as the input is possible.
- **Drop:** Delete the specific packet.
- **Modify:** Modify specific fields in the matched packets, VLAN, MPLS, MAC SRC, MAC DST, PORT, VLA, Priority and some more.
- **Add VLAN:** The unit can tag a VLAN on the input to separate the traffic after aggregation.
- **Strip VLAN:** VLAN can be removed, Q in Q is supported.
- **Add MPLS:** Add an MPLS Tag to a matched packet.
- **Strip MPLS:** Remove an MPLS Tag from a matched packet.
- **Stacking of rules:** This function gives the option to generate very complex filter rules.

# ORDERING INFORMATION

| Part Number | Description |
|---|---|
| CUB.PM-EX48400 | Packetmaster EX48400, 48x10G, 2x40G and 4x100G Network Packet Broker |
| CUB.PM-DC-C | DC Power supply module for Cubro Packetmaster EX20400/48400/484-3 |
| CUB.RR19-1U | Universal Rackrail Kit for 1U 19" units (Packet/Sessionmaster) |

For more information please check our website **www.cubro.com**