CUBRO NETWORK VISIBILITY
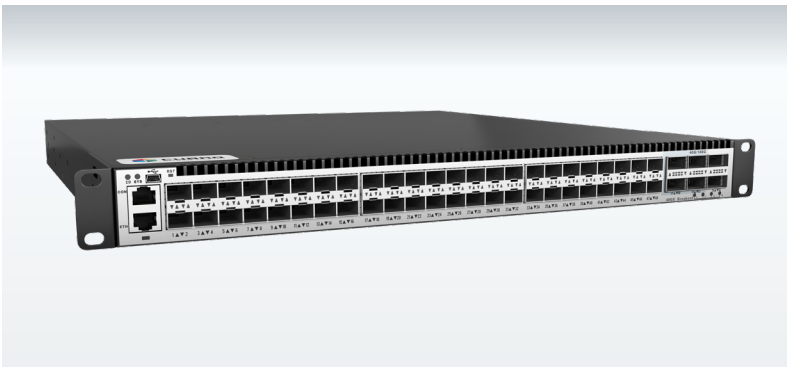SIMPLE | SCALABLE | SUSTAINABLE

Cubro Packetmaster EX48400

PRODUCT OVEREVIEW

The Packetmaster EX48400 is a high performance network packet broker that aggregates, filters, duplicates, load balances network traffic to security, monitoring and management tools based on 4500 possible rules. The Packetmaster EX48400 supports OSI Layer 2, Layer 3 and Layer 4 header modifications including stripping, adding, and modifying VLAN tags, MPLS labels, MAC addresses, IP addresses and Port numbers.

Functions / Benefits:

- Finite Rule Life: Rules can be set with a timeout period where the rule will be removed automatically after a set period of time or a set period without traffic activity. Rules can be dynamically created via the REST API.

- Generate sFLOWS CDRs: The EX48400 is able to generate standard-conform sFlow information of the incoming traffic.

- Easy to configure: Via Web GUI (HTPPS supported)

- GRE / VXLAN Tunnel support: The Packetmaster EX48400, like all Packetmaster Series NPBs, can function as a GRE / VXLAN tunnel endpoint.

- Load balancing: L2 / L3 / L4 hash-based, session aware load balancing, up to 15 load balancing groups

- Cubro Vitrum Management Suite: EX48400 is fully compatible with Cubro Vitrum, a centralized management platform for all Cubro network visibility solutions.

Network Packet Broker (NPB)
At a glance

Definition

A Network Packet Broker (NPB) is a switch-like device purpose-built to receive traffic from a variety of network sources (live link, TAPs, SPANs, mirror ports) and to filter, duplicate, and/or aggregate that traffic to monitoring and security tools.

Advantages of EX48400

- Filters and load-balances traffic from 10, 40 or 100 Gbps links to multiple 1 Gbps monitoring tools

- Aggregates multiple 1 Gbps links to 10, 40 or 100Gbps monitoring tools

- 48 x 1/10 Gbps (SFP/SFP+) and 4 x 40/100 Gbps (QSFP/QSFP28)

- Supports traffic modification up to layer 4 as well as changing, removing and adding VLAN, MPLS, VXLAN, NVGRE, GRE, GENEVE tags/tunnels

- Up to 4500 parallel rules

- IPv6 support

- No additional port licensing fees or software feature licensing. All features and applications included in the unit price.

- 2-year warranty period

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Examples:

Extended Functions:

The management host controller of every Packetmaster EX unit runs a minimal Debian Linux OS as the operating system. This Linux OS natively supports core Unix shell commands and utilites, shell scripting, Python 2.7, and the VI text editor. This allows the user to create and run custom scripts and command sets to extend the functionality of the Packetmaster EX for their environment. Cubro can also create custom application for the customers specific needs as well.

A Perl script collects counters and writes these counters in an external SQL Database for later analysis.

A Python script reads files from a server and creates filters based on this data.

A Python script dynamically changes filters based on link load data collected 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 demultiplexer	The traffic can be easily demultiplexed 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	Yes
Ports	48 x SFP/SFP+ 1 or 10 Gbps 2 x QSFP 40 Gbps 4 x QSFP/QSFP28 40/100 Gbps 1 x 10/100/1000 Base-T (Management) 1 x RS232 Console 1 x USB
Configuration / Communication	Web GUI, CLI via SSH or Telnet, REST API, SNMP, RADIUS
Bandwidth	1920 Gbps backplane 100 % throughput without any packet loss
Aggregation latency	Average $< 1\,\mu$s for 64-byte frames
MTBF	178,125 hours
Different Power Versions	100-252 V AC power supply (DC power modules available)

TECHNICAL DATA / SPECIFICATIONS

Operating specifications:

Operating Temperature: 0ºC to 40ºC
Storage Temperature: -10ºC to 70ºC
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:

AC:
Input Power: 100-240V, 2A, 47-63 Hz
Maximum Power Consumption: 310W
DC:
Input 36-75V, 16A
Maximum Power Consumption: 330W

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 1 Gbps / 10 Gbps full duplex SFP Ports for any kind of SFP/SFP+
2 x 40 Gbps / 4 x 100 Gbps full duplex QSFP Ports for any kind of QSFP/QSFP28

* Each port can be input and/ or output depending on the application and configuration
*All QSFP ports support breakout cables to 4 x 1/10G interfaces

OUTPUTS*

48 x 1 Gbps / 10 Gbps full duplex SFP Ports for any kind of SFP/SFP+
2 x 40 Gbps / 4 x 100 Gbps full duplex QSFP Ports for any kind of QSFP/QSFP28

* Each port can be input and/ or output depending on the application and configuration
*All QSFP ports support breakout cables to 4 x 1/10G interfaces

PERFORMANCE

Performance up to 1920 Gbps

Non blocking design

Boot time from power on to working 180 sec.

Packet delay through processing less than 1 μs
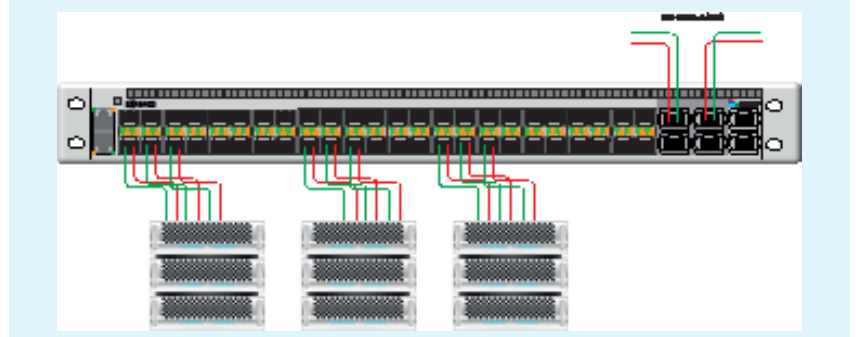
MANAGEMENT

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

# 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 receives traffic from a 100G live link via the monitor ports of an inline TAP.

he EX48400 aggregates the Tx and the Rx sides of the duplex link to a single 100 Gbit port for monitoring purposes. By utilizing the filtering abilities of the EX48400 the user can isolate only the traffic necessary to troubleshoot the network problem.
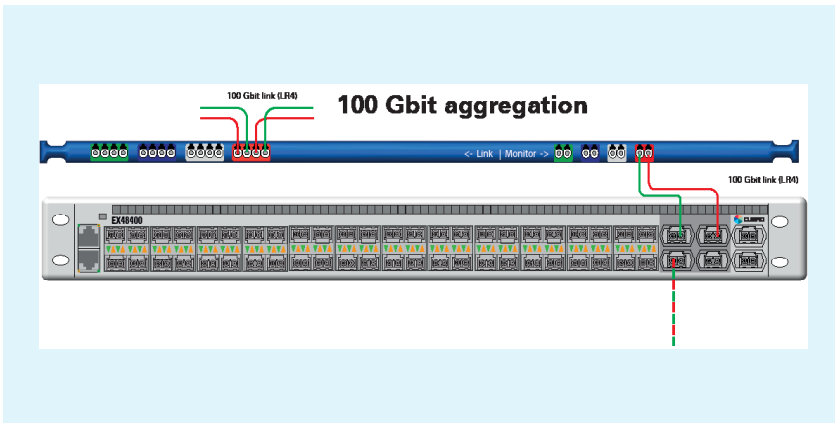
Monitoring and trouble shooting
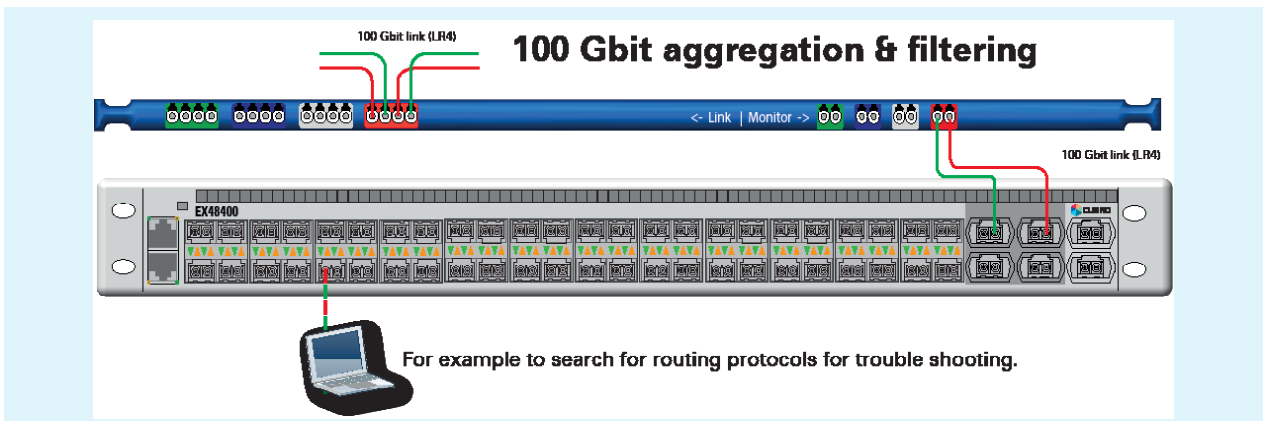
The Packetmaster EX48400 supports 4500 filters that can classify traffic based on layer 2 through 4 criteria. These filters can be used to redirect a selected part of the traffic to a low bandwidth monitoring tool, like a PC with Wireshark to trouble shoot an issue on a 100 Gbit link (such as a routing problem).

Filtering

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

Available actions after a positive match include:

- Output: Forward the traffic to one or more ports (even the input port)

- Drop: Drop (discard) the traffic

- Modify: Modify header information such as VLAN tag, MPLS label, source MAC, destination MAC, source IP, destination IP, source Port, and destination Port.

- Add VLAN tag: The Packetmaster EX units can add or append VLAN tags to the filtered traffic to separate or identify it after aggregation/output. (Up to six VLAN tags are possible).

- Strip VLAN: Remove VLAN tag(s) (Q in Q support).

- Add MPLS: Add an MPLS Tag to a matched packet

- Strip MPLS: Remove an MPLS Tag from a matched packet

- Rule Priority/Rule Stacking: The ability to prioritize filtering rules allows for very complex filtering possibilities.

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)

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