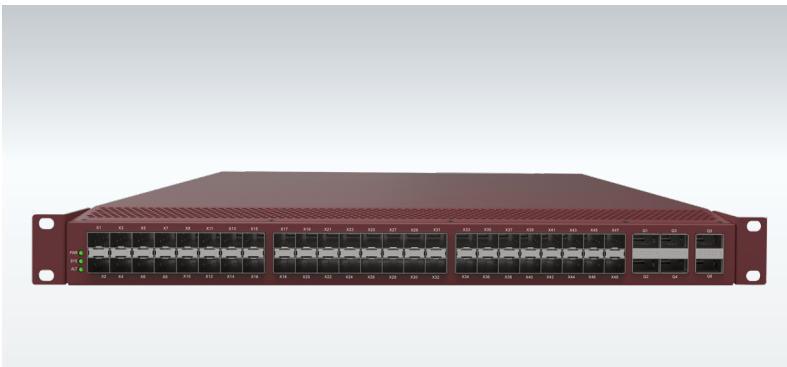


# Cubro Packetmaster EX48600

## PRODUCT REVIEW



The Packetmaster EX48600 is a high performance network packet broker up to Layer 4 that aggregates, filters, duplicates, load balances network traffic to security, monitoring and management tools based on 8000 possible rules. The Packetmaster EX48600 is based on newest and the most advanced ASIC available on the market. It is built with an advanced Cavium multi-core host controller and the biggest network buffer RAM in the industry. The manageable buffer size helps to overcome bursting issues in aggregation applications.

### Functions / Benefits:

- Easy to configure: Via Web GUI (HTTPS supported)
- Load balancing: L2 / L3 / L4 hash-based, session aware load balancing, up to 32 load balancing groups
- Cubro Vitrum Management Suite: EX48600 is fully compatible with Cubro Vitrum, a centralized management platform for all Cubro network visibility solutions.
- Filtering on multiple parameters up to OSI Layer 4 including VLAN tags, IP addresses and TCP / UDP port numbers.
- Software upgrade path to EXA48600 (advanced Layer 5 capabilities)

## 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 EX48600

- 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 6 x 40/100 Gbps (QSFP/QSFP28)
- Up to 8000 parallel rules
- Packet slicing support (64 B, 128 B, 192 B)
- IPv6 support
- No additional port licensing fees or software feature licensing. All features and applications included in the unit price.
- 2-year warranty period

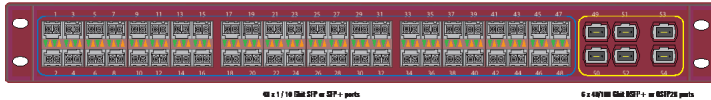
## Extended Functions:

The management host controller of the EX32100 is a cavium multicore processor unit which runs a full featured Cubro OS as operating system. On this host, script languages like Python, Perl, TCL, or simple Linux shells are available to run 3rd party applications which extend the function of the Packetmaster. These applications can be developed by Cubro or the customer.

## PRODUCT CAPABILITIES / FEATURES

Filtering	Up to layer 4
Symmetric L4 load balancing based on selectable hash	Supported hashing: 5 tuple, IP source, IP destination, Port source and Port destination
GTP header stripping	Supported (for filtering inside GTP tunnel EXA48600 required)
VLAN adding and stripping	Supported up to 3 VLAN tags
Jumbo Frame Support	The Packetmaster supports jumbo Ethernet frames with a size of up to 16000 bytes.
Packet Buffer	24 MB
Ports	48 X 10 Gbps / 1 Gbps and 6 X QSFP 40 Gbps / 100 Gbps
Configuration / Communication	Web GUI, CLI via SSH, REST API, SNMP
Performance	Non blocking design, 100 % throughput without any packet loss 2.160 Tbps backplane
CPU	Cavium Xpliant & Mips64 48 Core as Host
MTBF	201,743 hours
Different Power Versions	100-252 V AC power supply (DC power modules available)

# TECHNICAL DATA / SPECIFICATIONS



## Operating specifications:

Operating Temperature: 0°C to 45°C  
 Storage Temperature: -10°C to 70°C  
 Relative Humidity: 10% min, 95% max (non-condensing)

## Mechanical specifications:

Dimension (HxWxD): 440 x 660 x 44  
 Weight: 8.6 kg  
 Airflow: Front-back

## Electrical specifications:

Input Power: 100-240V, 2A, 47-63 Hz (AC version)  
 Maximum Power Consumption: 400W

## 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 1/10 Gbps full duplex Ports for any kind of SFP/SFP+  
 6 x 40/100 Gbps full duplex ports for any kind of QSFP/QSFP28  
 \* Each port can be input and / or output depending on the application and configuration  
 \*All QSFP/ QSFP 28 ports support breakout cables to 4x10G interfaces

## OUTPUTS\*

48 x 1/10 Gbps full duplex Ports for any kind of SFP/SFP+  
 6 x 40/100 Gbps full duplex ports for any kind of QSFP/QSFP28  
 \* Each port can be input and / or output depending on the application and configuration  
 \*All QSFP/ QSFP 28 ports support breakout cables to 4x10G interfaces

## PERFORMANCE

Performance up to 64000 Gbps  
 Non-blocking design  
 Boot time from power on to working 180 sec  
 Packet delay through processing constant at 700 ns

## MANAGEMENT

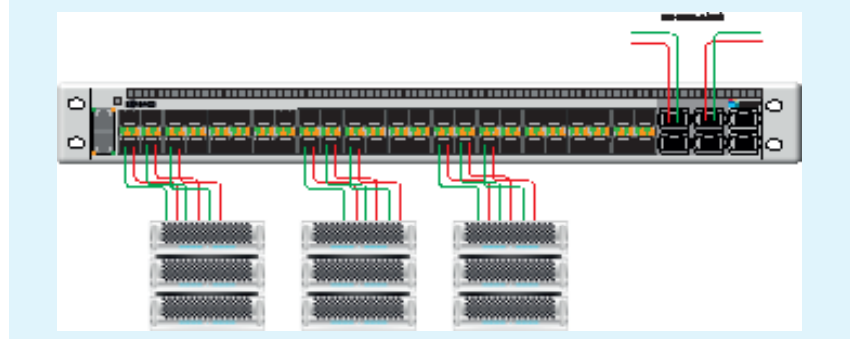
Management Port: (1) RJ45  
 10/100/1000 Mbit Configuration (CLI) Port: (1) RS-232 DB9  
 USB for software update

# APPLICATIONS / SOLUTIONS



## Load balancing

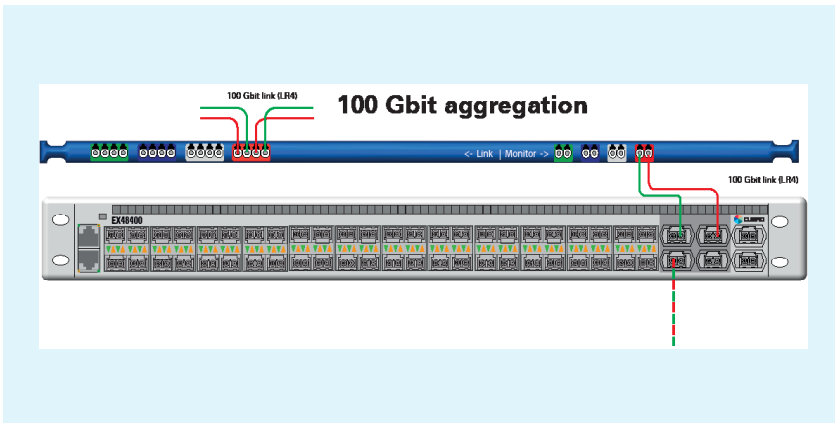
The EX48600 is connected inline to a 100 Gbit live link. The Packetmaster EX48600 can load balance 100 Gbit traffic to several 10 Gbit ports.



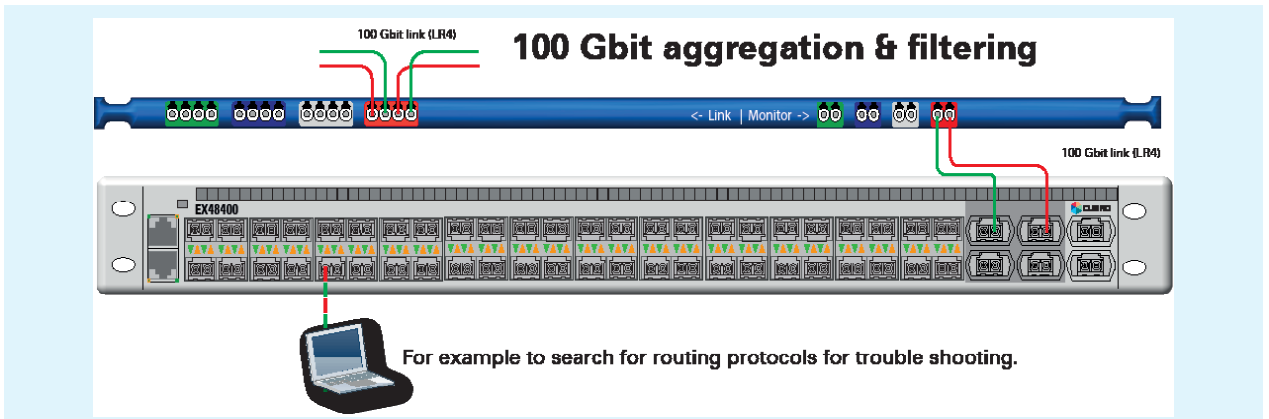
## Aggregation

The EX48600 receives traffic from a 100G live link via the monitor ports of an inline TAP.

The EX48600 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 EX48600 the user can isolate only the traffic necessary to troubleshoot the network problem.

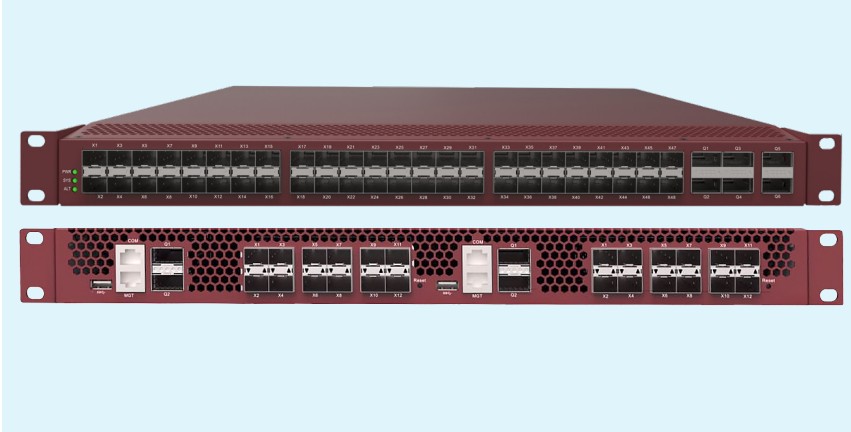


## Monitoring and trouble shooting



The Packetmaster EX48600 supports 8000 filters that can classify traffic. 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).

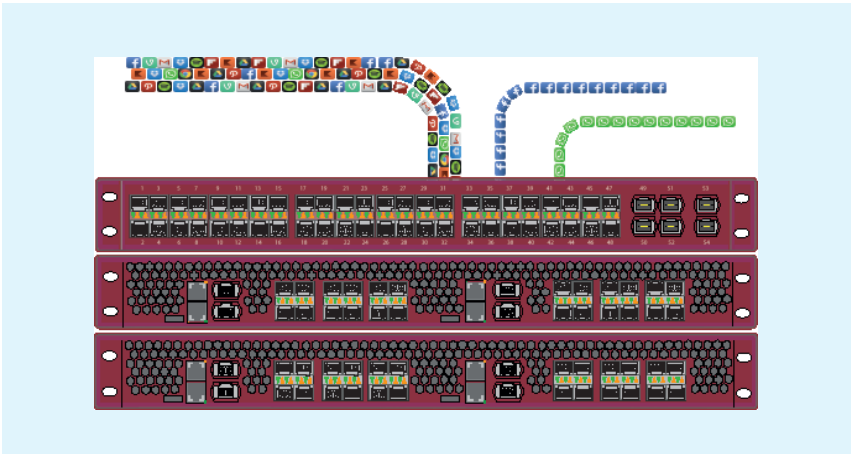
# ADVANCED FUNCTION DESCRIPTION



## Session meets packet:

Packet based filtering is not always sufficient. Session based filtering cannot be done with ASIC or FPGA and normal CPU is not capable of handling TB of traffic.

The combination of EX48600 with EXA24160 (Sessionmaster) is an extremely powerful solution for Layer 7 Session aware applications.



## Application based filtering:

The combination of EX48600 and EXA24160 offers a powerful solution for layer 7 session-aware filtering. This means it is possible to filter on applications, keywords, or any wanted Regex. This shown application can support up to multiple 100 Gbps traffic, depending on how many session fabrics are used.

The EX48600 aggregates, filters and load balances the traffic and forwards the traffic to the session fabric. The session fabric analyzes the traffic and tags it based on application key before forwarding it back to EX48600. The traffic is sent to other tools for more inspection. Currently, up to 1000 application keys are available.

## GTP Application:

The EX48600 supports removal of GTP headers. For more advanced GTP related applications such as inner IP Filtering and Load Balancing by means of inner IP , it is possible to upgrade EX48600 to EXA48600.

## ORDERING INFORMATION

### Product Components:

- Cubro Packetmaster EX48600
- AC/DC power supply
- European power cord
- Transceivers not included

Part Number	Description
CUB.PM-EX48600	Packetmaster EX48600, 48x10G and 6x100G QSFP28, AC power supply
CUB.PM-EX48600-DC	Packetmaster EX48600, 48x10G and 6x100G QSFP28, DC power supply

For more information please check our website [www.cubro.com](http://www.cubro.com)