



**CUBRO**  
NETWORK VISIBILITY

EX5-3



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DATA SHEET

# 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 EX5-3

- Filters and load balances traffic from 10 Gbps links to multiple 1 Gbps monitoring tools
- Aggregates multiple 1 Gbps links to 10 Gbps monitoring tools
- 48 x 10/100/1000 Base-T ports
- 4 x 1/10 Gbps (SFP/SFP+)
- Supports traffic modifications up to layer 4 as well as changing, removing and adding VLAN and GRE tags/tunnels
- Up to 3500 parallel rules
- IPv6 support
- 2-year warranty period

## Product Overview



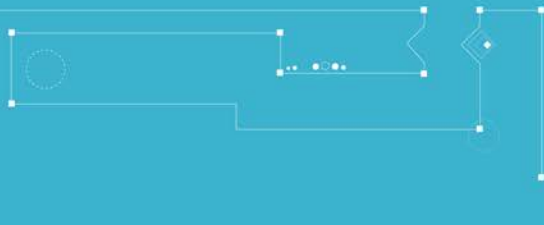
The Packetmaster EX5-3 is Cubro's first Hybrid Network Packet Broker. It combines a packet broker with traditional features of a network switch. This unique setup makes the solution more flexible compared to conventional solutions where each component is a separated hardware. The unit can be used inline and filter out specific traffic and send it to a probe.

The EX5-3 also offers 4 x 1/10G SFP+ interfaces. The EX5-3 shines in requirements where copper-based tools need access to fiber-based network infrastructure. Granular filtering options and the ability to support session-aware load balancing keep copper-based tools relevant even in networks where the infrastructure has moved to 10G speeds.

The EX5-3 is an excellent choice in network environments that are still heavily based on CAT5/5e/6/6a/7 cabling or where it is critical to get copper-based monitoring and security tools access to 1G and 10G fiber links.

## Functions / Benefits:

- Filtering and Load Balancing from L2 to L4
- Easy to configure: Via Web GUI
- GRE / VXLAN Tunnel support: The Packetmaster EX5-3, like all Packetmaster Series NPBs, can function as a GRE / VXLAN tunnel endpoint.
- Session aware load balancing, up to 15 load balancing groups
- Cubro Vitrum Management Suite: EX5-3 is fully compatible with Cubro Vitrum, a centralized management platform for all Cubro network visibility solutions.



## Extended Functions:

The management host controller of every EX unit runs a full 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 to extend the function of the Packetmaster. These applications can be developed by Cubro or the customer.

### Examples:



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



A Python script collects counters and writes them to an SQL database for later analysis.



A Python script dynamically changes filters based on link load data collected from another Packetmaster.



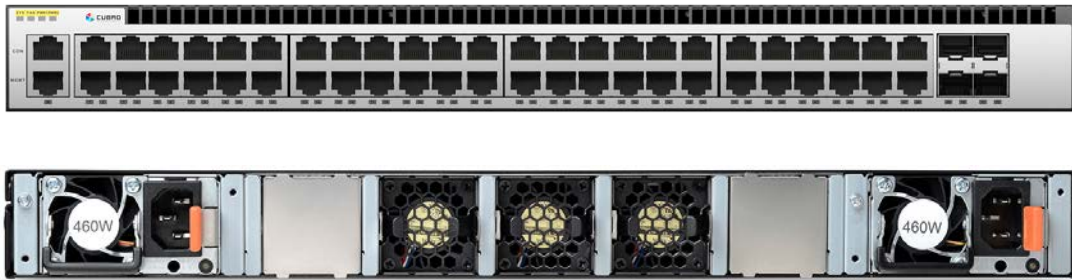
A shell script pings different devices and changes filter rules based on ping response.

## Product Capabilities / Features

Link/Port Aggregation	Aggregation many to any, and any to many at all link speeds.
10 Gbps traffic demultiplexer	The traffic can be easily demultiplexed into 24 low traffic Gbps links to monitor highly loaded 10 Gbps links.
Jumbo Frame Support	The Packetmaster supports jumbo Ethernet frames with a size of up to 12000 bytes
Support of IPv4 and IPv6	Yes

Ports	48 x 10/100/1000 Mbps Base-T 4 x SFP/SFP+ 1/10 Gbps 1 x 10/100/1000 Base-T (Management) 1 x RS232 Console
Configuration / Communication	Web GUI, CLI via SSH or Telnet, REST API, SNMP, RADIUS
Bandwidth	176 Gbps backplane 100 % throughput without any packet loss
Aggregation latency	Average 1 $\mu$ s for 64-byte frames
MTBF	196.750 hours
Different Power Versions	100-230V AC in single and dual power supply versions available DC Power modules available

## Technical Data / Specifications



### Inputs\*

48 x 10/100/1000 Mbps Base-T ports  
4 x 1/10G Gbps full duplex SFP+ Ports for any kind of SFP/SFP+

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

### Outputs\*

48 x 10/100/1000 Mbps Base-T ports  
4 x 1/10G Gbps full duplex  
SFP Ports for any kind of SFP/SFP+

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

## Performance

- Performance up to 176 Gbps
- Non-blocking design
- Estimated boot time up to 280 sec
- Packet delay through processing less than 1  $\mu$ s

## Management

RJ45 10/100 Mbps; ssh and/or Web GUI  
RS-232 Serial; CLI

## 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 (WxDxH): 44 X 37 X 4.36 cm  
Weight: 6,1 kg (Includes 2 Power Modules)  
Airflow: Front-back  
Quantity of Fans: 3  
(NOT Hot swappable)

## Electrical specifications:

Input Power: 100-240V  
Maximum Power Consumption: 60W

## Certifications:

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

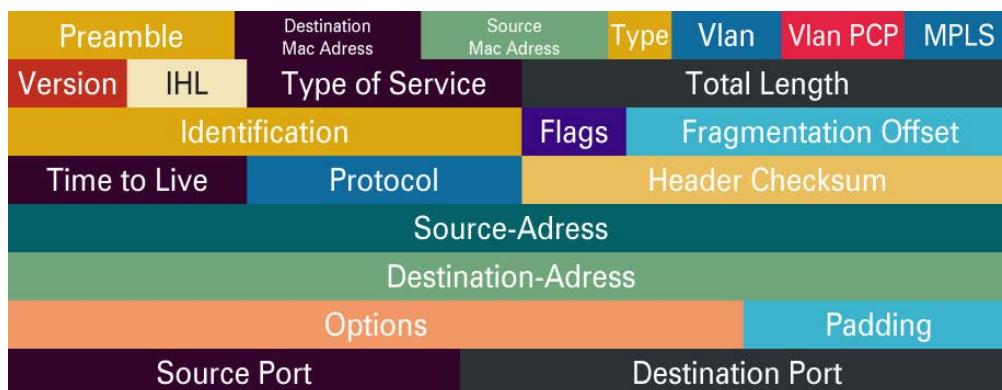
## Applications / Solutions

### Aggregation

Traffic aggregation from many input ports to one or many output ports. This also works with different link speeds of up to 10 Gbps.

### Filtering

3500 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 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, 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).
- **Rule Priority/Rule Stacking:** The ability to prioritize filtering rules allows for very complex filtering possibilities.

### Session Aware Load Balancing

The EX5-3 supports Session Aware Load balancing by means of selectable hash-criteria. Thus, every packet that belongs to the same conversation/flow is sent to the same output port within a load-balancing group.

## Ordering Information

Part Number	Description
CUB.PM-EX5-3	Packetmaster EX5-3, 48x1G Base-T and 4x10G Network Packet Broker
CUB.PM-DC-D	DC Power supply module for Cubro Packetmaster EX5-3 and EX6-3
CUB.RR19-1U	Universal Rackrail Kit for 1U 19" units (Packet/Sessionmaster)

## Spare parts:

Part Number	Description
CUB.PM-AC-D	AC Power supply module for CUBRO Packetmaster EX5-3 and EX6-3
CUB.PM-DC-D	DC Power supply module for CUBRO Packetmaster EX5-3 and EX6-3

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