

# Cubro Packetmaster EX 5-2



The Packetmaster EX-5 is a modern Network Packet Broker and network controller switch that aggregates, filters and load balances network traffic sent to network monitoring, security and management tools. Packetmaster EX-5 allows you to filter and load-balance traffic from 10 Gbps link to multiple 1-Gbps monitoring tools or aggregate multiple 1-Gbps links to 10 Gbps monitoring tools. Packetmaster EX-5 also supports traffic modification as well as changing, removing and adding VLAN's.

**No additional software costs all applications included in the unit price.**

## Extended Function:

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 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 an other packetmaster.



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

## Functions & Features

### Link/Port Aggregation

Aggregation many to any, and any to many at all link speeds

### 10 Gbps traffic demultiplexer

If highly loaded 10 Gbps links have to be monitored the traffic can be easily demultiplexed into 24 low traffic Gbps links.

### Jumbo Frame Support

The Packetmaster supports jumbo Ethernet frames with a size of up to 12000 Bytes.

### Support of IPv4 and IPv6.

### Ports

48 x 10/100/1000 Gbps Base-T  
4 x SPF+ 10 Gbps  
1 x 10/100/1000 Base-T (Management)  
1 x RS232 Console

### Configuration / Communication

Telnet and SSH /Radius Support

### Bandwidth

176 Gbps backplane  
150 million Packets per sec

### Aggregation latency

Average 1  $\mu$ s for 64-byte frames

### MTBF

196,750 hours

### Power

230 VAC in single and dual power supply versions available.

### Operating Temperature

0 to 45°C

### Operating Humidity

90% maximum relative humidity

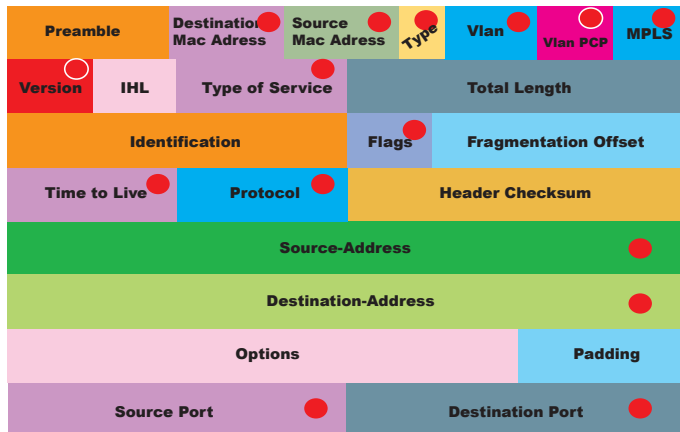
### Dimension

W=435.00 mm, L=393.70 mm, H=42.80 mm

## General Functions

**Aggregation:** Traffic aggregation from many input ports to one or many output ports. This works also with different link speed up to 10 Gbps.

**Filtering:** 12000 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 functions after a positive match are:**

**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, VLAN 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.

**Lifetime of rules:** Rules can be set with a live time counter, if the counter becomes 0 the rule will be removed automatically

**Generate nFLOWS and sFLOWS CDRS:**

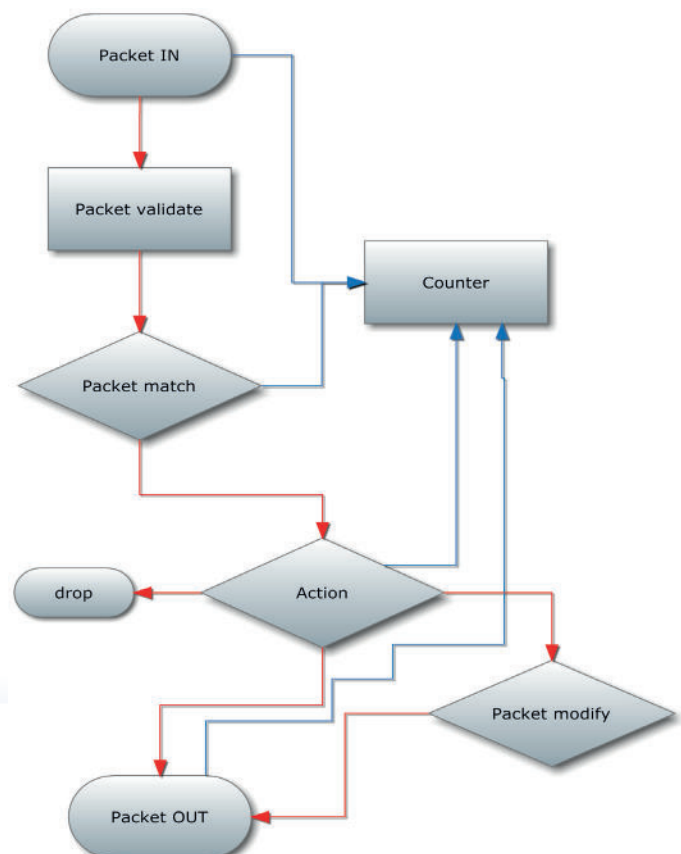
The EX 5 can send standard nFlow or sFlow CDRS to a collector devices to monitor the traffic processed by the EX 5. These devices can produce graphs and snmp traps for northbound signalization.

**GRE Tunnel support:** The device can work as end device for a GRE tunnel, for back hauling applications.

**Load balancing:** L2 / L3 hash based load balancing, up to 10 load balancing groups.

**AAA Radius support:** user identification

**Stacking of units:** one Packetmaster can control several other Packetmasters. This gives the possibility to extend the amount of ports per unit.



## Technical Data

[illegible]

## 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 (HxWxD): 42.8 x 435 x 393.7 mm

Weight : 7.2 kg

### Electrical Specifications:

Input Power: 100-240V, 2A, 47-63Hz

Maximum power consumption: 170W

## 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 10/100/1000 Gbps full duplex  
SFP Ports for any kind of SFP

4 x 10 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 0/100/1000 Gbps full duplex  
SFP Ports for any kind of SFP

4 x 10 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

150 million packets/sec

## Non blocking design

Boot time from power on to working 280 sec.

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

## Management

**Management Port: (1) RJ45 10/100 Mbit**  
**Configuration (CLI) Port: (1) RS-232 DB9**

## Indicators

Per RJ45 port: Speed, Link/ Activity  
Per SFP+ port: Status, Rx, Tx, Link  
Per device: Power, Status