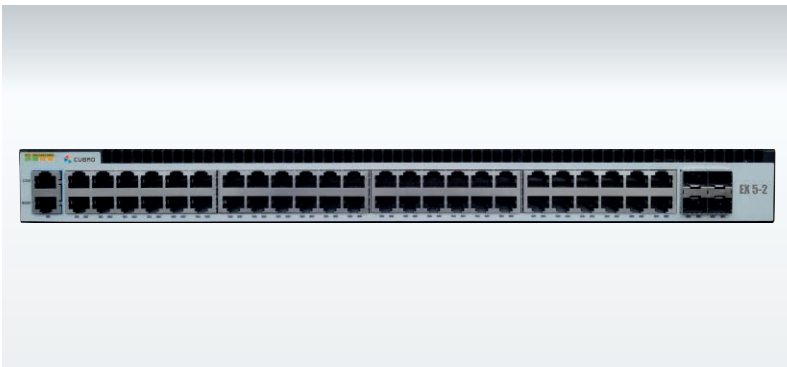


Cubro Packetmaster EX5-2

PRODUCT OVERVIEW



The Packetmaster EX5-2 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. The Packetmaster EX5-2 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. The product also supports traffic modification as well as changing, removing and adding VLANs.

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.
- Generate sFLOWS CDRS: The EX5-2 can send standard nFlow or sFlow CDRS to collector devices to monitor the traffic processed by the EX5-2. 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.
- 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.

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 EX5-2

- Filters and load balances traffic from 10 Gbps link to multiple 1 Gbps monitoring tools
- Aggregates multiple 1-Gbps links to 10 Gbps monitoring tools
- L2 / L3 hash based load balancing, up to 10 load balancing groups.
- No additional software costs, all applications included in the unit price

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 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.
10 Gbps traffic de-multiplexer	If highly loaded 10 Gbps links have to be monitored, the traffic can be easily de-multiplexed 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 Mbps 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 μ s for 64-byte frames
MTBF	196,750 hours
Power	100-230 VAC in single and dual power supply versions available 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 380 x 43 mm
 Weight: 5,5 kg

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)

INPUTS*

48 x 10/100/1000 Mbps 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 10/100/1000 Mbps 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 μ s

MANAGEMENT

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

INDICATORS

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

APPLICATIONS / SOLUTIONS



Aggregation

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

Preamble	Destination Mac Address	Source Mac Address	Type	Vlan	Vlan PCP	MPLS
Version	IHL	Type of Service	Total Length			
Identification			Flags	Fragmentation Offset		
Time to Live	Protocol	Header Checksum				
Source-Address						
Destination-Address						
Options					Padding	
Source Port			Destination Port			



Filtering

2000 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, 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
- **Stacking of rules:** this function gives the option to generate very complex filter rules.



Load balancing

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

ORDERING INFORMATION

Part Number	Description
CUB.PM-EX5-2	Packetmaster EX5-2, 48x1G Base-T and 4x10G Network Packet Broker
CUB.PM-DC-B	DC Power supply module for CUBRO Packetmaster EX5-2/12/32/32+
CUB.RR19-1U	Universal Rackrail Kit for 1U 19" units (Packet/Sessionmaster)

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