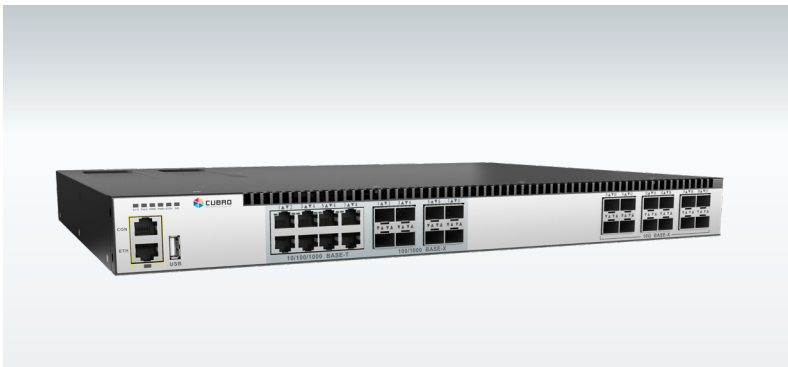# Cubro Packetmaster EX12

PRODUCT OVERVIEW

The Packetmaster EX12 is a network packet broker and network controller switch that aggregates, filters, duplicates and load balances network traffic sent to network monitoring, security and management tools. The EX12 filters and load balances traffic from 10 Gbps link to multiple 1 Gbps monitoring tools or aggregates multiple 1 Gbps links to 10 Gbps monitoring tools. The Packetmaster series supports OSI Layer 2, Layer 3 and Layer 4 header modification including stripping, adding, and modifying VLAN tags, 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 EX12 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 EX12, 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: EX12 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 EX12

- Filters and load-balances traffic from a 10 Gbps link to multiple 1Gbps monitoring tools
- Aggregates multiple 1 Gbps links to 10 Gbps monitoring tools
- Supports traffic modification as well as changing, removing and adding VLANs
- No additional port licensing fees or software feature licensing. All features and applications included in the unit price.
- 8 x 10/100/1000 Base-T or 8 x 1000 Base-X & 12 x 10 Gbit SFP+
- IPv 6 support
- Up to 2000 parallel rules
- 2-year warranty period

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.

Examples:

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
Traffic demultiplexing	Incoming traffic can be easily demultiplexed into several output ports - e.g. n x 10G into m x 1G
Jumbo Frame Support	The Packetmaster supports jumbo Ethernet frames with a size of up to 9216 bytes
Support of IPv4 and IPv6	Yes
Ports	8 x 10/100/1000 Base T or 8 x 100/1000 Base X SFP 12 x SPF+ 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	256 Gbps backplane 100 % throughput without any packet loss
Aggregation latency	Average 1 μs for 64-byte frames
MTBF	196,750 hours
Rugged 19″ housing	The Packetmaster EX12 is housed in a rugged 19″ 1RU chassis with precise connector labelling on the front panel.
Different Power Versions	100- 240 V AC dual 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 (W X D X H): 484 X 365 X 43 mm
Weight: 5,6 kg
Airflow: Front-back

Electrical specifications:

Input Power: 100-240V
DC Receptacle: Terminal peak, 12-14 gauge wire
Maximum Power Consumption: 100W

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*

8 x 10/100/1000 Gbps full duplex Base-T
8 x 100/1000 Gbps full duplex Base-X
12 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*

8 x 10/100/1000 Gbps full duplex Base-T
8 x 100/1000 Gbps full duplex Base-X
12 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

PERFORMANCE

Performance up to 256 Gbps
Non-blocking design
Estimated boot time up to 280 sec
Packet delay through processing less than 1 μs
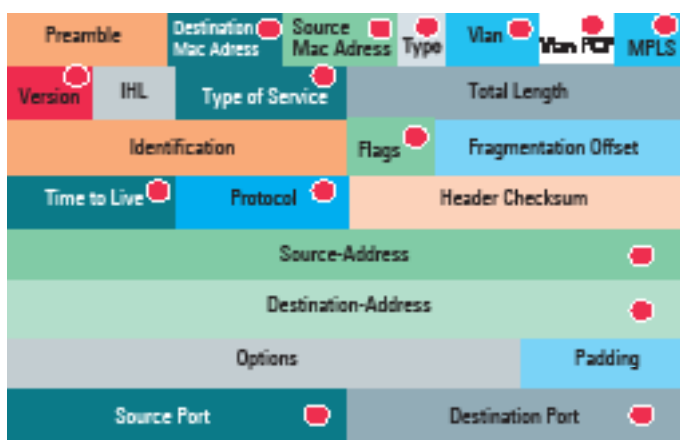
MANAGEMENT

RJ45 10/100 Mbps; ssh and/or Web GUI

RS-232 Serial; CLI

APPLICATIONS / SOLUTIONS

Aggregation

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

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 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)

• **Rule priority/Rule Stacking**: The ability to prioritize filtering rules allows for very complex filtering possibilities.
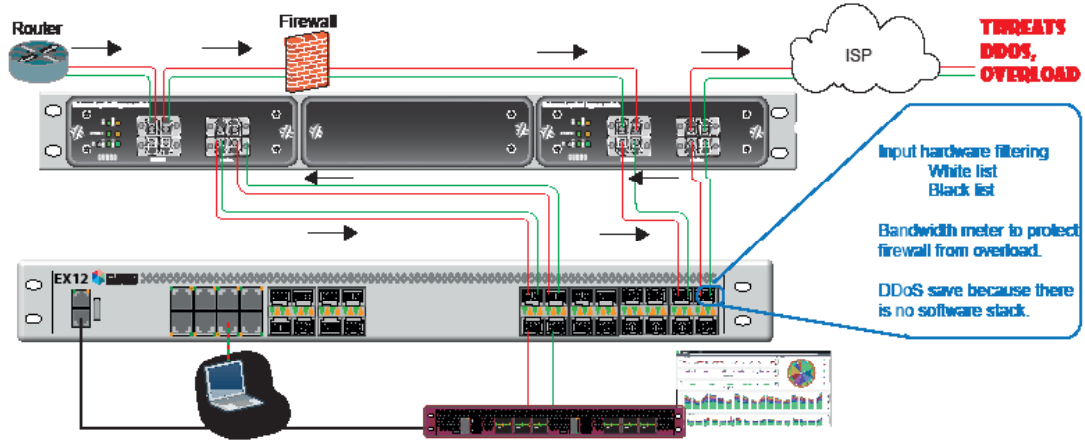
Session Aware Load Balancing

The EX12 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.

4 x Ports Base-T 10/100/1000 Mbps or 4 x Ports SFP 1000 Mbps   12 x 10 Gbit ports SFP+
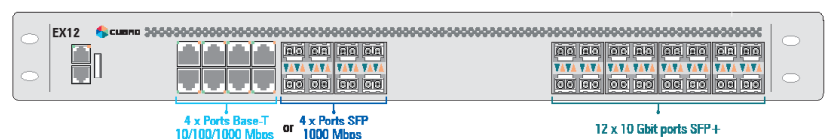
Bypass

A bypass is a hardware device that provides a fail-safe access port for an in-line active security appliance. The EX12 monitors the health of the active in-line appliance by sending heartbeat packets through the security appliance and detecting them after they have passed through the device. If the security appliance fails then the heartbeat will not be detected and the EX12 can either reroute the traffic around the failed security appliance or reroute the traffic through a spare standby unit.

ORDERING INFORMATION

Part Number	Description
CUB.PM-EX12	Packetmaster EX12, 8x10/100/1000 Base-T or 8x 1000 Base-X and 12x10G 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)

Product Components:
• Packetmaster EX12
• AC, DC power modules available
• Europe/US/UK power cords available

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