![Cubro Network Visibility logo — SIMPLE | SCALABLE | SUSTAINABLE]
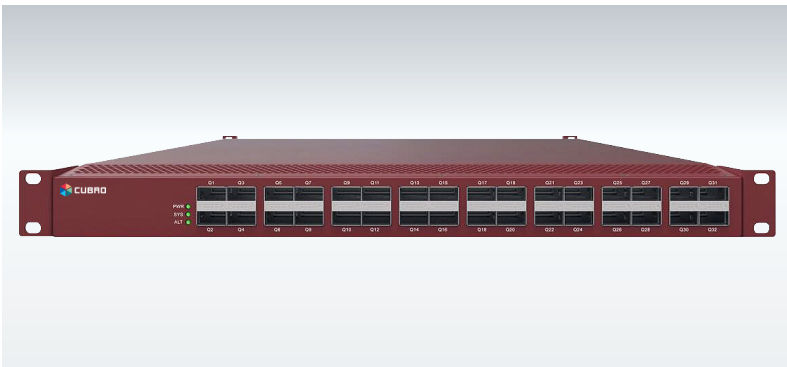
Cubro Packetmaster EX32100

PRODUCT OVERVIEW

The Packetmaster EX32100 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 EX32100 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 (HTPPS supported)

- Load balancing: L2 / L3 / L4 hash-based, session aware load balancing, up to 32 load balancing groups

- Cubro Vitrum Management Suite: EX32100 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 EXA32100 (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 EX32100

- Filters and load-balances traffic from 10, 40 or 100 Gbps links to multiple 10 Gbps monitoring tools

- Aggregates multiple 10 Gbps links to 40 or 100 Gbps monitoring tools

- 32 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.
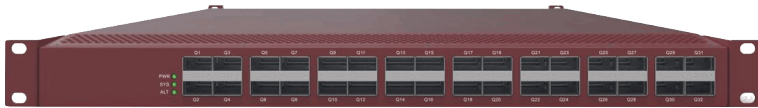
- 2-year warranty period

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

Link/Port Aggregation	Aggregation many to any, and any to many at all link speeds
100 Gbps traffic demultiplexer	The traffic can be easily de-multiplexed into 40 links to monitor highly loaded 100 Gbps links.
Jumbo Frame Support	The Packetmaster supports jumbo Ethernet frames with a size of up to 16000 bytes.
Support of IPv4 and IPv6	Yes
Ports	32 x QSFP 40 Gbps or QSFP28 100 Gbps 1 x 10/100/1000 Base-T (Management) 1 x RS232 Console
Configuration / Communication	Web GUI, CLI via SSH, REST API, SNMP
Performance	6.4 Tbps backplane 100 % throughput without any packet loss
Aggregation latency	Average < 700 ns for 64-byte frames
MTBF	201.743 hours
Packet Buffer	24 MB
Different Power Versions	Dual 100-230 V AC or DC power version available

TECHNICAL DATA / SPECIFICATIONS

INPUTS*

32 x 40 Gbps / 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*

32 x 40 Gbps / 100 Gbps full duplex Ports for any kind of QSFP/QSFP+

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

*All QSFP/ QSFP 28 ports support breakout cables to 4x10G interfaces

Operating specifications:

Operating Temperature: 0ºC to 40ºC
Storage Temperature: -10ºC to 70ºC
Relative Humidity: 10% min, 95% max (non-condensing)

Mechanical specifications:

Dimension (WxDxH): 490 x 593 x 42,8 mm
Weight: 10,0 kg
Airflow: Front-back

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

Electrical specifications:

Input Power: 100-240V
Maximum Power Consumption: 220W

MANAGEMENT

Management Port: (1) RJ45 10/100/1000 Mbit Configuration

(CLI) Port: (1) RS-232 DB9

USB for software update

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

Cross connect

100 Gbps port cross connect with central unit
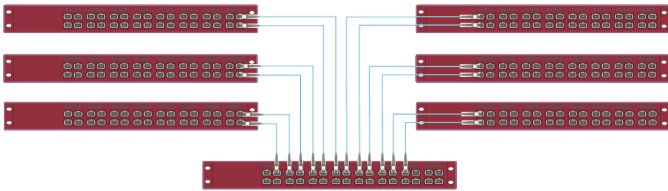
In this application 6 x EX32100 are connected to a central unit with 186 available 100 Gbps ports (31 per box).

The interconnection between the boxes can be done with one link or more depending on the bandwidth required.

The table shows the number of units that can be interconnected and the number of ports available.
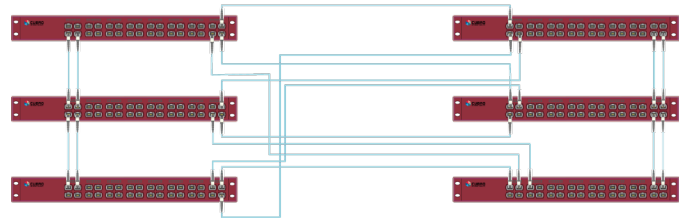
Amount of units	100 Gbps (inteconnect)	200 Gbps (inteconnect)	300 Gbps (inteconnect)	400 Gbps (inteconnect)
6	186 ports	180 ports	174 ports	168 ports
7	217 ports	210 ports	203 ports	196 ports
8	248 ports	240 ports	232 ports	224 ports
9	279 ports	270 ports	261 ports	252 ports
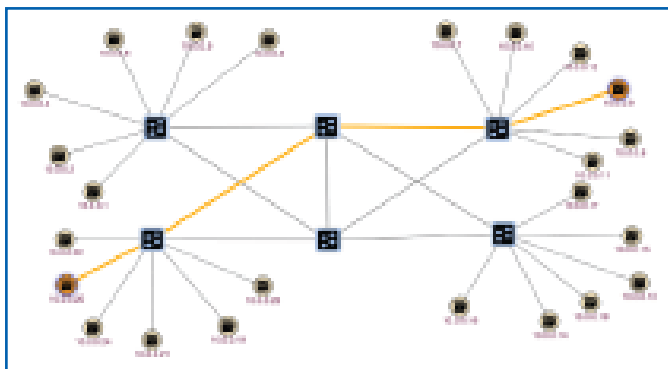
The entire solution is managed by Cubro Vitrum, a server-based network management software. The visualisation of the software platform gives a better overview of the network and its traffic. The batch backup, upgrade and the error center allow for easy management of Cubro's devices.

Additionally, it is also capable of including third party devices in the visualisations. Kibana and Grafana integration allow the user to create and customize graphical dashboards that show all the necessary information at one glance.

Application 100 Gbps port cross connect full mesh

In this application 6 x EX32100 are connected to a fully mashed cross connect with 162 available 100 Gbps ports (27 per box). The interconnection between the boxes can be done with one link or more depending on the bandwidth that is needed.

The table shows how many units can be interconnected and how many ports are available.

Amount of units	100 Gbps (inteconnect)	200 Gbps (inteconnect)	300 Gbps (inteconnect)	400 Gbps (inteconnect)
6	162 ports	132 ports	102 ports	72 ports
7	182 ports	140 ports	98 ports	56 ports
8	200 ports	144 ports	88 ports	32 ports

SIMPLE | SCALABLE | SUSTAINABLE

# APPLICATIONS / SOLUTIONS

Load balancing

The EX32100 is connected inline to a 100 Gbit live link. The Packetmaster EX32100 can load balance 100 Gbit traffic to several 10 Gbit ports.
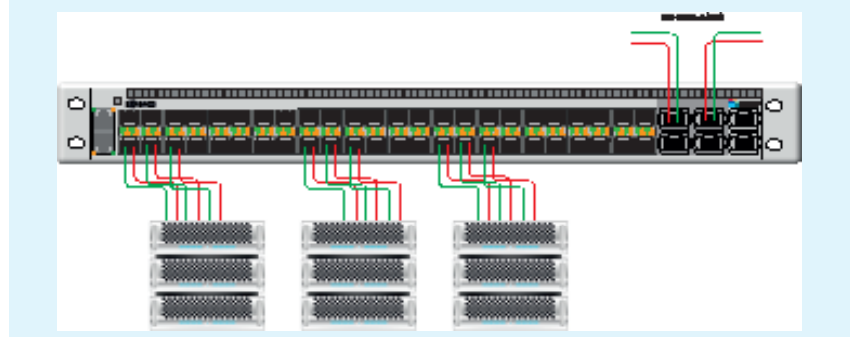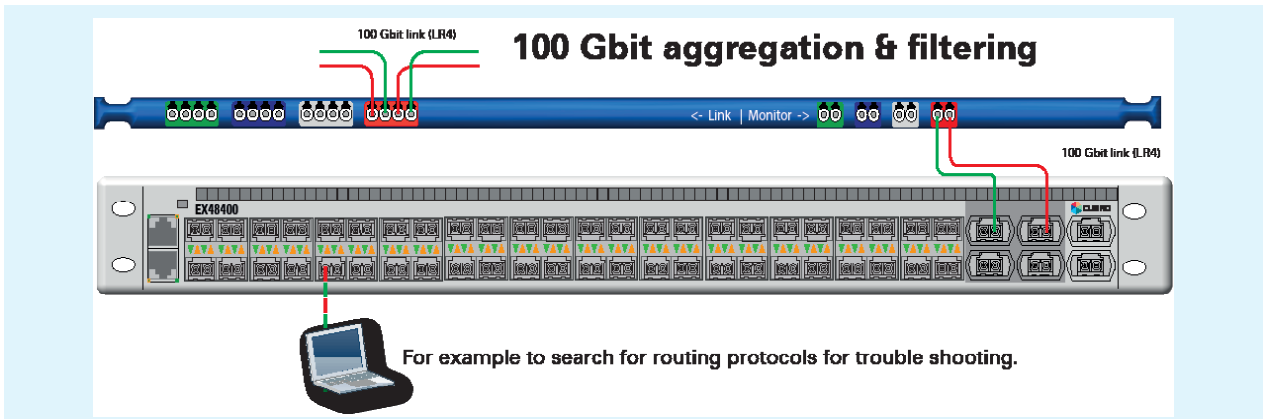

Aggregation

The EX32100 receives traffic from a 100G live link via the monitor ports of an inline TAP.

The EX32100 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 EX32100 the user can isolate only the traffic necessary to troubleshoot the network problem.


100 Gbit aggregation
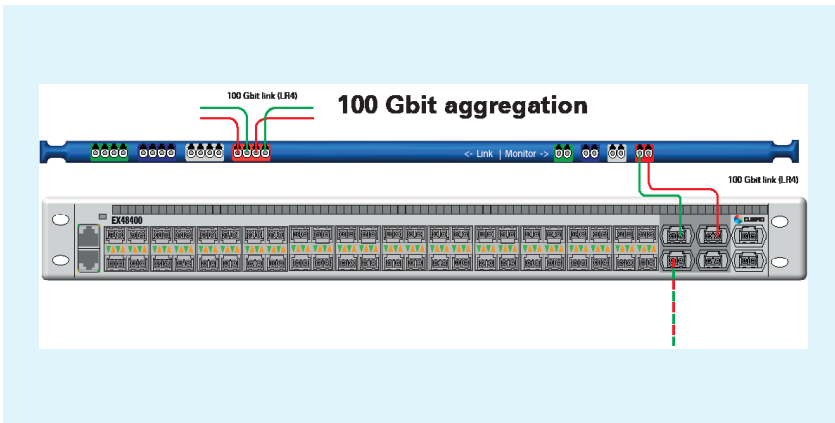
Monitoring and trouble shooting

100 Gbit aggregation & filtering

For example to search for routing protocols for trouble shooting.

The Packetmaster EX32100 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).
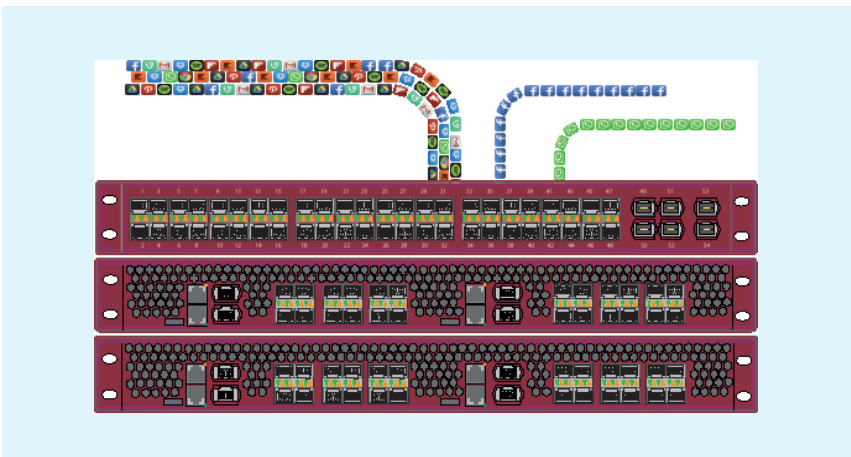
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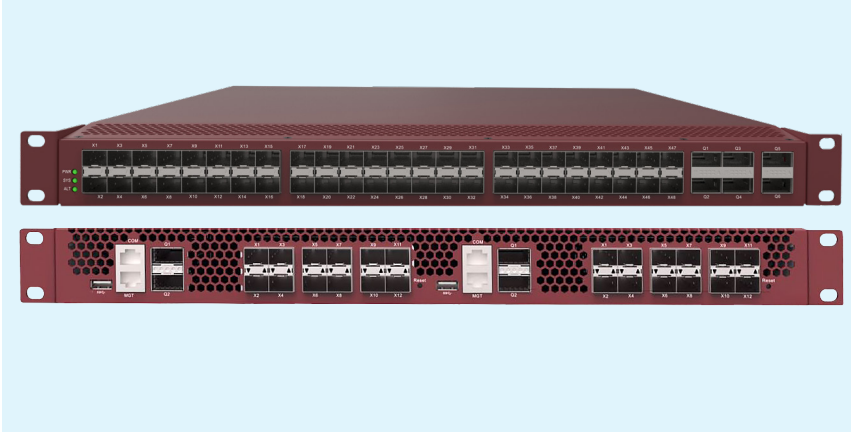
Session meets packet:

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 EX32100 with EXA24160 (Sessionmaster) is an extremely powerful solution for Layer 7 Session aware applications.

Application based filtering:

The combination of EX32100 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 EX32100 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 EX32100. The traffic is sent to other tools for more inspection. Currently, up to 1000 application keys are available.

GTP Application:

The EX32100 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 EX32100 to EXA32100.

ORDERING INFORMATION

Product Components:

- Cubro Packetmaster EX32100
- AC/DC power supply
- European power cord
- Transceivers not included

Part Number	Description
CUB.PM-EX32100	Packetmaster EX32100, 32x40/100G, AC power supply
CUB.PM-EX32100-DC	Packetmaster EX32100, 32x40/100G, DC power supply

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