



CUBRO
NETWORK VISIBILITY

EX48200



```
01001011101  
00010010001  
00100100001  
01001001010
```

DATA SHEET

Advanced Network Packet Broker 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 incoming traffic to monitoring and security tools.

Advantages of EX48200

- Filters and load-balances traffic from 10, 40 or 100 Gbps links to multiple monitoring tools
- Aggregates multiple 1Gbps links to 10, 40, or 100 Gbps monitoring tools
- Up to 48 x 1/10 Gbps (SFP/ SFP+) and 2 x 40/100 Gbps (QSFP/ QSFP28) ports
- QSFP28 ports support breakout to 4 x 10/25G
- IPv6 support
- Tunnel removal and inside tunnel filtering
- Flexible port licensing model (12, 24, 36 or 48 ports enabled)
- Open for 3rd party transceivers
- 2-year base warranty period

Product Overview



The Packetmaster EX48200 is a high-performance network packet broker that aggregates, filters, multiplies, and load balances network traffic to security, monitoring and management tools. It is based on an advanced multi-core, industry leading programmable switch chip architecture and allows all filtering features to be implemented at the hardware level for unmatched throughput and performance. The multi-layer filtering and tunnel removal capabilities of the EX48200 makes the unit a perfect choice for any overlay network visibility application.

Functions / Benefits:

- Easy to configure: secure Web GUI / Rest API
- Hash-based, session aware load balancing to keep up&downstream information together.
- Filtering on multiple parameters including VLAN tags, IP addresses and TCP / UDP port numbers and much more.
- Tunnel termination and inner tunnel filtering (VXLAN, GTP, ERSPAN, CFP, MPLS, etc)
- Active GRE endpoint function
- SNMPv2c and SNMPv3 support
- Straight and easy development of filtering strings using MS Excel with download function.
- Cost efficient due to flexible port licensing model

Product Capabilities / Features

Number of Ports	48 x SFP/SFP+ 1/10 Gbps; 2 x QSFP/QSFP28 40/100 Gbps; QSFP/QSFP28 ports can be used in break-out mode supporting 4 x 10/25 Gbps
Link/Port Aggregation	1:1; 1:n; n:1; n:n - at all port/link speeds
Traffic distribution/load balancing	Traffic can be easily distributed to single ports, parallel ports or load-balancing groups
Filtering	Up to OSI Layer 4 including MAC, VLAN, Ethertype, VXLAN VNI, IPv4/IPv6, DSCP, Protocol type, Layer 4 Port Numbers - multiple stage filtering (ingress, egress and loopback ports)
Tunnel Termination and inner tunnel filtering	MPLS, MPLS over UDP, GRE, GTP, ERSPAN, VXLAN, CFP
Packet Slicing	Supported at all ports and port speeds
Throughput / Latency	None blocking architecture with 1360 Gbps throughput
Latency	< 700ns
Buffer	24 Mbyte with intelligent buffer management to avoid congestion due to micro-bursts
Supervision/Logging	SNMPv2c and SNMPv3; Syslog and Activity Log function
Unit Control	WebUI via https and RestAPI via 10/100/1000B-T management interface
MTBF	178213 hours
Electrical Power	Dual 100-240 V AC or 36-72 V DC available

Technical Data / Specifications



Inputs*

48 x 1 Gbps / 10 Gbps full duplex SFP Ports for any kind of SFP/SFP+

2 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/ QSFP28 ports support breakout cables to 4x10G or 4x25G interfaces

Outputs*

48 x 1 Gbps / 10 Gbps full duplex SFP Ports for any kind of SFP/SFP+

2 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/ QSFP28 ports support breakout cables to 4x10G or 4x25G interfaces

Performance

- Performance up to 1,36 Tbps
- Non-blocking design
- Boot time from power on to working 180 sec

Management

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

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): 444 x 565 x 44 mm

Weight: 12,1 kg

Airflow: Front-back

Electrical specifications:

Input Power: 100-240V

Maximum Power Consumption: 220W

Power Supply Module: 2 (redundant & hot-swappable)

Certifications:

Compliance and Safety: EN 61000-3-2:2019; EN 61000-3-3:2013/A1:2019;

EN 62368-1:2014; EN 55035/2017/A11:2020;

EN 55032:2015/A1:2020

EU Directives compliance: 2014/35/EU and 2014/30/EU

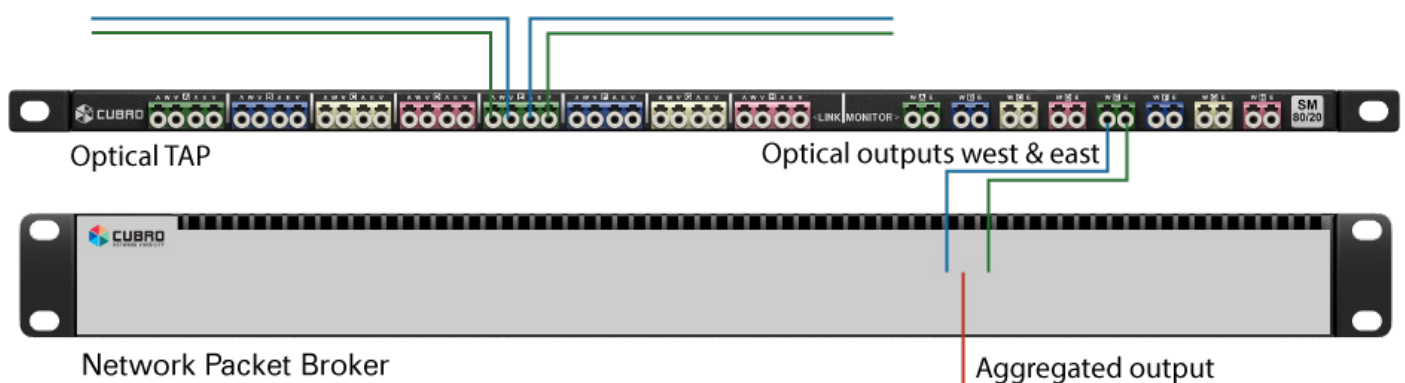
RoHS Compliance: RoHS 6

Applications / Solutions

Aggregation

The EX48200 is able to receive traffic from a single or multiple 1/10/40 or 100 Gbps link(s) via the monitoring ports of an inline tapping device. The incoming traffic can be further aggregated to a single or multiple outputs to connect analyzers and monitoring tools as required.

The example below shows how the EX48200 aggregates upstream and downstream traffic of a 100 Gbit link to a single output port for more economical usage of connected traffic probes/ analytics systems.



By utilizing the various filtering capabilities of the EX48200, the user is able to further reduce traffic volume that needs to be processed, thus enabling quicker and more accurate analysis and troubleshooting.

Moreover, incoming traffic can be VLAN tagged per physical port to allow easy identification at which physical port a packet original arrived.

Superior filtering capabilities

The Packetmaster EX48200 supports up to 2048 parallel running filters. These filters can be used to redirect a selected part of the incoming traffic to a low bandwidth monitoring tool.

Filtering parameters include:

Layer 2	Layer 3	Layer 4
MAC Src / Dst	MPLS Label	Port Src / Dst
VLAN tag	IPv4 Src / Dst	TCP Flag
Ethertype	IPv6 Src / Dst	
VXLAN VNI	DSCP	
	Fragmentation	
	Protocol	

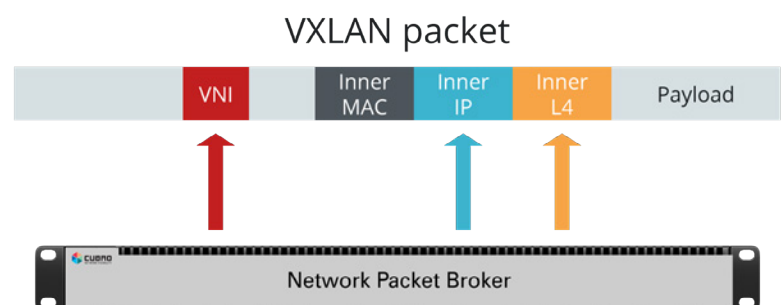
Besides standard OSI L2 to L4, the EX48200 also supports filtering inside tunnels like GTP, VXLAN or GRE – see next section for details. By default, filtering is done at ingress but can be easily extended to egress as well as loopback ports allowing maximum flexibility to forward the right traffic to the right probing/analyzer system.

State-of-the-art tunnel removal and inside tunnel filtering

The EX48200 supports the termination of various tunnels such as:

- ERSPAN II and III
- GRE
- MPLS over UDP
- GTP
- VXLAN
- CFP

Every port of the EX48200 supports an independent MAC and IP setup. Thus, the EX48200 can be used as an active tunnel end-point. Besides tunnel termination it also allows filtering inside tunnels.



This superior functionality makes the EX48200 perfectly suited for any modern overlay network.

GRE Encapsulation Function

To transport filtered packets from site A to site B over a routed Layer 3 network, the EX48200 supports a GRE encapsulation function.

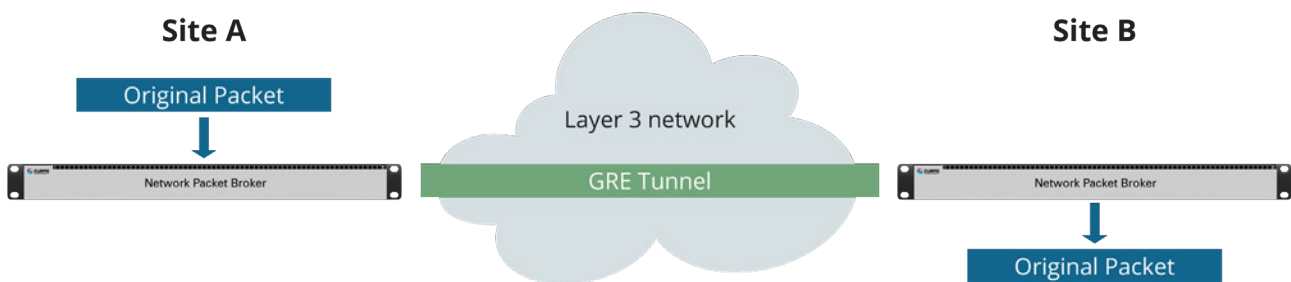
GRE Tunnel Port

GRE Tunnel Port

Display/Hide Columns ID

<input checked="" type="checkbox"/>	ID	Port ID	Local MAC	Remote MAC	Local IP	Remote IP
<input checked="" type="checkbox"/>	1	C5	00:00:00:00:00:01	00:00:00:00:00:02	1.1.1.1	1.1.1.2

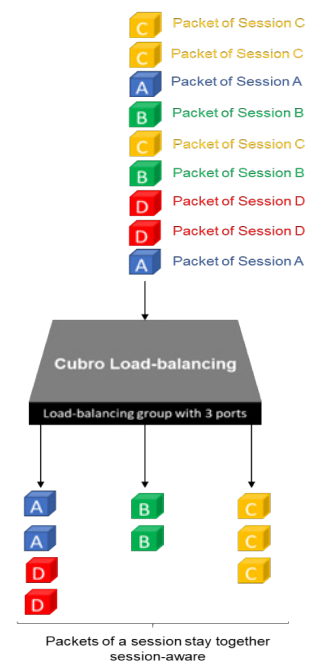
< 1 > 10 / page



Session-aware load-balancing

Load-balancing is a vital function to distribute traffic across different monitoring tools evenly and correctly. The Cubro EX48200 supports Session-Aware Load balancing that allows every packet belonging to the same conversation/flow to be sent to the same physical output port within a load-balancing group. This ensures that connected packet sniffer or other monitoring tools get every packet of a given conversation. The EX48200 maintain the association of packets with each flow or conversation between any two network endpoints such that all traffic from a given flow will be output from a consistent monitor port within a load balanced group.

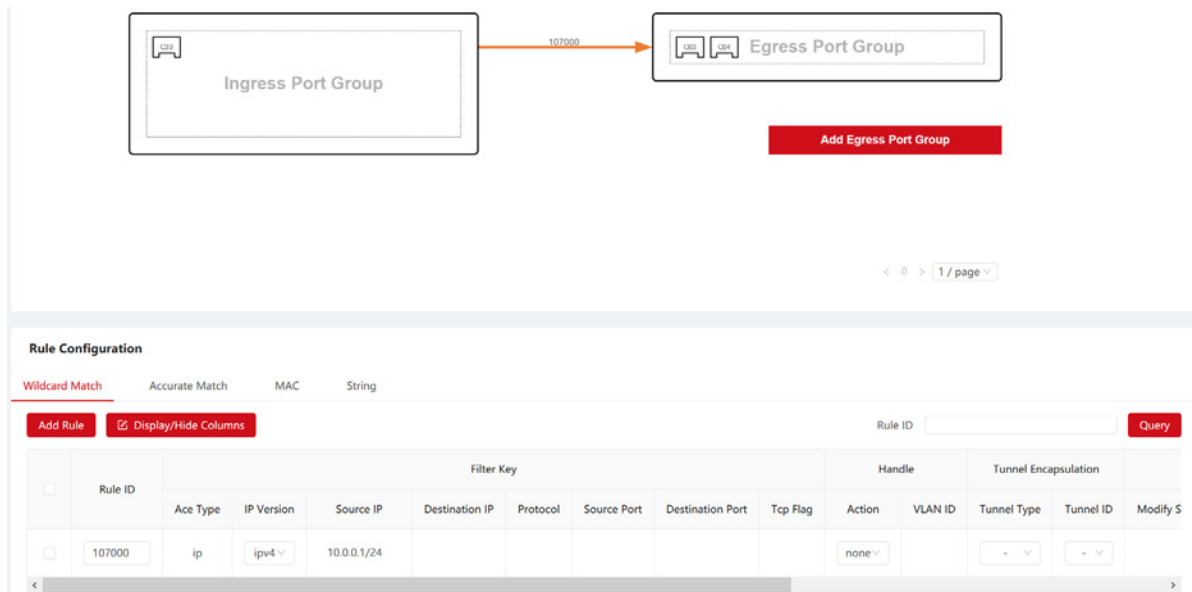
Flow association is done by examining selected fields within each packet and performing a mathematical algorithm called hash key calculation. The result of the calculation is used to consistently separate and distribute traffic to specific ports within a load balanced group. Depending on the requirements, the EX48200 allows different hash key calculations methods ensuring that packets always arrive at the correct interface of the monitoring appliance.



Easy Operation with low learning curve

The EX48200 features an extremely easy to use graphical way of operation.

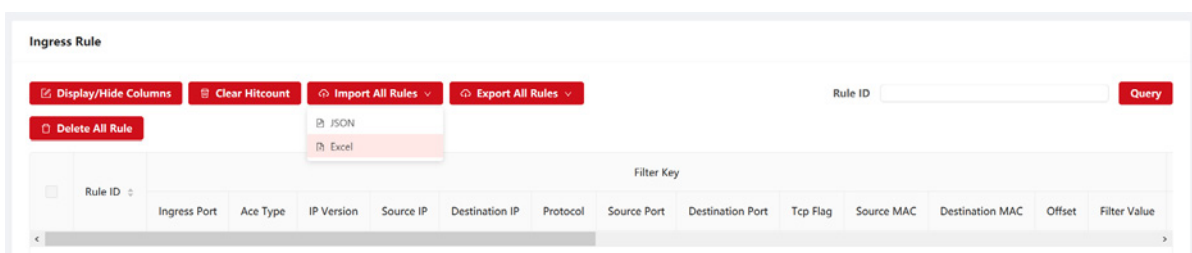
The innovative and logical WebUI allows the user to create a backup, setup new users, check port link status/statistics or define a powerful filtering scenario which helps to do the job quickly.



The screenshot displays the CUBRO WebUI interface. At the top, there is a diagram showing an 'Ingress Port Group' connected to an 'Egress Port Group' via a link labeled '107000'. Below this, there is a red button labeled 'Add Egress Port Group'. The main section is titled 'Rule Configuration' and includes tabs for 'Wildcard Match', 'Accurate Match', 'MAC', and 'String'. There are buttons for 'Add Rule' and 'Display/Hide Columns'. A table lists the configured rules:

Rule ID	Ace Type	IP Version	Source IP	Destination IP	Protocol	Source Port	Destination Port	Tcp Flag	Action	VLAN ID	Tunnel Type	Tunnel ID	Modify S
107000	ip	ipv4	10.0.0.1/24						none		-	-	

Filters can also be created using Microsoft® Excel and uploaded to the EX48200.



The screenshot shows the 'Ingress Rule' configuration page. It includes buttons for 'Display/Hide Columns', 'Clear Hitcount', 'Import All Rules', 'Export All Rules', and 'Delete All Rule'. There is a dropdown menu for 'Import All Rules' with options for 'JSON' and 'Excel'. The table below shows the rule configuration:

Rule ID	Ingress Port	Ace Type	IP Version	Source IP	Destination IP	Protocol	Source Port	Destination Port	Tcp Flag	Source MAC	Destination MAC	Offset	Filter Value

Ordering Information

Product Components:

- Cubro EX48200
- AC or DC power supply modules
- Power cord
- Transceivers not included

Part Number	Description
CUB.PM-EX48200-12	Packetmaster EX48200, 12x1G/10G and 2x40G/100G, Dual AC powered
CUB.PM-EX48200-24	Packetmaster EX48200, 24x1G/10G and 2x40G/100G, Dual AC powered
CUB.PM-EX48200-36	Packetmaster EX48200, 36x1G/10G and 2x40G/100G, Dual AC powered
CUB.PM-EX48200-48	Packetmaster EX48200, 48x1G/10G and 2x40G/100G, Dual AC powered
CUB.PM-EX48200-12-DC	Packetmaster EX48200, 12x1G/10G and 2x40G/100G, Dual DC powered
CUB.PM-EX48200-24-DC	Packetmaster EX48200, 24x1G/10G and 2x40G/100G, Dual DC powered
CUB.PM-EX48200-36-DC	Packetmaster EX48200, 36x1G/10G and 2x40G/100G, DC powered
CUB.PM-EX48200-48-DC	Packetmaster EX48200, 48x1G/10G and 2x40G/100G, DC powered

Spare parts:

Part Number	Description
CUB.PM-AC-E	AC Power supply module for CUBRO EX32100A/EX48600/OMNIA120/EX48200 series
CUB.PM-DC-E	DC Power supply module for CUBRO EXA32100A/EX48600/OMNIA120/EX48200 series

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