

Cubro Aggregator C-Series Overview

January 2026

Aggregator C Series - Solution for 1G to 100G

The C-Series family consists of three products providing a flexible lineup of economical network packet brokers.

- **C32 - 32 x 40G/100G**
- C48 - 48 x 1/10/25G & 8 x 40G/100G
- C64 - 64 x 40G/100G



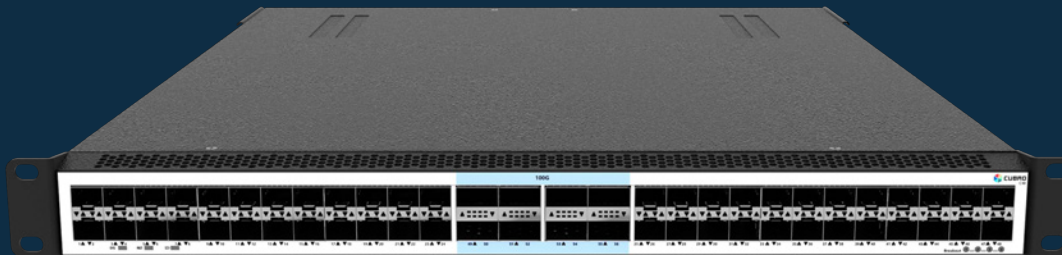
Aggregator C32

Key points:

- Non-blocking architecture
- All ports are included (no software license to enable ports) & 3rd party transceivers are supported
- Timestamping
- User Defined Filtering via Offset



- **32 x 40G/100G** – 16 ports can be used in 4 x 1/10G or 4 x 10/25G split mode
- Each port can be used simultaneously as input and output and is totally independent of other ports
- Non-blocking architecture
 - 6,4 Tbit/s throughput
- All ports are included and open to 3rd party transceivers

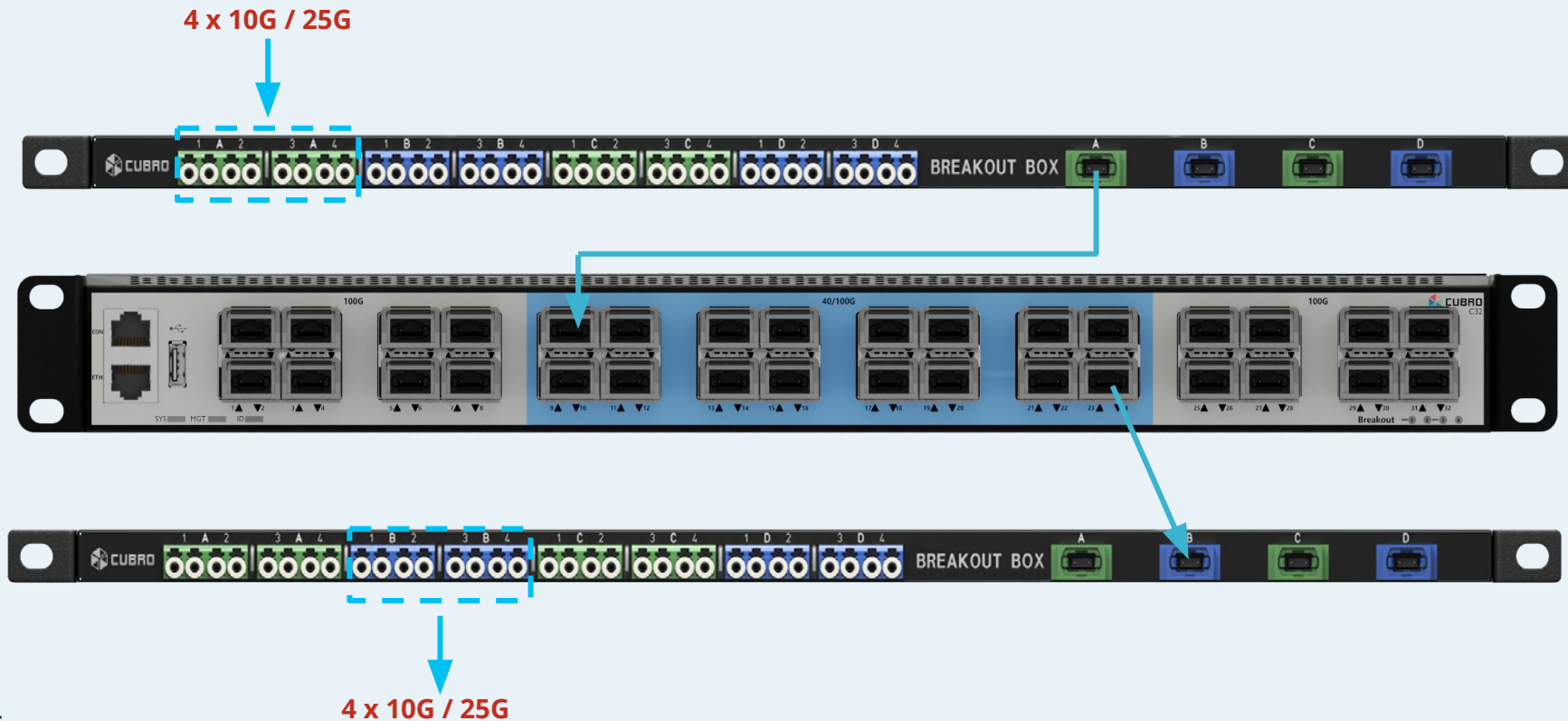


- **48 x 1/10/25G + 8 x 40G/100G**
- Each port can be used simultaneously as input and output and is totally independent of other ports
- Non-blocking architecture
 - 4000 Gbit/s throughput
- All ports are included and open to 3rd party transceivers




- **64 x 40G/100G** - 16 ports can be used in 4 x 1/10G or 4 x 10/25G split mode
- Each port can be used simultaneously as input and output and is totally independent from other ports
- Non-blocking architecture
 - 12,8 Tbit/s throughput
- All ports are included and open to 3rd party transceivers

Break-out Mode (4 x 10G / 25G)



Every port within the split is completely independent

C32 ☰ Rule Table + Add Rule ☰ Group Table + Add Group 📄 Save-Points 📱 Apps 🔗 Ports ☰ Device LOG OUT "ADMIN" (SUPER RIGHTS) 

RESET PORT COUNTERS EXPORT TABLE AS CSV

Port	Description	RX Pkts	RX Bytes	RX bit/sec.	TX Pkts	TX Bytes	TX bit/sec.	RX CRC	Oversub.
11	Filter...	Filter...	Filter...	Filter...	Filter...	Filter...	Filter...	Filter...	Filter...
11/1		0	0.0 B	0.0 b	0	0.0 B	0.0 b	0	0
11/2		0	0.0 B	0.0 b	0	0.0 B	0.0 b	0	0
11/3		0	0.0 B	0.0 b	0	0.0 B	0.0 b	0	0
11/4		0	0.0 B	0.0 b	0	0.0 B	0.0 b	0	0
		0	0.0 B	0.0 b	0	0.0 B	0.0 b	0	0

Break-out Cable vs Breakout Box



Break-out cable

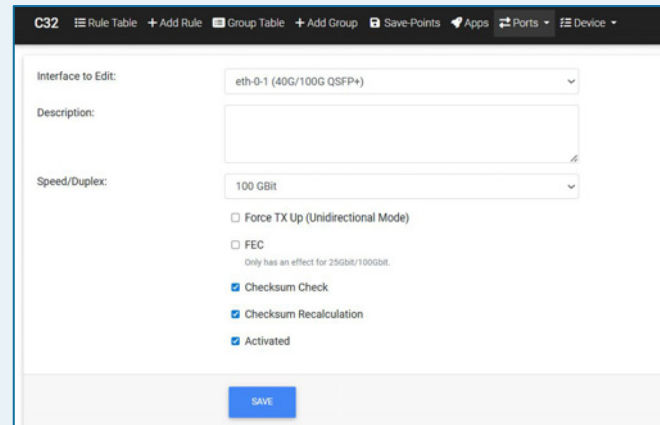
4 x

Cubro Break-out Box



- Physical conversion from LC to MTP and from MTP to LC
- Clearly labelled connectors - never get confused with TX and RX
- Ruggedized and firmly installed in 19" racks (does not somewhere "hang" in the rack like break-out cable)
- Two versions
 - 16 x LC (10G/25G) to 4 x MTP (40G/100G/400G) in 19" 1/3 U
 - 8 x LC (10G/25G) to 2 x MTP (40G/100G)/400G in 19" 1/3 U
- Fully passive, transparent and bidirectional
- Multimode and Singlemode version

- All main functions are accessible via WebUI
- In addition to WebUI, the CLI provides access to the full functionality including all enhanced features such as
 - User Defined Filtering
 - GRE Tunnel encapsulation & decapsulation
 - Packet Capture (1000 packets maximum)
 - Monitor Sessions for easy connection to external ad-doc capture tools
 - Timestamping



C32 Rule Table + Add Rule Group Table + Add Group Save-Points Apps Ports Device

Interface to Edit: eth-0-1 (40G/100G QSFP+)

Description:

Speed/Duplex: 100 Gbit

☐ Force TX Up (Unidirectional Mode)

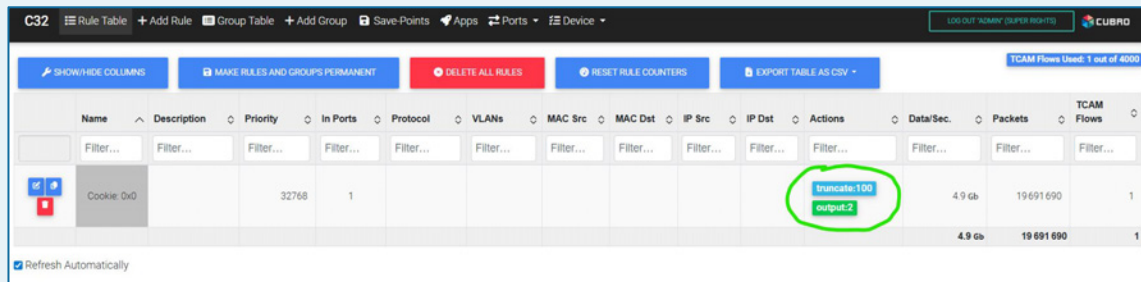
☐ FEC
Only has an effect for 25GbE/100GbE.

☒ Checksum Check

☒ Checksum Recalculation

☒ Activated

SAVE



C32 Rule Table + Add Rule Group Table + Add Group Save-Points Apps Ports Device

SHOW/HIDE COLUMNS MAKE RULES AND GROUPS PERMANENT DELETE ALL RULES RESET RULE COUNTERS EXPORT TABLE AS CSV TCAM Flows Used: 1 out of 4000

Name	Description	Priority	In Ports	Protocol	VLANs	MAC Src	MAC Dst	IP Src	IP Dst	Actions	Data/Sec	Packets	TCAM Flows
Cookie: 0x0		32768	1							Truncate:100 output:2	4.9 Gb	19691690	1
											4.9 Gb	19 691 690	1

Refresh Automatically

Most of the
CLI functions
are shown in
WebUI

Filtering capabilities

The C-Series supports up to 4000 parallel running IPv4/IPv6 filters. These filters can be used to redirect a selected part of the incoming traffic to a low bandwidth monitoring tool.

Filtering parameters include:

▼ Match Fields

In-Ports

1 ~ 32, ranges allowed, e.g. "1, 3-5"

VLAN (802.1Q)

match tagged traffic only

VLAN IDs

e.g. "11, 13-15" or "0xf0-0xfd, 0xff"

VLAN PCP

e.g. 7

MAC Source (+ /Mask)

e.g. FEED:FEED:FEED

MAC Dest. (+ /Mask)

e.g. FEED:FEED:FEED

Protocol

IP/TCP

Select to see protocol specific fields.

IP Source (+ /Mask or + /CIDR-Num.)

e.g. 1.2.3.4 or 4.3.2.1/255.255.255.1

IP Dest. (+ /Mask or + /CIDR-Num.)

e.g. 1.2.3.4 or 4.3.2.1/255.255.255.1

TCP Source (+ /Mask)

e.g. 42 or 3/255 or 0x3/0xff

TCP Dest. (+ /Mask)

e.g. 42 or 3/255 or 0x3/0xff

Extra Custom Match

Layer 2	Layer 3	Layer 4
MAC Src / Dst	IPv4 Src / Dst	Port Src / Dst
VLAN tag (QinQ)	IPv6 Src / Dst	TCP/UDP/SCTP Port Number
Ethertype	Protocol	
MPLS		

The C-Series supports a wide range of different output actions so that filtered traffic can be provided to the appropriate tools.

- Forward Action
 - single port
 - multiple (parallel) ports
 - load-balanced ports
 - single load-balancing group
 - multiple load-balancing group
- Drop Action
 - delete filtered traffic
- Modify Egress traffic
 - Supports to modify header parameters like
 - MAC Src/Dest, IP Src/Dest, UDP/TCP Src/Dest.



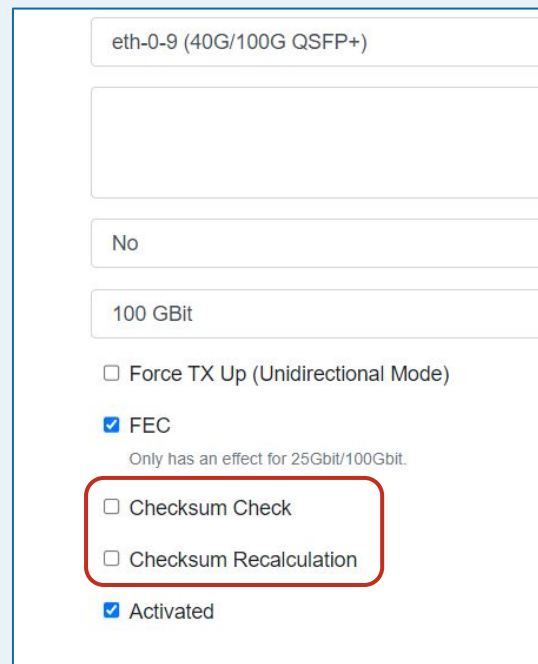
Standard Actions

- ☐ Drop
- ☐ Output to Group
- ☒ Output to Ports: 29-32 (1 – 32, ranges allowed, e.g. *1, 3-5)
- ☐ Push VLAN: (1–4094, pushes a new VLAN ID in any case.)
- ☐ Modify VLAN ID: (1–4094, changes existing VLAN ID or pushes a VLAN with this ID if there is none.)
- ☐ Modify MAC Source
- ☒ Modify MAC Dest.: D8:20:9f:00:00:10
- ☐ Modify IP Source
- ☒ Modify IP Dest.: 192.168.0.200
- ☐ Modify UDP Source
- ☒ Modify UDP Dest.: 8888

Distribute traffic as required

The platform not only allows 100% transparency to L2 protocols but also to CRC errors.

- Per default, the device will drop incoming CRC packets
- Via simple configuration option, the ingress and egress interfaces transparently receive and forward incoming CRC errors.
- This option allows the monitoring appliance to provide statistics about CRC errors of the live network



eth-0-9 (40G/100G QSFP+)

No

100 GBit

☐ Force TX Up (Unidirectional Mode)

☒ FEC
Only has an effect for 25Gbit/100Gbit.

☐ Checksum Check

☐ Checksum Recalculation

☒ Activated
















Save and Load Configurations fast and easy

C32 Rule Table + Add Rule Group Table + Add Group Save-Points Apps Ports Device




LOG OUT "ADMIN" (SUPER RIGHTS) CUBRO

SAVE ACTIVE RULES AS SAVE-POINT SAVE ACTIVE PORT CONFIG AS SAVE-POINT IMPORT

Rule Save-Points

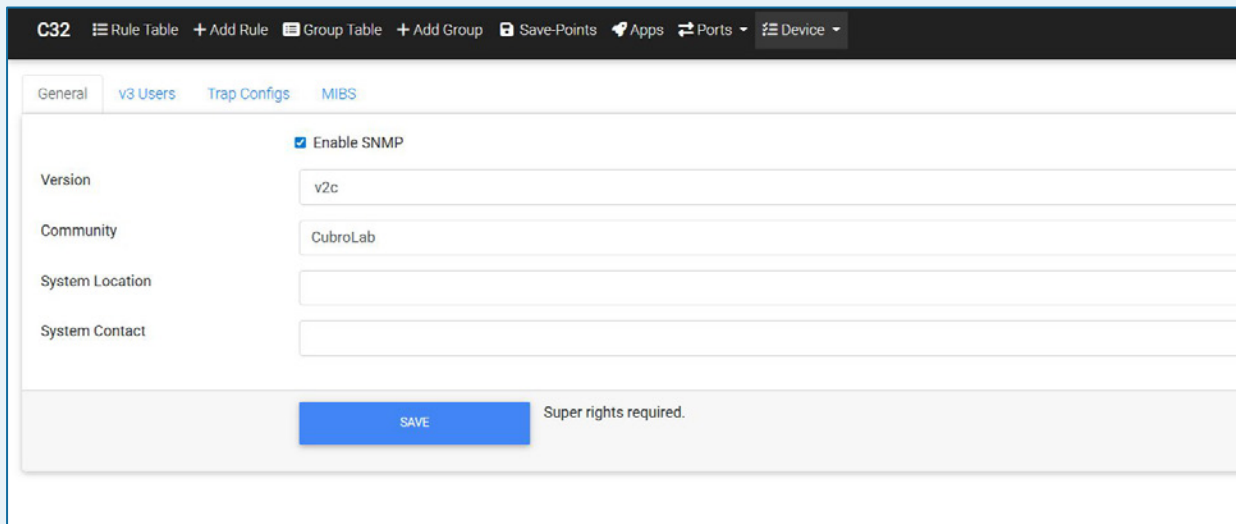
Selection	Actions	Name	Description	TCAM Flows Usage	Groups Usage	Load on Boot
<input type="checkbox"/>	  	3_Filter		16	0	<input type="checkbox"/>
<input type="checkbox"/>	  	5_Super_group		1	3	<input type="checkbox"/>
<input type="checkbox"/>	  	Quicksave		8	3	<input checked="" type="checkbox"/>
<input type="checkbox"/>	  	test_01		16	0	<input type="checkbox"/>
<input type="checkbox"/>	  	test_01BBB		16	0	<input type="checkbox"/>

Port Save-Points

Selection	Actions	Name	Description
<input type="checkbox"/>	  	test_port	

EXPORT SELECTED SAVE-POINTS

- SNMP v1, v2c and v3 supported
- SNMP query and traps
- MIB file provided



C32 Rule Table + Add Rule Group Table + Add Group Save-Points Apps Ports Device

General v3 Users Trap Configs MIBS

☒ Enable SNMP

Version v2c

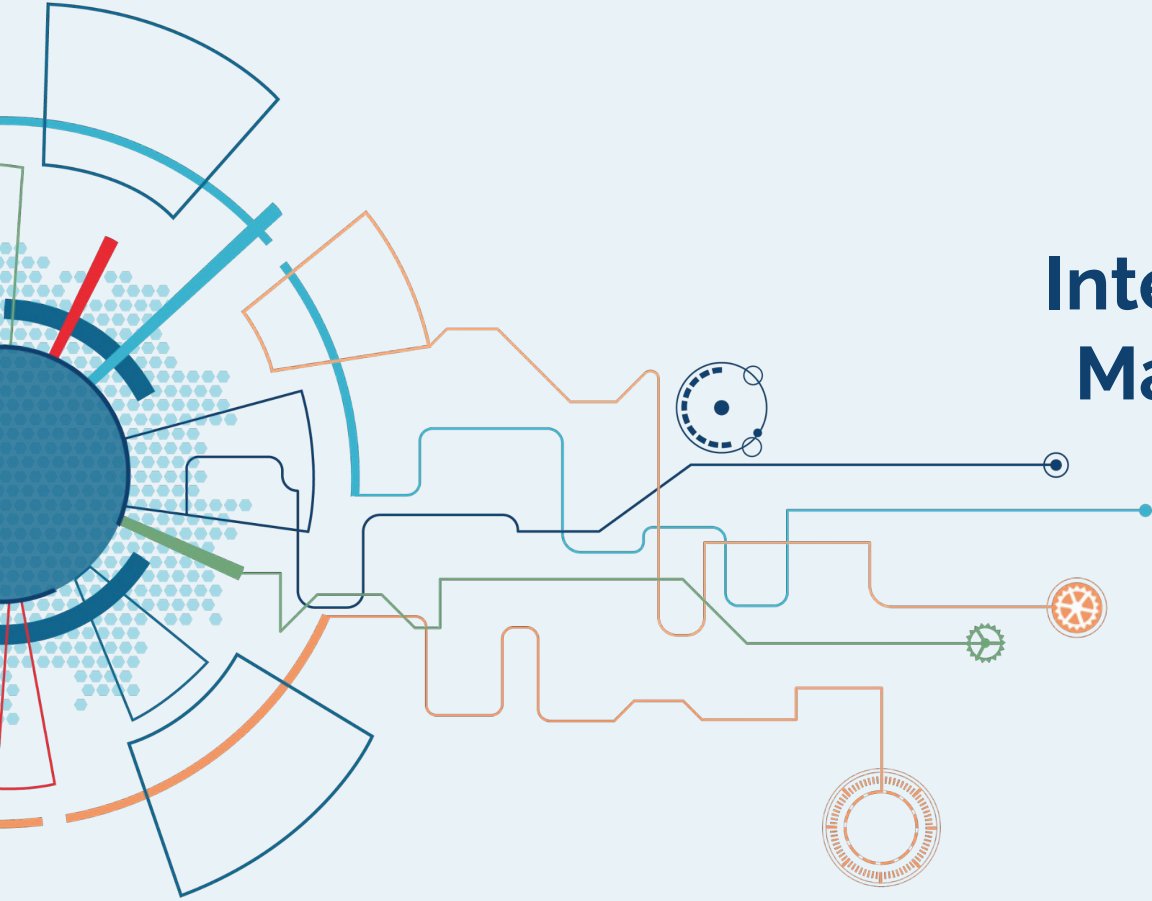
Community CubroLab

System Location

System Contact

SAVE Super rights required.

Integration into Cubro Management System



Integration into Cubro Vitrum Management Tool



Management
of Cubro
equipment

Device
browser with
drill-in and
statistics

Integrated KPI
builder for easy
troubleshooting

Alarm
monitoring

Backup and
firmware
upgrade, user
management

Vitrum NG is Cubro's next-generation centralized network management software designed to provide businesses with advanced, real-time visibility and control over their network environments.

Effortless device tracking - No need to memorise IP addresses. Simply access each device's management website with a single click. Devices and ports can be easily named and annotated, providing clear visibility into each network equipment's role.

Timezone: Europe/Vienna, UTC+02:00

Devices							Edit	Create
Name	Status	Model	Version	Serial Number	Host			
EXA64100 11.64	Online	EXA64100	PFX-ONL-SWITCH-V6.0R16	19030				11.64
C32 11.232	Online	C32	1.2.1-3.0	E7020				11.232
EXA48200 11.148	Online	EXA48200	V5.0R14.5P4-Gita9b213ca6eb-V3.3R1 (Build: 20230913120507)	ET200				11.148
EX48200 11.48	Online	EX48200	V5.0R14.5P2 (Build: 20230913120507)	ET200				11.48

Dashboard

Notifications

Traffic

Smart

Manage

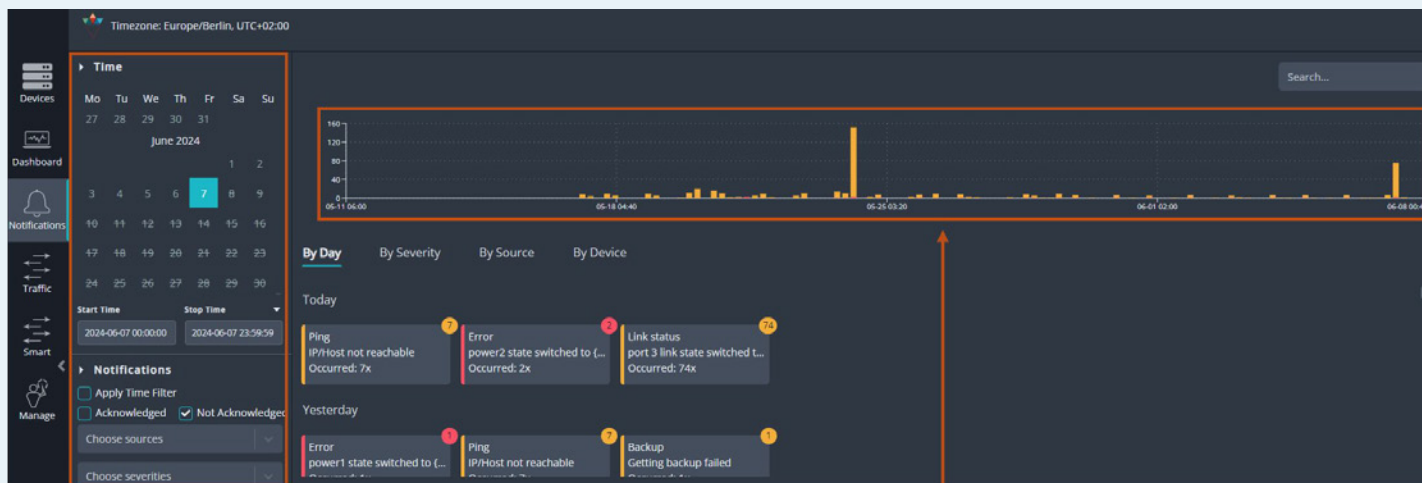
Overall Device statistics

View ingress and egress port statistics for each device instantly; no preconfiguration needed - statistics are auto-collected upon device addition.



Alarm Management

The error centre consolidates error events (e.g., device offline, port down) and issues on-page notifications for immediate attention. It maintains a comprehensive log of all historical events for linked devices.



Filtering options, like time frame, type of notification etc.

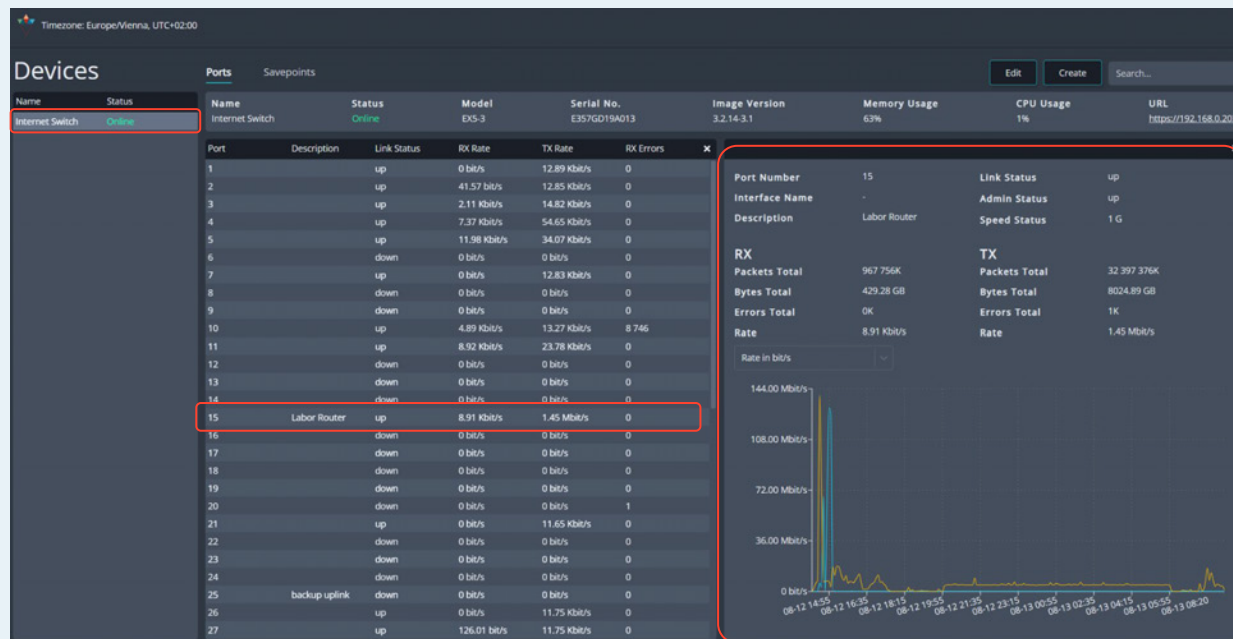
Graphical view on when issues occurred

Drill down to the individual port & rule statistics



On the Device Overview page, each device can be selected to get an overview of all ports & rules statistics in table format.

Drill down to the individual ports & rules for in-depth troubleshooting.



Config Backup and Restore



Configuration backups for all Cubro Network Packet Brokers can be initiated with a single click. These backups can then be swiftly transferred to other devices, facilitating quick device cloning or preparation of backup devices.

The screenshot shows a web interface for managing configurations. At the top, there are tabs for 'Ports' and 'Configs', with 'Configs' being the active tab. To the right of the tabs are 'Edit' and 'Create' buttons. Below the tabs is a table with the following columns: NAME, STATUS, MODEL, SERIAL NO., IMAGE VERSION, MEMORY USAGE, CPU USAGE, and URL. The table contains one row with the following data: NAME: Omnia120 GRZ, STATUS: Online, MODEL: Omnia120, SERIAL NO.: ET2000-2290187, IMAGE VERSION: V5.0R14.5-Gitbc2be5db6d8-V3.2R4P1 (Build: 20231025055018), MEMORY USAGE: 58%, CPU USAGE: 28%, and URL: https://172.31.138.138. Below the table is a checkbox labeled 'Only show Configs of current device'. To the right of the checkbox are two buttons: 'Load Configs from device' and 'Upload config to device'. Below the table, there is a detailed view of the configuration for the selected device, showing fields for TIMESTAMP, HW ID, SOURCE NAME, HW MODEL, VERSION, NAME, and HW CONFIG TYPE. Two orange arrows point from the text below to the 'Only show Configs of current device' checkbox and the 'Load Configs from device' button.

Show configuration from selected device,
or from all devices from the same type

Download current running configuration

Central Firmware Upgrade



Use Vitrum as a centralised platform to upgrade the firmware of Cubro Devices.

Simply upload the Cubro firmware files using “Upload Firmware” and assign it to a device type.

The screenshot displays the 'Firmware' management interface in the CUBRO VITRUM application. At the top, there are tabs for 'Ports', 'Savepoints', and 'Firmware', with 'Firmware' being the active tab. To the right of the tabs are buttons for 'Edit', 'Create', and a search bar. Below the tabs is a table with columns: Name, Status, Model, Serial No., Image Version, Memory Usage, CPU Usage, and URL. The table contains one entry for an 'Internet Switch' with status 'Online', model 'EXS-3', serial 'E357GD19A013', image version '3.3.0-4.0', memory usage '59%', and CPU usage '1%'. The URL is 'https://192.168.0.203'. Below the table is a checkbox labeled 'Only show firmwares of current device'. To the right of the table is a button labeled 'Upload Firmware'. Below the table is a section for a selected firmware file, showing details like 'Timestamp', 'ID', 'Name', 'HW Models', and 'Files'. To the right of this section are buttons for 'Delete the file', 'Delete firmware', and 'Start firmware upgrade'. Annotations with blue boxes and arrows point to specific elements: 'List only applicable files to the selected device' points to the checkbox; 'Delete the file' points to the 'Delete the file' button; 'Start the upgrade procedure of the selected firmware to the selected device' points to the 'Start firmware upgrade' button.

Name	Status	Model	Serial No.	Image Version	Memory Usage	CPU Usage	URL
Internet Switch	Online	EXS-3	E357GD19A013	3.3.0-4.0	59%	1%	https://192.168.0.203

☐ Only show firmwares of current device

Timestamp: 2025-02-10 12:56:37
ID: 1739188597829-158542136
Name: EXG6update_3.3.1-4.1
HW Models: EX6-3, EXS-3
Files: EXG6update_3.3.1-4.1.cuu (69.99 MB)

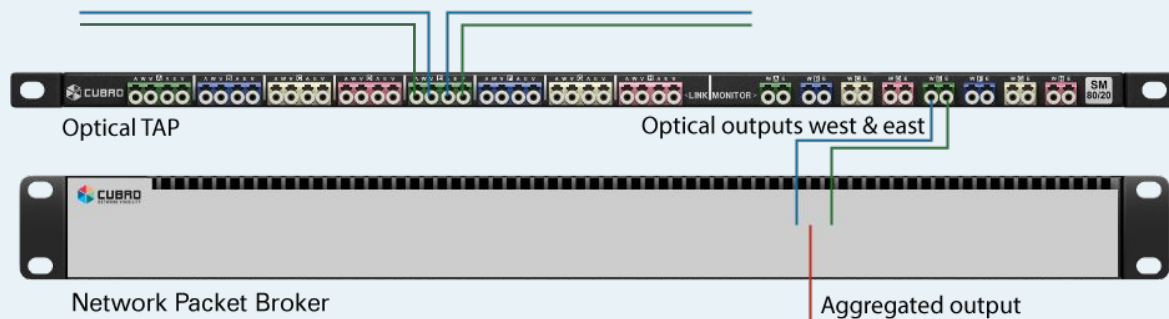
Buttons: Upload Firmware, Delete the file, Delete firmware, Start firmware upgrade

Typical Use-cases



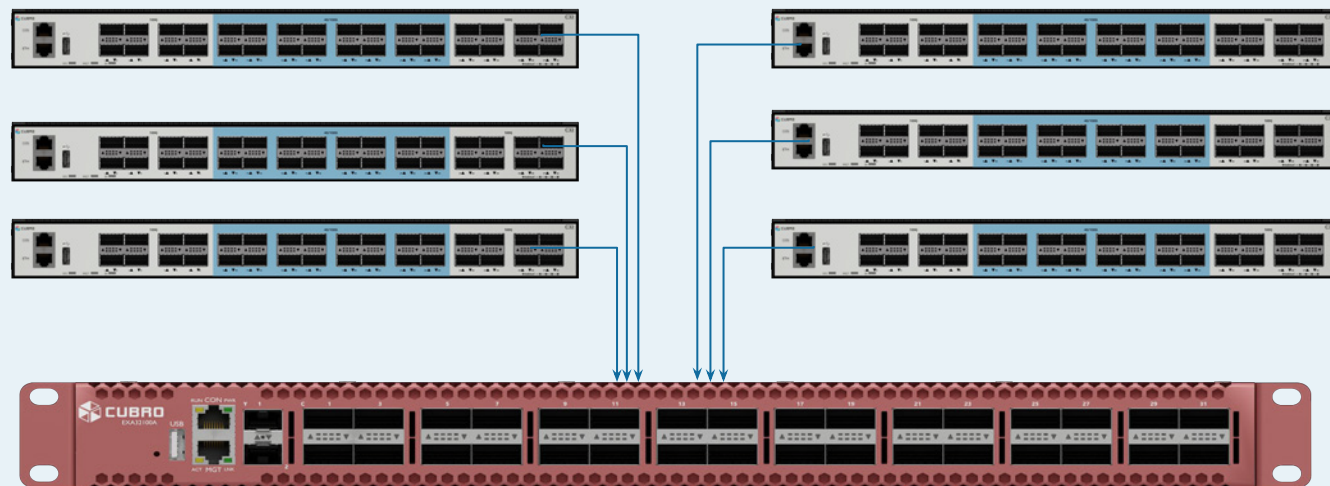
Aggregation & Simple Filtering

The C-Series aggregates traffic from one or more 40/100G links via inline TAP monitor ports. It combines up- and downstream traffic into a single output, optimising the use of connected probes and analytics tools.



The Aggregator's advanced filtering reduces traffic volume for faster, more accurate analysis. VLAN tagging per port enables easy identification of the packet's ingress point.

Economical solution to aggregate remote site 100G links



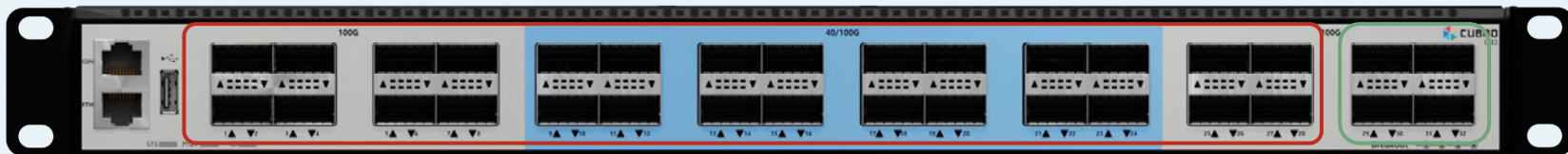
Pre-aggregation of remote/smaller sites to reduce input ports to advanced NPBs

Central Packet Processing (filtering, load-balancing)

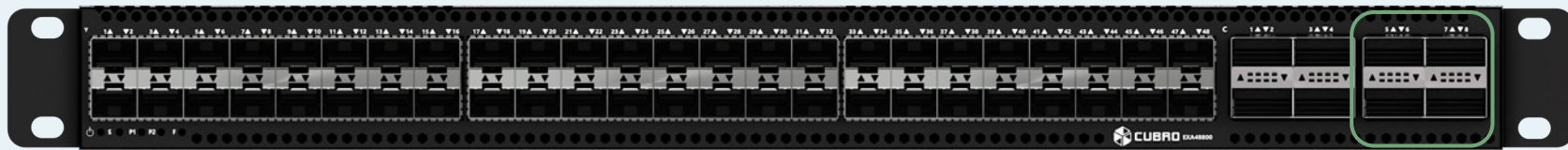
Central Filtering on EXA32100A allows easy management & operation

Extending 100G interfaces for “advanced” NPB functions

The Aggregator extends the capabilities of advanced NPBs like EXA48800 by adding flexible 100G interfaces. Paired with the EXA48800 Advanced series, it supports powerful Layer 7 filtering - by application, keyword, or Regex.



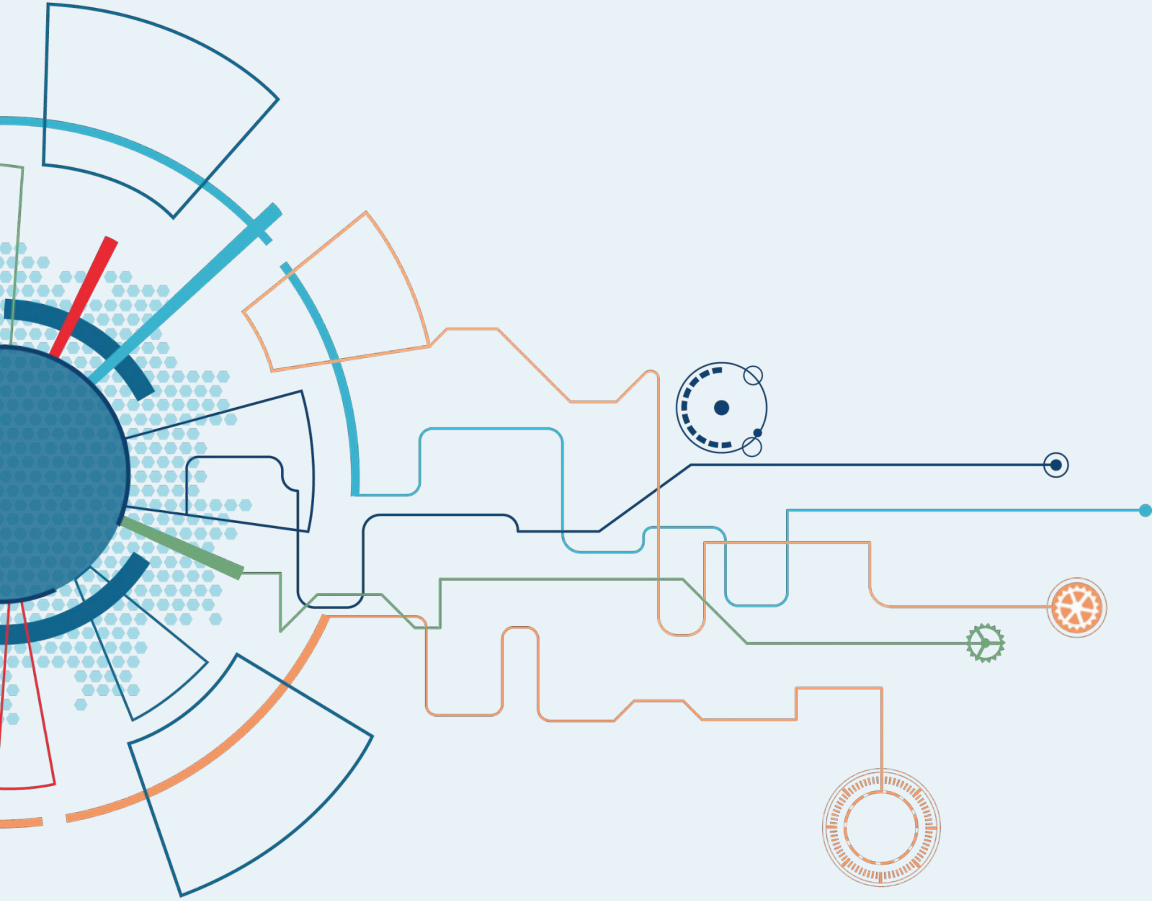
C32 as 20:4 aggregator



EXA48800 as advanced filtering / packet processing engine

Economic way to extend 100G port coverage

Timestamping



- NTP, PTP or internal clock as time-source
- Timestamp format
 - Adds 32 Byte to original Packet
 - New Outer MAC Src: 6 Byte (defined by user)
 - New Outer MAC Dst: 6 Byte (defined by user)
 - New Ether type: 2 Byte (defined by user)
 - Reserved: 2 Byte (currently set to 00 00)
 - **Ingress Timestamp**: 8 Byte (Date and Time in **ns resolution**)
 - **Egress Timestamp**: 8 Byte (Date and Time in **ns resolution**)

MAC Destination	Mac Source	Type	Reserved	Ingress Timestamp	Egress Timestamp	Original Packet incl. Layer 2	CRC Reculated
6 Byte	6 Byte	2 Byte	2 Byte	8 Byte	8 Byte		4 Byte

Timestamp Details

No.	Time	Source IP	Destination IP	Protocol	Length	Source Port	info
1	2025-07-29 09:33:30.937765	192.168.0.1	192.168.0.2	UDP	528	60512	60512 → 60513 Len=454

> Frame 1: 528 bytes on wire (4224 bits), 528 bytes captured (4224 bits) on interface \Device\NPF_{4530F753-52DB-4008-BE11-3D3BAE52DA98}, id 0

> Ethernet II, Src: Xerox_00:cc:dd (00:00:00:00:cc:dd), Dst: Xerox_00:aa:bb (00:00:00:00:aa:bb)

> Destination: Xerox_00:aa:bb (00:00:00:00:aa:bb)

> Source: Xerox_00:cc:dd (00:00:00:00:cc:dd)

Type: Unknown (0x9123)

New Layer 2

> Custom Timestamp Header

Reserved: 0000

Ingress Timestamp: Jul 29, 2025 07:33:30.495213508 UTC

Egress Timestamp: Jul 29, 2025 07:33:30.495214020 UTC

Ingress & Egress Timestamp

> Encapsulated Ethernet Header

Inner Dst: 0a:00:00:00:00:12 (0a:00:00:00:00:12)

Inner Src: a0:00:00:00:00:11 (a0:00:00:00:00:11)

Inner EtherType: 0x0800

Original Packet

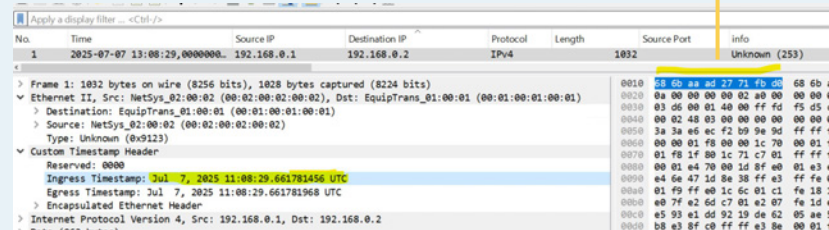
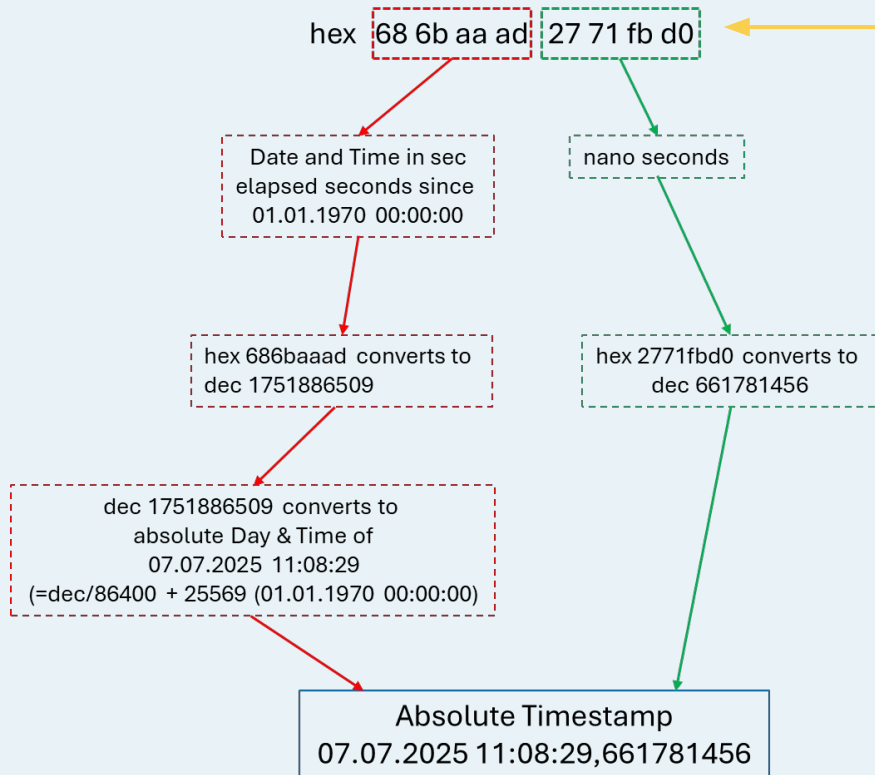
> Internet Protocol Version 4, Src: 192.168.0.1, Dst: 192.168.0.2

> User Datagram Protocol, Src Port: 60512, Dst Port: 60513

> Data (454 bytes)

Cubro .lua file for Wireshark to decode timestamp in human-readable format

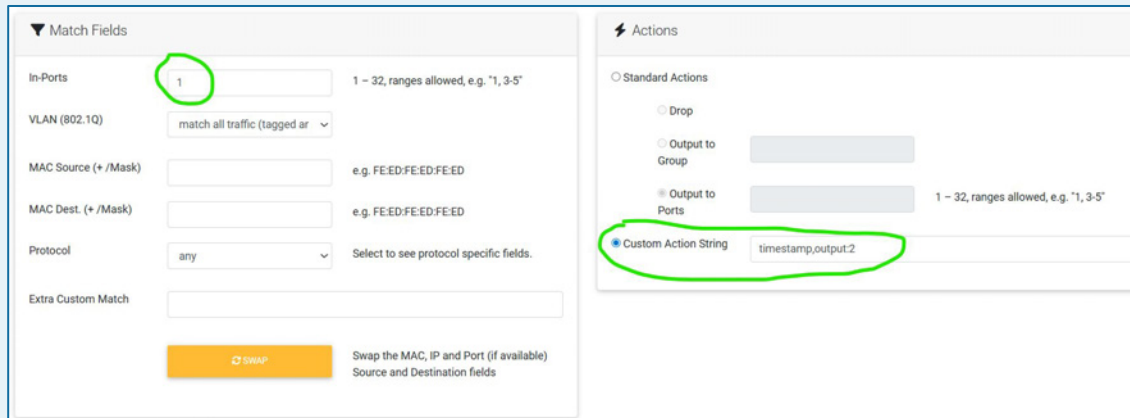
Timestamp Decode



No.	Time	Source IP	Destination IP	Protocol	Length	Source Port	Info
1	2025-07-07 13:08:29.0000000	192.168.0.1	192.168.0.2	IPv4	1032		Unknown (253)

Offset	Hex	ASCII
0010	68 6b aa ad 27 71 fb d0	68 6b aa
0020	0a 00 00 00 00 02 a0 00	00 00 00
0030	03 06 00 01 40 00 ff fd	fs ds c0
0040	00 02 48 03 00 00 00 00	00 00 00
0050	3a 3a e6 ec f2 b9 9e 9d	ff ff ff
0060	00 00 01 f8 00 00 1c 70	00 01 ff
0070	01 f8 1f 00 1c 71 c7 01	ff ff fe
0080	00 01 e4 70 00 1d 8f e0	01 e3 e1
0090	e4 6e 47 1d 8e 38 ff e3	ff fe 01
00a0	01 f9 ff e0 1c 6c 01 c1	fe 18 1f
00b0	a0 7f e2 6d c7 01 e2 07	fe 1d e4
00c0	e5 93 e1 dd 92 19 de 62 05	ae 5a
00d0	b8 e3 8f c0 ff ff e3 8e	00 01 ff

- Basic parameters via CLI
 - CubroC32# configure terminal
 - Enter configuration commands, one per line. End with CNTL/Z.
 - CubroC32(config)# timestamp sync systime
 - CubroC32(config)# timestamp-over-ether 0.0.aabb 0.0.cdd 0x9123
 - #timestamp-over-ether <MAC DA in dot> <MAC SA in dot> 0x<Ethertype>
 - CubroC32(config)# timestamp sync systime
 - CubroC32(config)#exit
- Flow via WebUI



The image shows a WebUI configuration interface with two main panels: 'Match Fields' and 'Actions'.

Match Fields Panel:

- In-Ports:** A text input field containing '1', circled in green. To its right is the text '1 - 32, ranges allowed, e.g. "1, 3-5"'. Below this is a dropdown menu showing 'match all traffic (tagged ar...'.
- VLAN (802.1Q):** A text input field containing 'match all traffic (tagged ar...'.
- MAC Source (+ /Mask):** A text input field containing 'e.g. FEED:FEED:FEED'.
- MAC Dest. (+ /Mask):** A text input field containing 'e.g. FEED:FEED:FEED'.
- Protocol:** A dropdown menu showing 'any'. To its right is the text 'Select to see protocol specific fields.'.
- Extra Custom Match:** A text input field.
- SWAP:** An orange button with a circular arrow icon. To its right is the text 'Swap the MAC, IP and Port (if available) Source and Destination fields'.

Actions Panel:

- Standard Actions:** A section with radio buttons for 'Drop', 'Output to Group', and 'Output to Ports'.
- Custom Action String:** A radio button is selected, and a text input field contains 'timestamp,output:2', circled in green.



THANK
YOU

We have operations in all time zones.
Reach us at: support@cubro.com