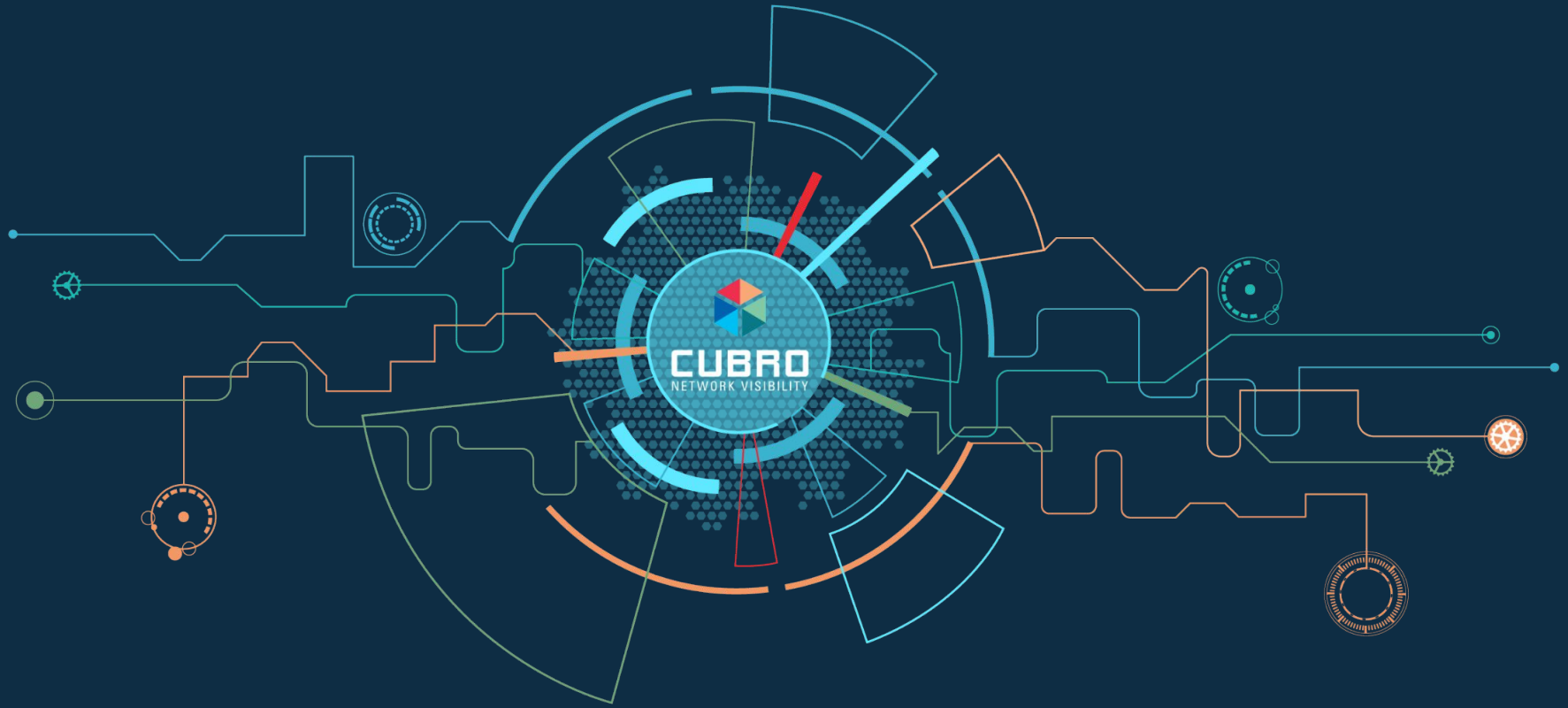
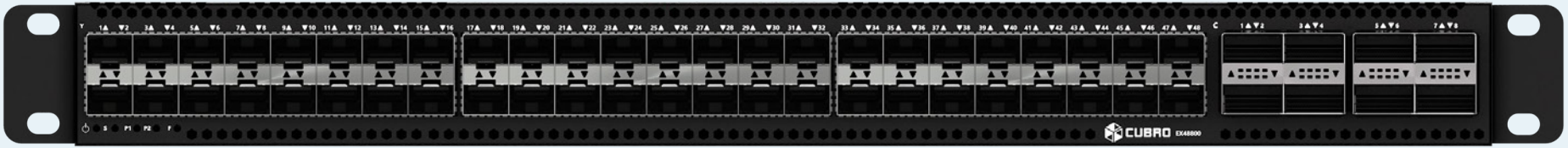


EX48800 - Technical Overview

June 2025

Technical Overview



- 4 x 1 Gbps / 10 Gbps / 25 Gbps full duplex ports for any kind of SFP/SFP+/SFP28
- 44 x 10 Gbps / 25 Gbps full duplex ports for any kind of SFP+/SFP28
- 8 x 40 Gbps / 100 Gbps full duplex ports for any kind of QSFP/QSFP28
- No transceiver vendor lock
- Each port can be used simultaneously as input and output and is totally independent from other ports
- Non-blocking architecture (4000 Gbit/s Throughput)
- Port Licensing Model available

Port licensing model only for EX48800

The EX48800 offers 4 different licensing models defining the number of available ports.

- EX48800-12 = last 12 x 25/10G ports + 8 x 40/100G activated
- EX48800-24 = last 24 x 25/10G ports + 8 x 40/100G activated
- EX48800-36 = last 36 x 25/10G ports + 8 x 40/100G activated
- EX48800-48 = all 48 x 25/10G ports + 8 x 40/100G activated

Unlicensed ports are blocked and cannot be used for any purpose like ingress, egress or loopback.

The port licensing model has no effect on the included features.

Pay only for what you need.
A smart, cost-efficient approach tailored to your requirements.

G5 Plus - Highlights

- 10G/25G/50G/100G break-out mode
- Non-blocking
- Aggregation, Filtering & Load-balancing
- Buffer memory for burst protection
- Open for third party optical modules
- NTP and PTP synchronization
- TACACS+ and RADIUS Authentication
- SNMPv2c, SNMPv3 and RSyslog
- MS Excel filter upload
- Easy to use WebUI, RestAPI and CLI

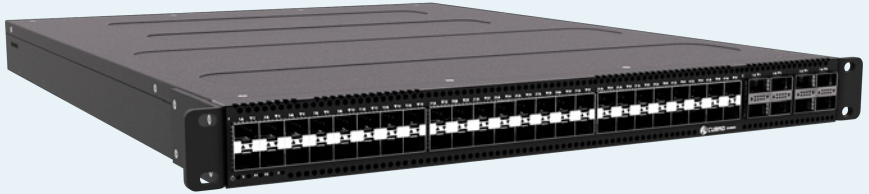
- Packet Slicing in line rate on all ports for any packet size
- > 100k filtering rule capacity (IPv4 and Ipv6)
- **Tunnel Termination and inside tunnel filtering**
  - GRE, GTP, MPLS, MPLSoGRE, MPLSoUDP, VXLAN, ERSPAN, CFP
- Superior VXLAN traffic handling (VXLAN VNI & inner IP filtering simultaneously)
- Active Tunnel Endpoint / Termination & Encapsulation

Best in-class Advanced NPB

What is Generation 5+ (G5+) of Advanced NPBs?

G5+ family consists of four products that are all based on latest generation of programmable Ethernet-Switch ASIC.

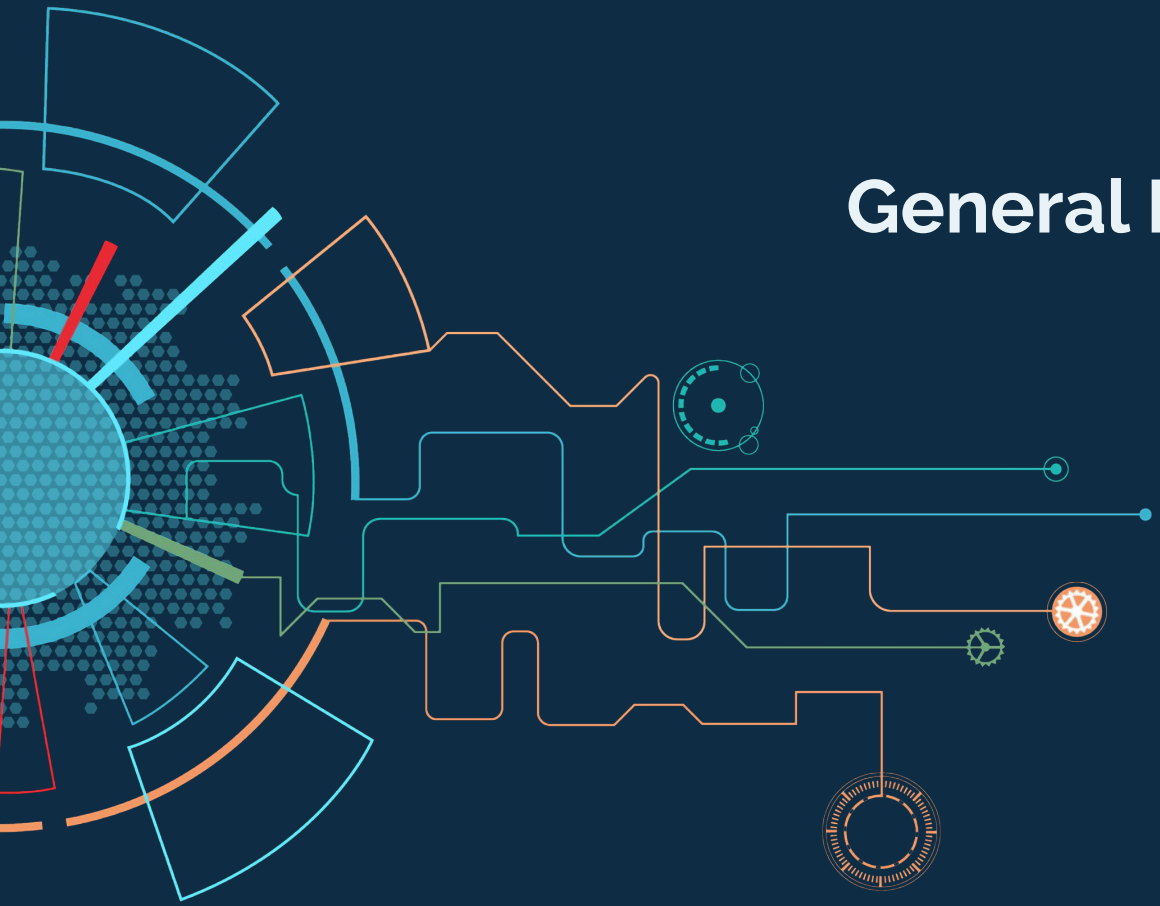
- EXA32100A - 32 x 40G/100G & 2 x 10G/25G
- EXA64100 - 64 x 40G/100G & 2 x 10G/25G
- EXA32400 - 32 x 100G/400G
- **EX48800 - 48 x 10G/25G & 8x 40G/100G**



EX48800

G5+ key points:

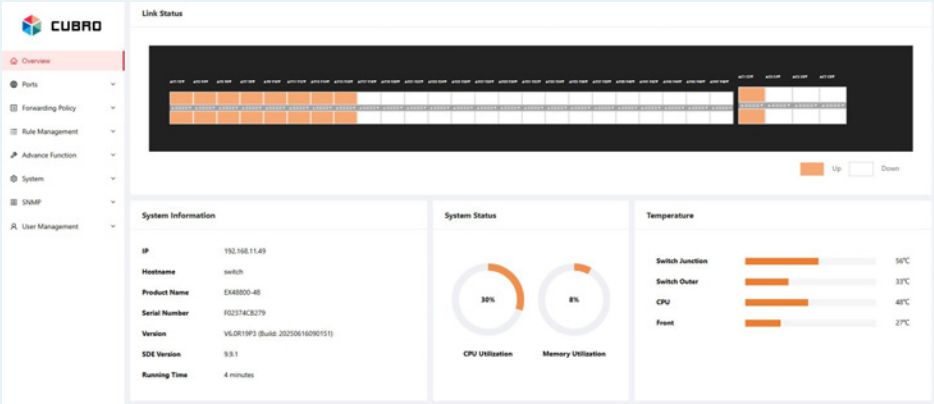
- Tunnel Termination
- State-of-the art VXLAN handling including VNI filtering
- Inner tunnel filtering
- Superior Load-balancing features including inner tunnel hashing
- More than 100k parallel filtering rules

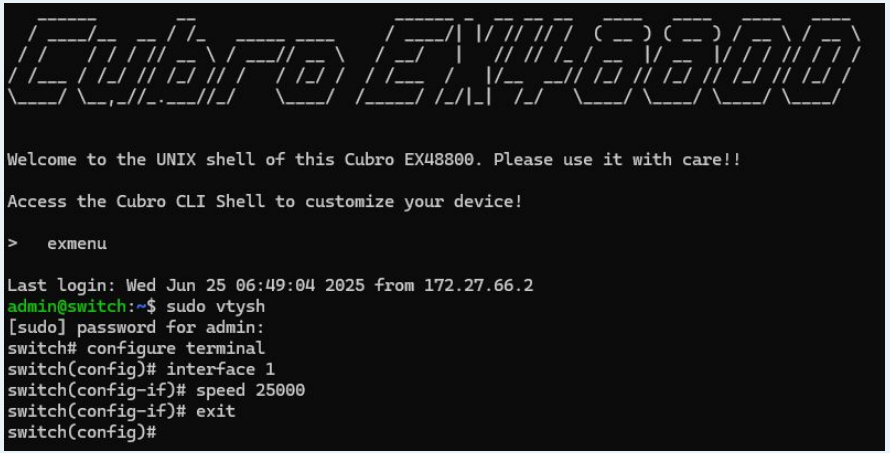


General Features and Functions

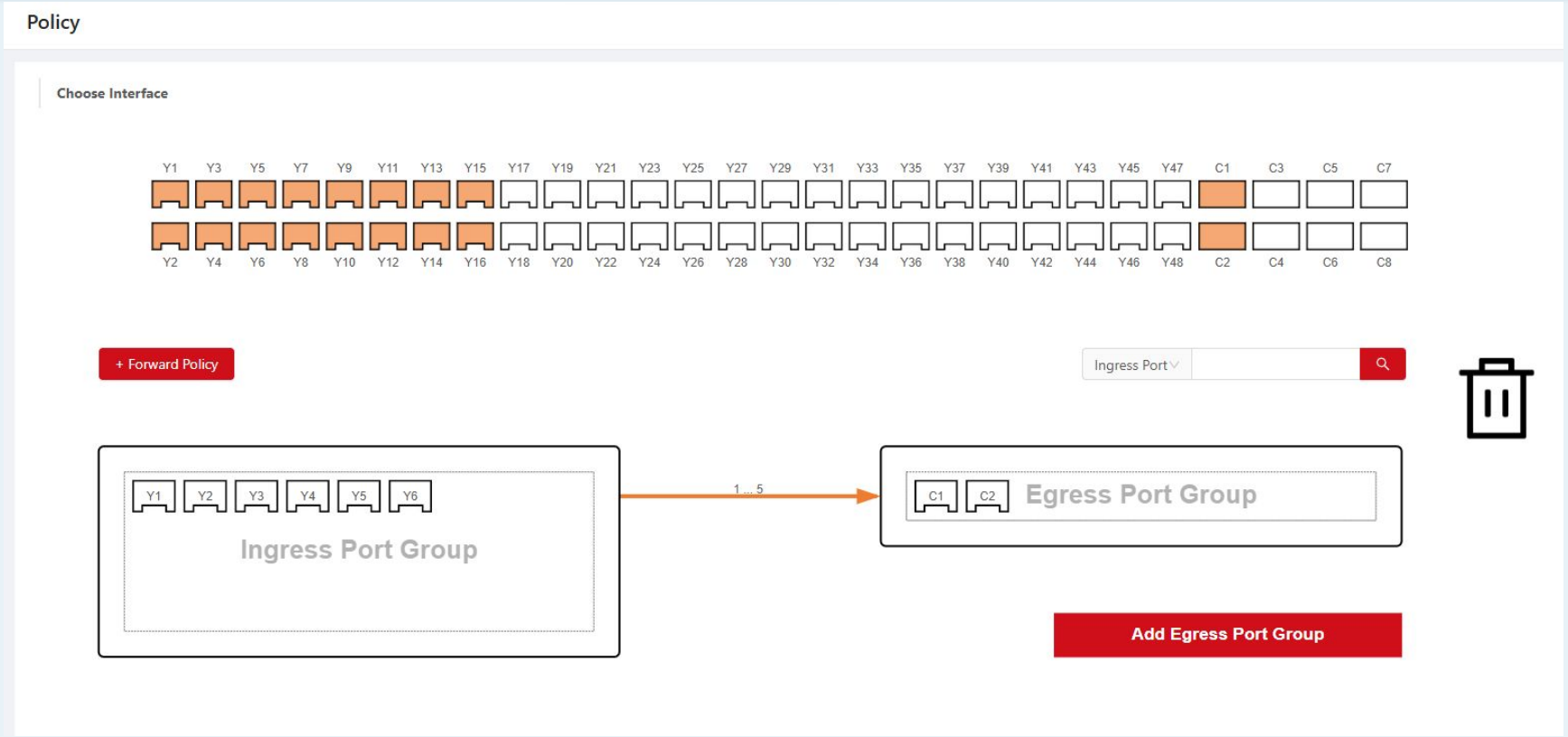
Straightforward operation via WebUI or CLI

- Straight and easy operation via WebUI or CLI; RestAPI available for easy system integration

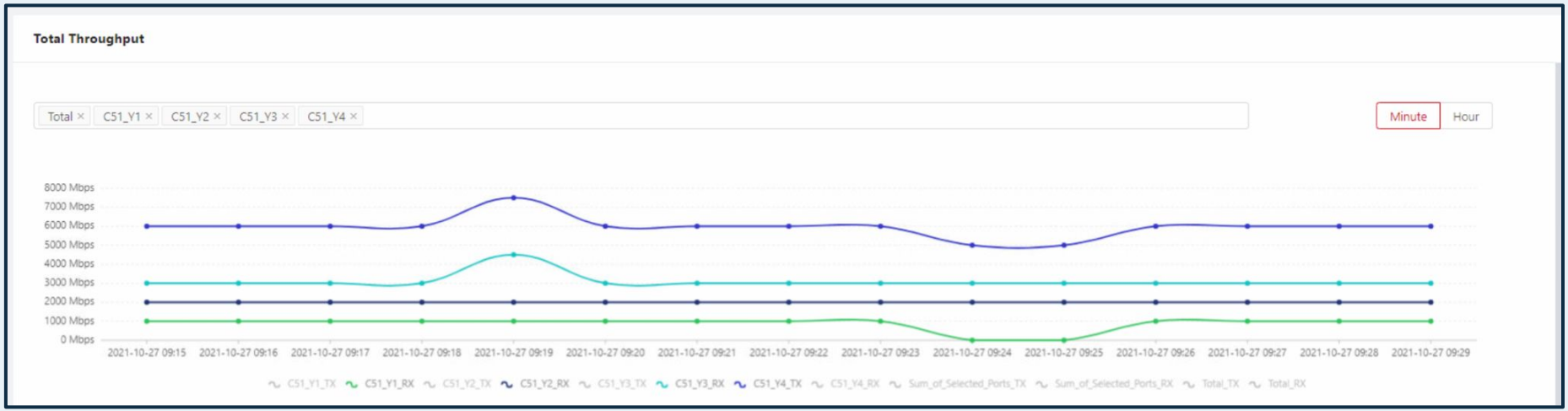




Forwarding Policy via drag & drop



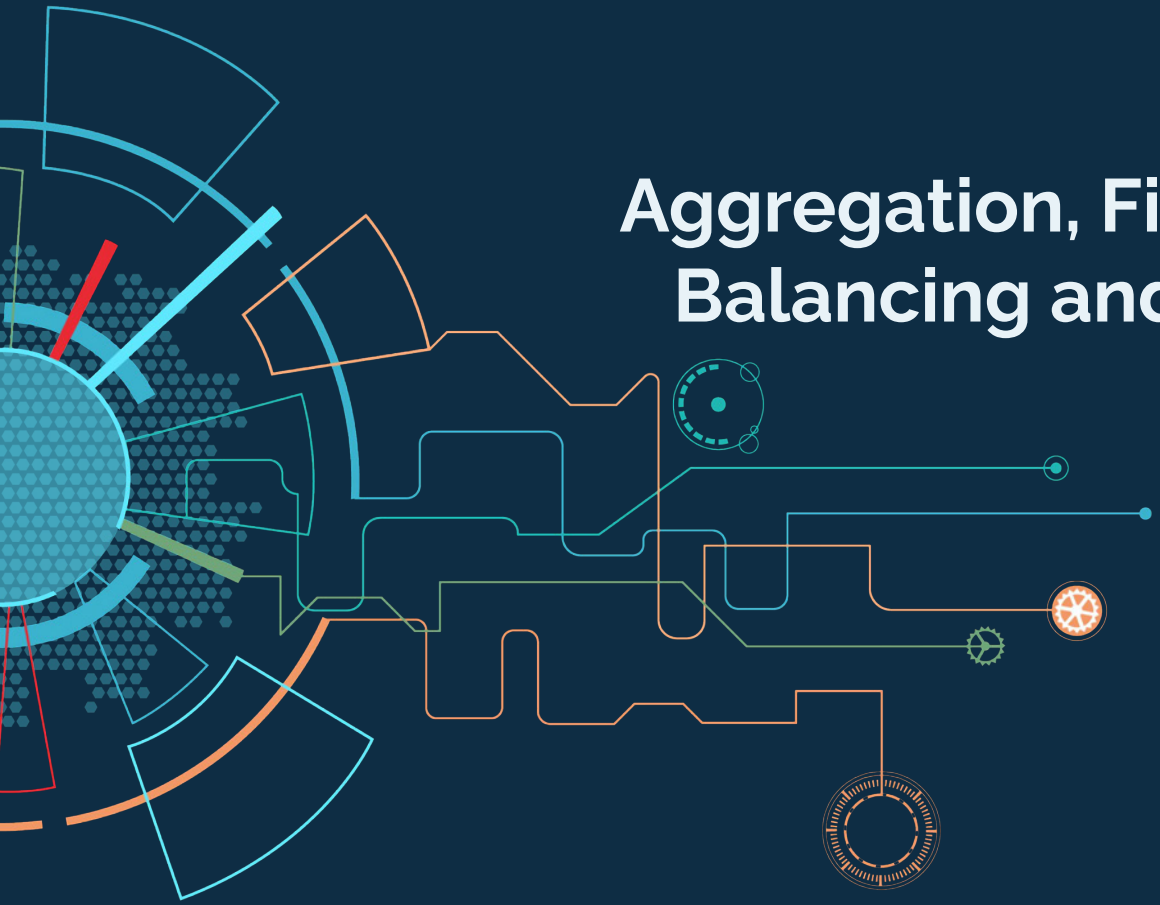
Graphical Throughput per port



Port utilization over time to visualize traffic trends early.

CUBRO
NETWORK VISIBILITY

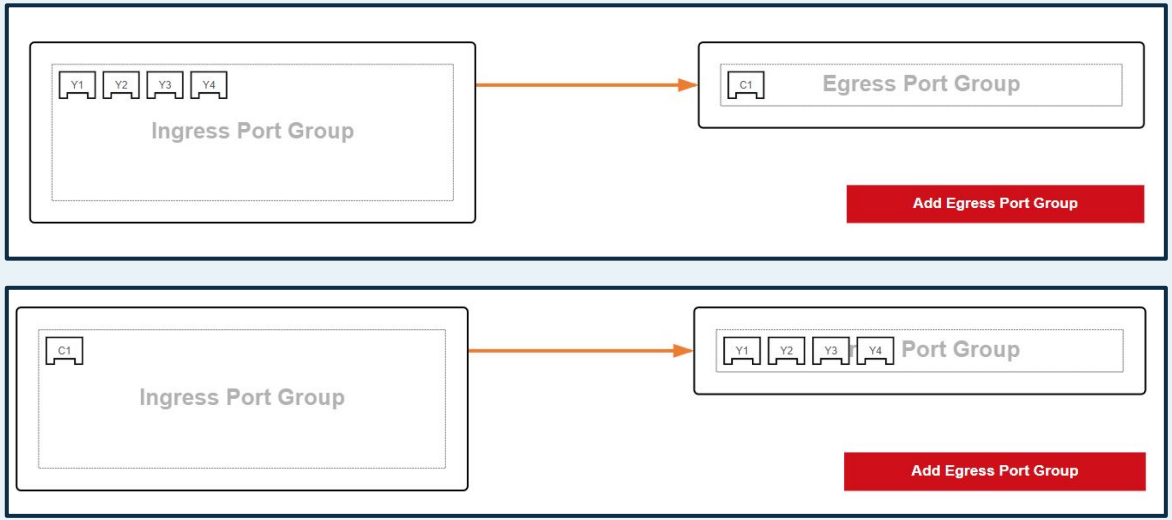
Aggregation, Filtering, Load Balancing and much more



Aggregation

All kinds of aggregation supported :

- Many to One
- One to Many
- Many to Many



Split mode - E.g. 400G into 4 x 100G

Port ID	Description	Enable	Type	Category	Hash Mode	Speed (Mbps)	Split	Split Speed	FEC
C1	TAP01/E	✓	Ingress	mixed	l3-src-dst	100000	0	-	
C2	TAP01/W	✓	Ingress	mixed	l3-src-dst	100000	0	-	
C3		✓	Bidirectional	mixed	l3-src-dst	100000	4	-	
C4		✓	Bidirectional	mixed	l3-src-dst	100000	0		
C5		✓	Bidirectional	mixed	l3-src-dst	100000	0		

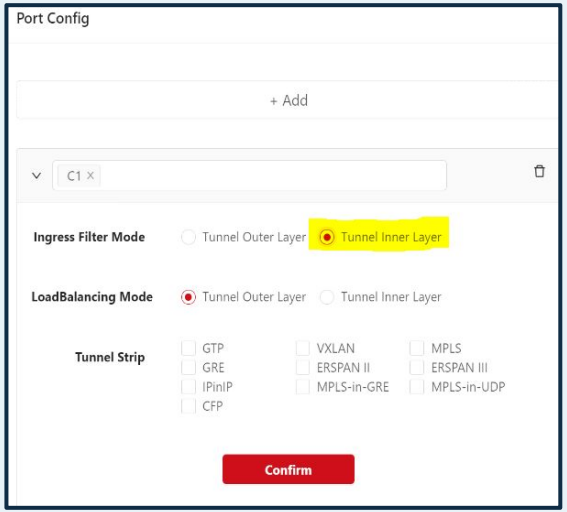
- 25000
- 10000

Link Status

Up Down

Filtering parameters

- Layer 2
  - MAC, VLAN (up to 4 tags)
  - Ether type
  - VXLAN VNI
- Layer 3
  - Protocol
  - DSCP
  - IPv4/IPv6 Address
  - Fragments
- Layer 4
  - Port Number
  - TCP Flag
- Payload
  - ASCII string / Hex pattern

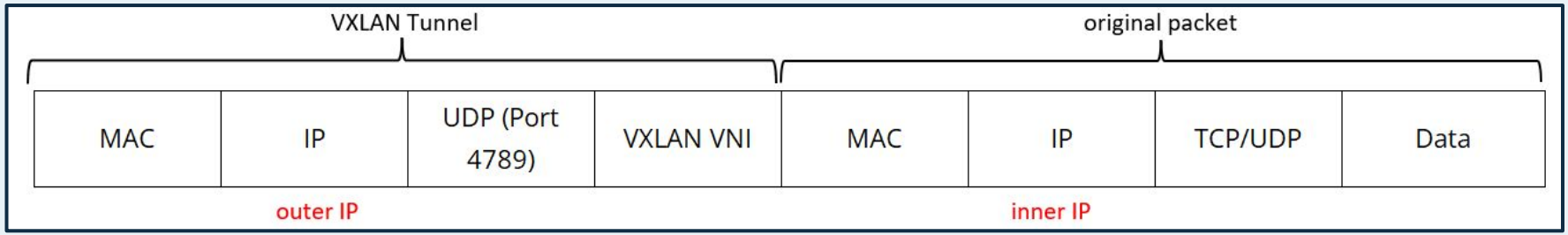


- Ingress Filtering
- Egress Filtering
- Middle-stage filtering (via Loopback port function)

Feed only relevant traffic to the probe/analyzers

Encapsulated / Tunneled traffic handling

In modern overlay communication networks, packets are usually encapsulated in tunnels. Typical encapsulations used are VXLAN, GRE or ERSPAN.

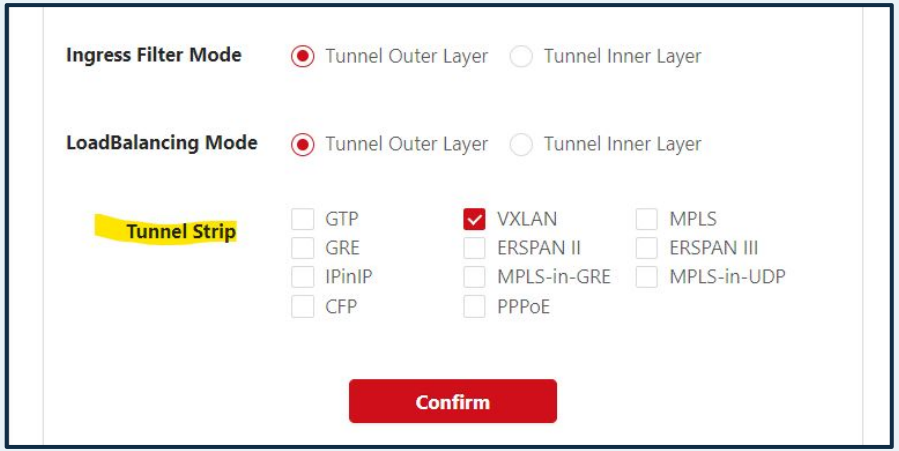


Challenges & Solutions

- Information of interest is hidden inside tunnel. E.g. DNS information inside VXLAN tunnel (outer UDP port 4789, inner UDP port 53). Requires inner tunnel filtering
- Analytics/Probes cannot handle tunnel information or gives misleading results when tunnel is present. Requires tunnel removal.
- In many (or all) instances, session-aware load-balancing using outer IP is ineffective. Typically, sessions rely on inner IP rather than outer IP. It is necessary to utilize inner tunnel information for load-balancing purposes.

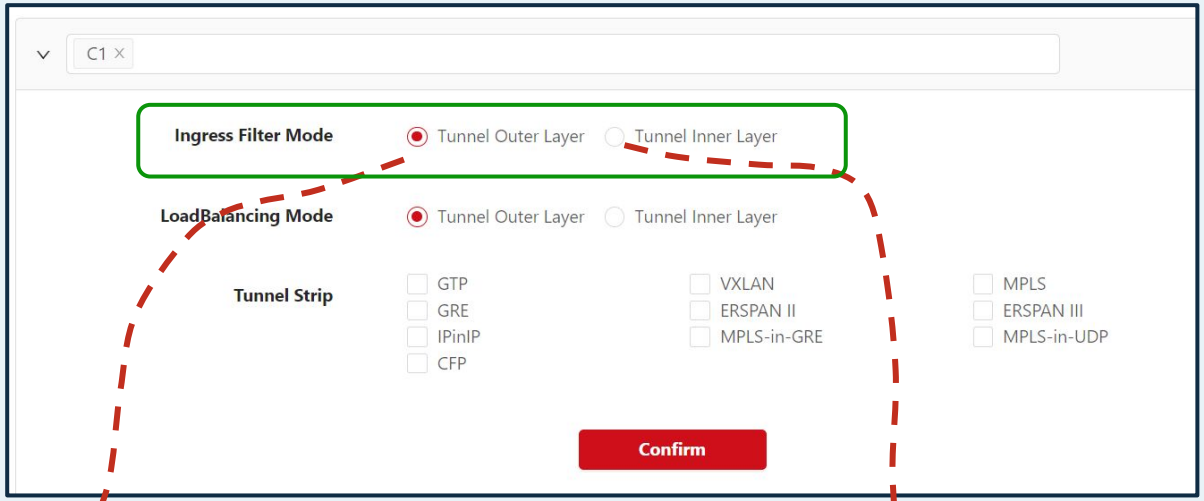
Tunnel Removal

Allows to **remove** a wide variety of **tunnel encapsulations** by simply selecting the tunnel type that should be stripped off and that are not required / unwanted by monitoring tools.



Outer or inner tunnel filtering

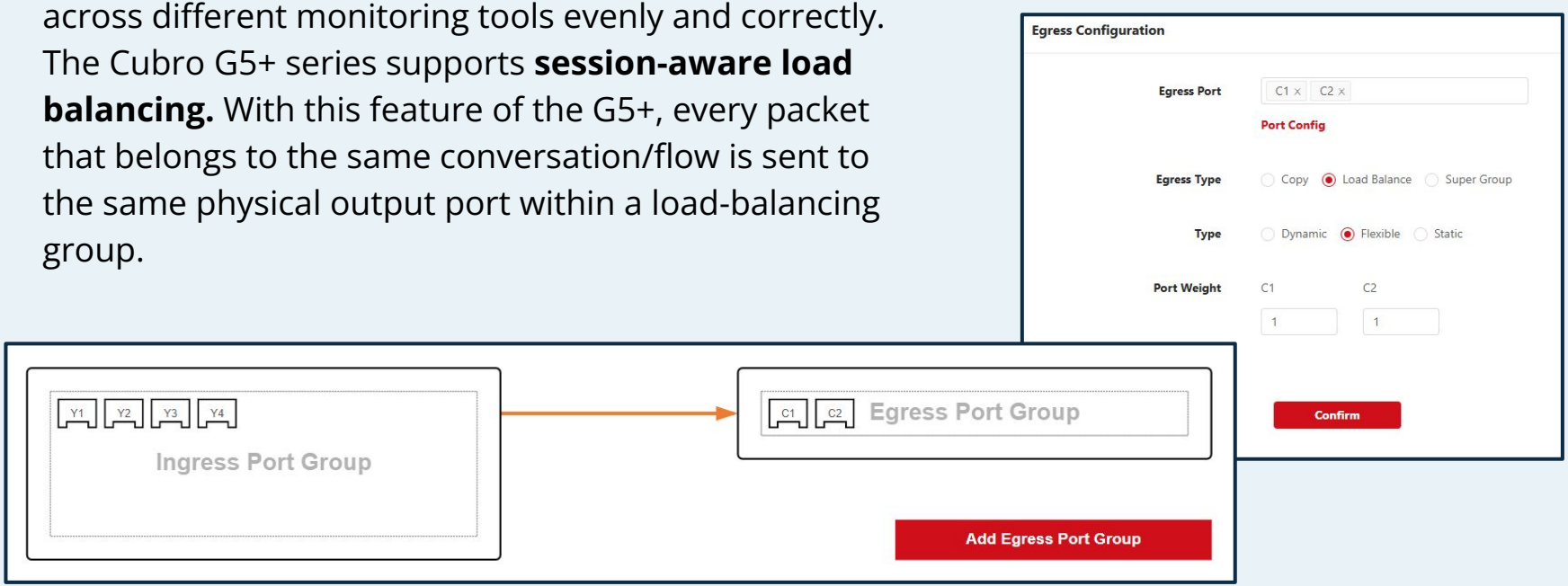
G5 plus series provides support for filtering on outer or inner tunnel packet parameters.



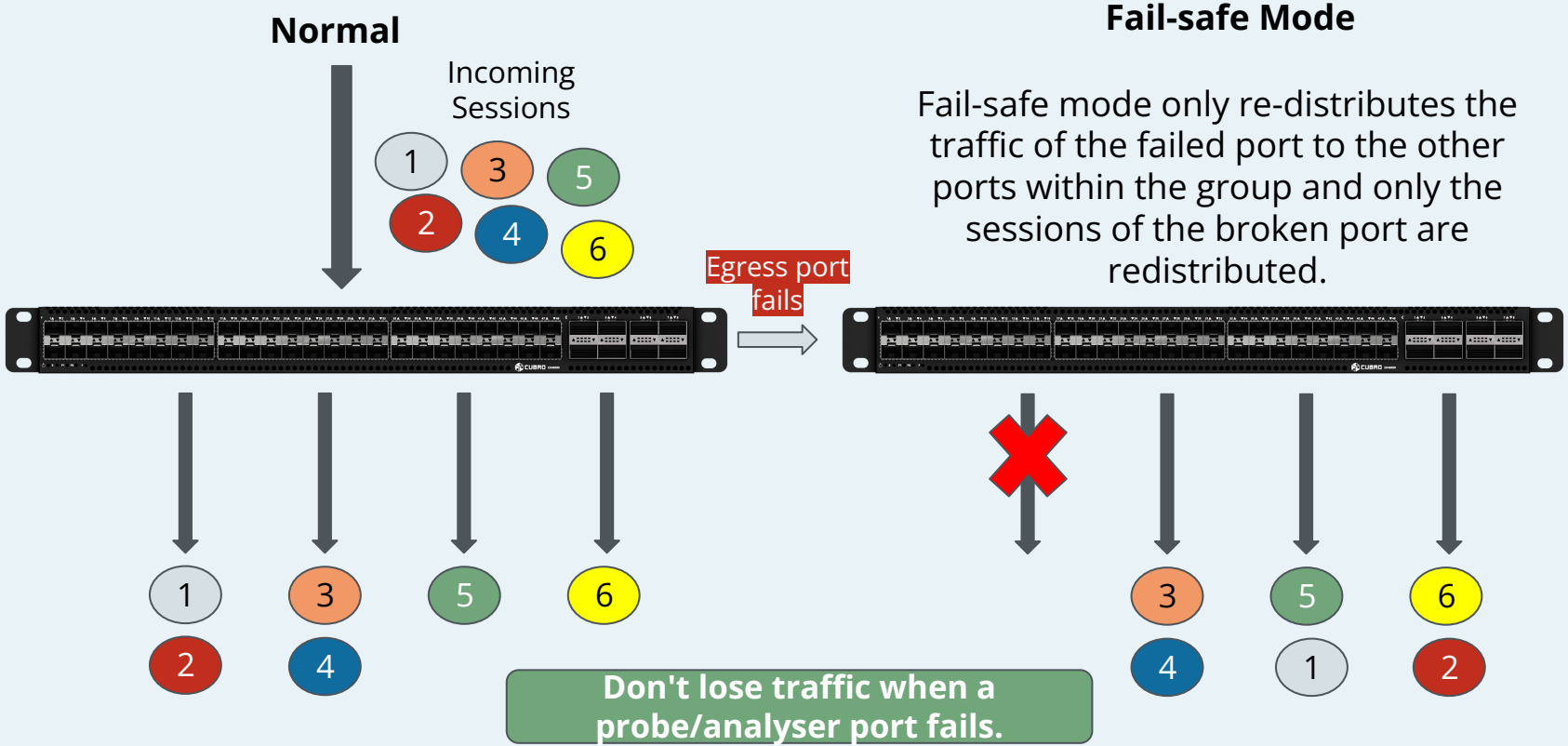
MAC	IP	UDP (Port 4789)	VXLAN VNI	MAC	IP	TCP/UDP	Data

Load-balancing

Load-balancing is a vital function to distribute traffic across different monitoring tools evenly and correctly. The Cubro G5+ series supports **session-aware load balancing.** With this feature of the G5+, every packet that belongs to the same conversation/flow is sent to the same physical output port within a load-balancing group.

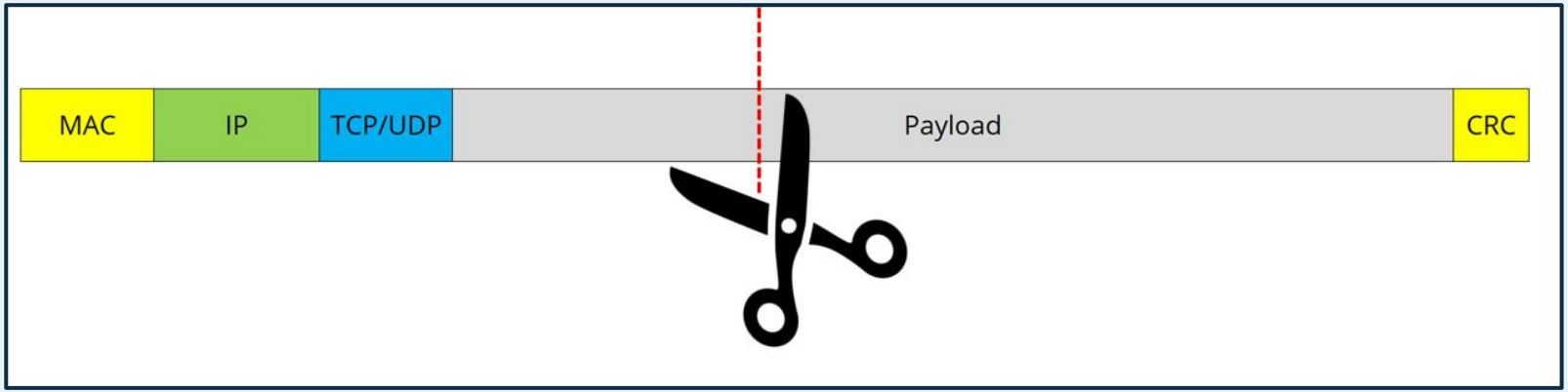


Fail-safe Load Balancing



Slicing for any packet size to reduce output bandwidth

- Cubro G5+ Advanced NPBs allow to set the slicing size to **any value between 64B and 9192 Byte.**
- FCS is automatically corrected; all other fields inside the packet stay unchanged.

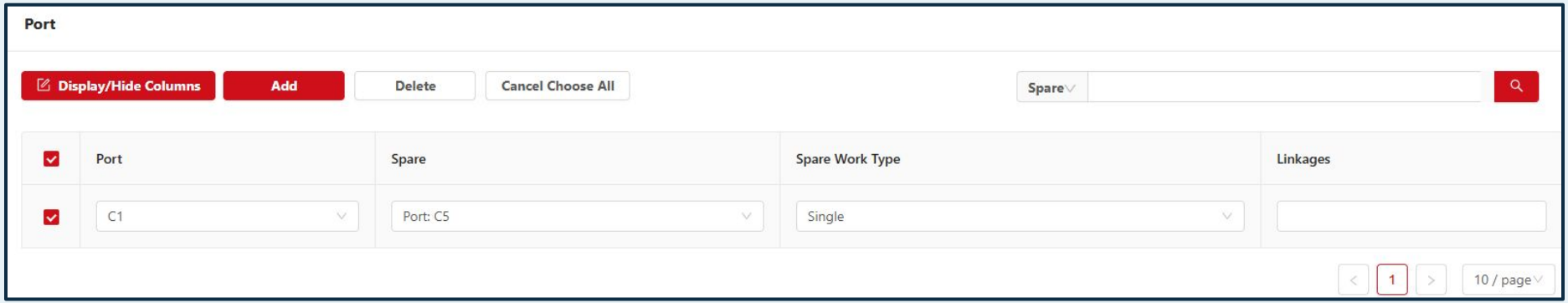


Reduces the output bandwidth sent to analytics and probing by removing parts of a packet that are not needed.

Easy output port redundancy

Allows to define spare port for any output port. When main output port fails, traffic is moved to backup port within **milliseconds**.

Also possible for complete load-balancing groups.



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