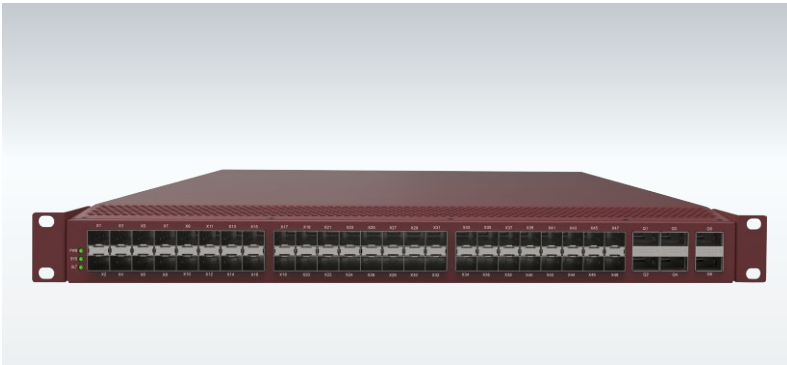# Cubro Sessionmaster EXA48600

PRODUCT REVIEW

The Sessionmaster EXA48600 is a network packet broker design based on newest and 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 central ASIC supports the latest technology features like P4 network description language for later advanced feature upgrade. The big manageable buffer size helps to overcome bursting issues in aggregation applications.

The Cavium multi core host controller supports application to faster interact with the network ASIC.

Extended Functions:

- L7 packet based filtering
- Software defined Counters
- Flexible Key Creation (Parse)
- Flexible Tables (Lookup)
- Flexible Packet editing (Modify)
- Integrated Traffic Management (Queue)
- Create new metrics (Count)

Network Packet Broker (NPB)
At a glance

Definition

A network packet broker (NPB) is a tool that receives data from number of network links, duplicates, aggregates and filters that data for the monitoring tools.

Advantages of EXA48600

- 10 Gbit / 25 Gbit / 40 Gbit / 100 Gbit
- Layer 7 support
- Can be customized to customer's requirement
- P4 language support
- No optical modules blocking
- Non Blocking backplane
- Link/Port Aggregation, Aggregation many to any, and any to many at all link speeds
- Low power design
- Python script App manager

PRODUCT CAPABILITIES / FEATURES

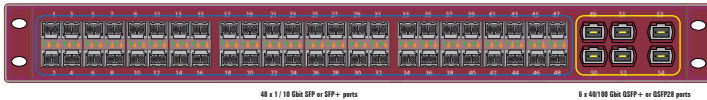|	
Filtering	Up to layer 7
Symmetric L 4 Load balancing based on 5 tuple hash	Advanced load balancing with non match output, support of multiple VLAN and MPLS tags.
GTP header stripping	Hot-swappable rule upgrading Tagging signature information on packet Ethernet header
VLAN and MPLS stripping	Multiple tag stripping up to 4 VLAN and 4 MPLS tags
Jumbo Frame Support	The Sessionmaster supports jumbo Ethernet frames with a size of up to 16000 bytes.
Network Buffer Memory	24 MB
GTP inner IP hashing	5 tuple hashing on the inner IP, in line rate up to multiple 100 Gbit
GTP header stripping	GTP header stripping in line rate up to multiple 100 Gbit
Ports	48 X 10 Gbps / 1 Gbps and 6 X QSFP 40 Gbps / 100 Gbps
Configuration / Communication	Serial/SSH/Telnet/FTP
Performance	Non blocking design 3.2 Tbps backplane 1,2 Billion Packets per sec forwarding
CPU	Cavium Xpliant & Mips64 48 Core as Host
MTBF	201,743 hours

The GTP stack looks like this, it is usually a normal UDP packet but in the payload you have a second IP packet encapsulated. A typical packet parser could not handle this encapsulated IP packet and filter on this second IP stack.

But with the EXA48600 we can generate a new key field for the parser so that we can filter (match) also on the second IP.

It is also possible to go higher in the stack to match in the user data. The only limit is that this matching is packet based, so each packet must have the match criteria.

User Data
UDP/TCP
IP
GTPv1
User Data
UDP/TCP
IP
Mac Header
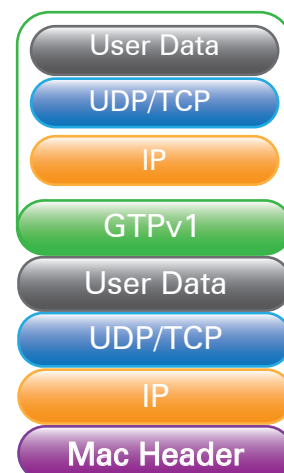
TECHNICAL DATA / SPECIFICATIONS

48 x 1 / 10 Gbit SFP or SFP+ ports   6 x 40/100 Gbit QSFP+ or QSFP28 ports

INPUTS*

48 x 10/1 Gbit full duplex
6 x 100 Gbit / 40 Gbit full duplex
QSFP Ports for any kind of QSFP

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

OUTPUTS*

48 x 10/1 Gbit full duplex
6 x 100 Gbit / 40 Gbit full duplex
QSFP Ports for any kind of QSFP

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

PERFORMANCE

Non blocking design
3.2 Tbps backplane
1,2 Billion Packets per sec forwarding

Operating specifications:

Operating Temperature: 0ºC to 45ºC
Storage Temperature: -10ºC to 70ºC
Relative Humidity: 10% min, 95% max
Non-condensing

Mechanical specifications:

Dimension (HxWxD): W=440.00 mm, L=660 mm, H=44,4 mm
Weight: 8.6 kg

Electrical specifications:

Input Power: 100-240V, 2A, 47-63 Hz (AC version)
Maximum Power Consumption: 400W

Certifications:

Fully RoHS compliant
CE compliant
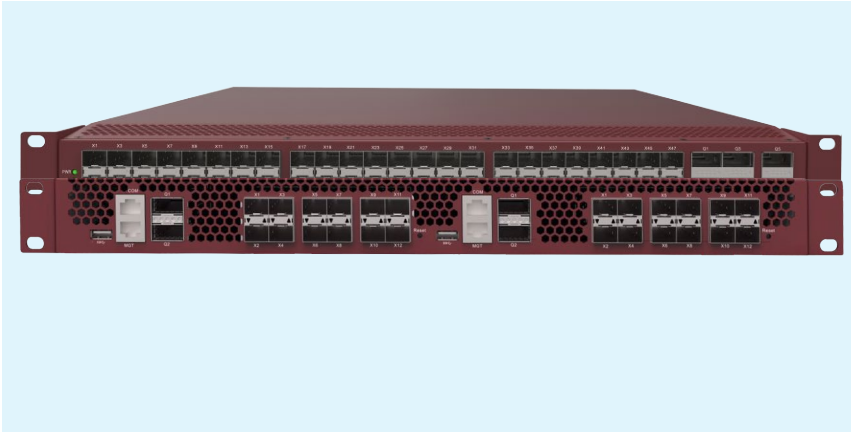Safety - UL 60950-1 / CSA C22.2 60950-1-07 / IEC 60950-1 (2005) EN 60950-1 (2006)

MANAGEMENT

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

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

USB 3.0 for software update

INDICATORS

Per RJ45 port: Speed, Link/ Activity

Per SFP+ port: Status, Rx, Tx, Link

Per Device: Power, Status

# ADVANCED FUNCTION DESCRIPTION

Session meet packet :

Packet based filtering is not sufficient any more. Session based filtering cannot be done with ASIC or FPGA and normal CPU is not capable of handling TB of traffic.

The idea is to separate these two functions in two entities - ASIC based up to L7 packet filtering and multi core based up to L 7 session handling.

Multi core based up to L7 session handling

The EXA48600 offers endless L2 – L7 packet performance & hugh amount of interfaces & the EXA24160 offers smart L 5 - L 7 session performance & huge amount of features.
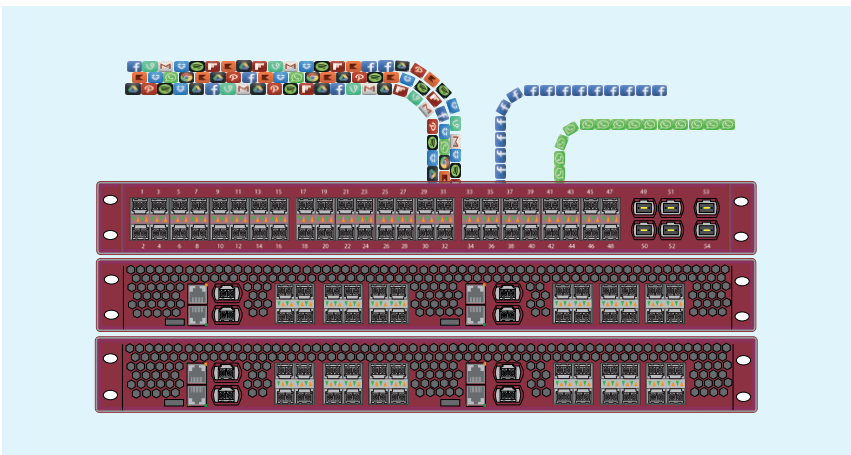

Application based filtering :

The combination of EXA48600 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 fabric are used.

The EX48600 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 EXA48600. The traffic is sent to other tools for more inspection. Currently up to 1000 application keys are available.

TYPICAL APPLICATION
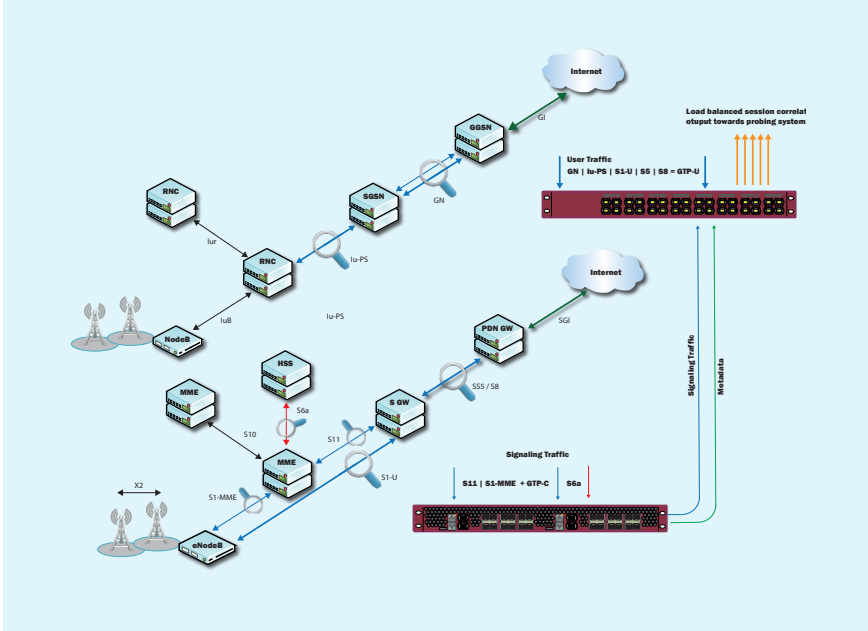
This is a typical application for EXA48600 and EXA24160 for GTP load balancing.

The EXA48600 handles the GTP-U traffic. The GTP-C traffic is handled with the EXA24160. The EXA24160 analyzes the GTP-C, S11, S6a , S1MME traffic, and produces meta data for the GTP-U load balancing in the EXA48600.

These two units can handle up to 400 - 500 Gbps 3G and 4G mobile traffic.

ORDERING INFORMATION

Product Components:

- Cubro Sessionmaster EXA48600
- AC/DC power supply
- European power cord
- (no SFPs included)

Part Number	Description
CUB.SM-EXA48600	Sessionmaster EXA48600, 48x10G and 6x100G QSFP28, AC power supply
CUB.SM-EXA48600-DC	Sessionmaster EXA48600, 48x10G and 6x100G QSFP28, DC power supply

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