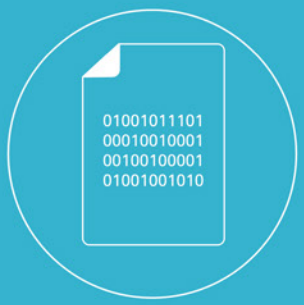
CUBRO
NETWORK VISIBILITY



EXA24160

DATA SHEET

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 EXA24160

- High-performance appliance offering layer 7 packet handling
- Can decode protocols like a probe
- Keyword and regular expression search
- Deep Packet Inspection (DPI)
- Load balancing GTPv1 and GTPv2 traffic
- Keyword filtering (IMSI filtering)
- Keyword filtering (called party filtering on SIP)
- General keyword filtering
- Session-aware load balancing
- GB & IUPS filtering 6 load balancing

Product Review

The Cubro Sessionmaster EXA24160 is the next evolution step in the row of the successful Cubro packet broker product line. The product range is capable of Layer 7 packet handling. Keyword and regular expression search is also a standard feature in this product line. The EXA24160 understands network protocols, not only by the port number but can also decode protocols like a probe. This function is vital to do keyword and regular expression search and to produce useful results.

The Sessionmaster EXA24160 focus on the mobile core network, metropolitan area network (MAN), and Internet data centre (IDC) big data monitoring. This Sessionmaster helps the customers deploy their network application flexible and quickly by aggregating, filtering, load-balancing and replicating the target traffic, deduplication, time-stamping, load-balancing the PSC/EPC, signalling-plane and user-plane traffic, and distributing specified traffic to multiple monitoring tools efficiently.

Functions / Benefits:

- **High port density and ultra-low power** - The Sessionmaster EXA24160 product provides up to 24 10GbE SFP+ ports plus four additional 40GbE ports in 1U. However, the typical power is 155W. In conclusion, the Sessionmaster EXA24160 can increase the access capacity and decrease the operation cost, providing the perfect solution for the next-generation network monitoring and traffic analysis.

- **Multi-dimensional traffic classification capability** - With the high-performance N-tuple classification algorithm, the Sessionmaster EXA24160 supports many traffic matching rules including the input port and VLAN id match, IPv4/ IPv6 5-tuple (supporting mask and range) match, bit-pattern filtering using user-defined attributes match, etc. Additionally, the Sessionmaster EXA24160 supports millions of extensible ACL rules. In this way, the flexible and robust traffic classification capability helps distribute the target traffic to the monitoring tools more efficiently.

- **Intelligent load balancing capability in the mobile core network** - The Sessionmaster EXA24160 can decode, track and identify the signalling protocols of various interfaces in the mobile core network. In this way, the Sessionmaster EXA24160 can not only extract and restore the specified signalling but also guarantee the traffic integrity of the same session or user during the load balance process.

- **Powerful packet pre-processing capability** - The Sessionmaster EXA24160 can pre-process the packet in many ways including:

  - Re-assembling the IP fragment
  - Correcting the retransmitted or disordered TCP flow
  - Slicing the packet
  - Deduplicating
  - Stripping the encapsulation or tunnel
  - Time stamping, etc.

  Therefore, the Sessionmaster EXA24160 both offloads for the monitoring tools and improves their operating efficiency significantly. With the powerful ability of data burst buffering and multi-dimensional data statistics, the Sessionmaster helps the monitoring tools troubleshoot typical problems including packet loss and disorder.

- **General keyword filtering** - The EXA24160 can classify the traffic with 7-tuple rule and string matching rule, both of these matches simultaneously. Users can set 63 string matching rules, and each rule supports up to 128 string patterns (hexadecimal number supported).

PRODUCT CAPABILITIES / FEATURES

Ports	2 x 12 x 10 Gbit SFP+ 2 x 2 x 40 Gbit QSFP
Management	2x RS232 RJ45 2 x USB 3.0 2x FE RJ45
Power	Dual AC power supply (100-240V) DC power modules available
L7 filtering performance	Up to 160 Gbps
L7 correlation performance	Up to 120 Gbps

TECHNICAL DATA / SPECIFICATIONS

Operating specifications:

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

Mechanical specifications:

Dimension (WxDxH): 440x620x44.4 mm
Weight: 12 kg
Airflow: Front-Back

Electrical specifications:

Input Power: 100-240V
Maximum Power Consumption: 155W

Certifications:

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

Inputs
24 x 10 Gbps full duplex SFP+ Ports for any SFP/SFP+
8 x 40 Gbps full duplex QSFP Ports
for any QSFP/QSFP+
* Each port can be input and/or output depending on the appli-cation and configuration

Outputs
24 x 10 Gbps full duplex SFP+ Ports for any SFP/SFP+
8 x 40 Gbps full duplex QSFP Ports
for any QSFP/QSFP+
* Each port can be input and / or output depending on the appli-cation and configuration

Performance
Performance up to 160 Gbps 150 million packets/sec
Non-blocking design
Boot time from power on to working 280 sec
Packet delay through processing less than 1 μs

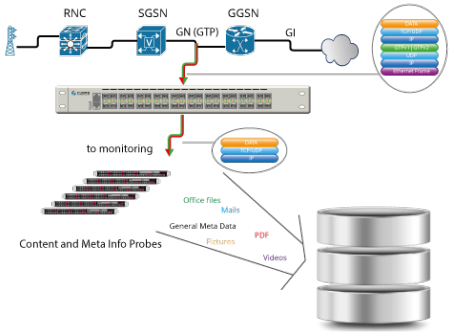
Management
Management Port: (2) RJ45
10/100/1000 Mbit Configuration (CLI) Port: (2) RS-232 DB9 USB

Indicators
Per RJ45 port: Speed, Link/ Activity Per SFP+ port: Status, Rx, Tx, Link
Per Device: Power, Status

APPLICATIONS / SOLUTIONS

IMSI (International Mobile Subscriber Identity) filtering application

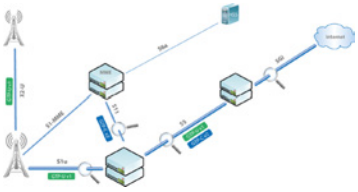
If you need to monitor a customer or a bunch of customers in a mobile core network you have two ways. Capture all traffic with a large and expensive monitoring system, and search later in the database of the monitoring system for the customer's traffic, to analyse it. The other option is smart filtering.



The Cubro Sessionmaster EXA24160 can do this filter correlate and aggregate the traffic of one or a bunch of customers, based on the IMSI. This is done on line in Sessionmaster so that
you can connect simple monitoring devices (Laptop & Wireshark) to analyse the traffic. The Sessionmaster forwards traffic in a small portion, and therefore the user can capture it with a small capturing device.

It is a two-stage concept; typically the GN ports carry much traffic up to multiple 10 Gbps. Therefore it must split the traffic into smaller portions. The first stage is to load balance the traffic session aware to 20 Gbps portions. In the second step, the Sessionmaster EXA24160 correlates the GTP traffic (4 tunnels) and search for the IMSI in the signalling tunnel. The information in the signalling tunnel provides the transport information to find the customer traffic in the data tunnels.

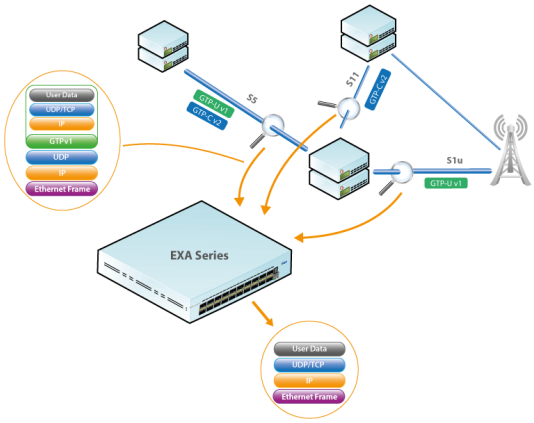
HTTP filtering in the GTPv1 or GTPv2 tunnel in a core UMTS LTE Network



These applications show the capability of the Sessionmaster EXA24160 to filter inside the GTP tunnel without removing the GTP header. The application is filtering the HTTP traffic inside the tunnel and load balance the traffic. As an additional feature, the GTP header could also be removed from the filtered traffic.

In line GTP tunnel decapsulate & tunnel encapsulate

This application is a very challenging approach; the idea is to remove the GTP tunnel only on HTTP traffic, process the traffic and add the GTP tunnel in the life link.



1. The traffic is sent over a Cubro optical bypass switch to the Sessionmaster EXA24160, to protect the live link in case of a failure
2. From the Bypass, the traffic goes to the EXA24160. The EXA24160 removes the GTP tunnel but stores the tunnel information
3. The EXA24160 sends the pure (without GTP header) IP traffic to the application server (firewall, IDS, proxy ...)
4. After processing the traffic is sent back to the Sessionmaster EXA24160
5. The EXA24160 now sends the packets with the original GTP header re-encapsulated, over the optical bypass switch back to live link
6. The traffic is now reinserted in the live link

ORDERING INFORMATION

Product Type & Number	Description
CUB.SM-EXA24160	Sessionmaster EXA24160, AC power
CUB.SM-EXA24160-DC	Sessionmaster EXA24160, DC power
CUB.PS-EXA24160-DC	DC Power supply module for Sessionmaster EXA24160 series
CUB.RR19-1U	Universal Rackrail Kit for 1U 19" units (Packet/Sessionmaster)

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