

Qosmos Network Intelligence for Lawful Interception

Intelligence at Every Step of the Interception System

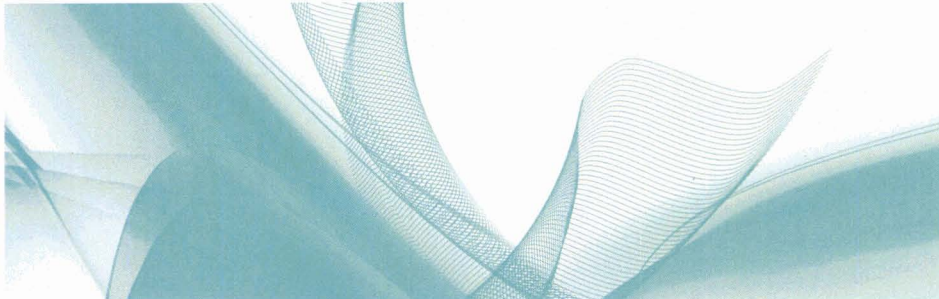
Product: ixMachine LI Probes and ixEngine SDK

Applications: Interception, HI3 Filtering, Monitoring Center

Users: Suppliers of LI and Intelligence Solutions, Law Enforcement Agencies, Systems Integrators

Key Features: Identification of targets and interception of IP communications

For More Info:
www.qosmos.com



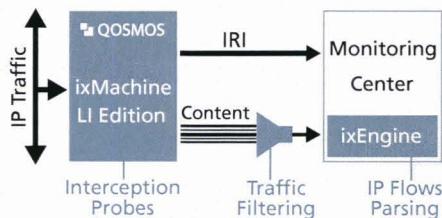
Lawful Interception (LI) solution vendors require the capability to see inside protocols and IP-based applications used by subscribers in many functions of a system including:

- At the interception point
- In the Monitoring Center
- In traffic filtering and cleansing devices

Qosmos expertise in real-time parsing of all popular IP-based applications is crystallized in 2 products used by LI solution vendors at critical steps of the interception process:

- 1) ixMachine LI Edition probes:
For laser sharp interception up to 20 Gbps
- 2) ixEngine Software Development Kit:
Software libraries embedded in monitoring centers to extract communication attributes and content from IP flows. Also used to filter intercepted traffic.

Qosmos Technologie in a LI System



Qosmos Network Intelligence at the Interception Point

Product:

ixMachine LI Edition probes

Benefits:

- Interception of all services operated by Telcos (VoIP, email) and over-the-top services (webmails, Instant Messaging, etc.)
- Identification of users on any IP-based application ID (login, address, etc.)
- Support interception at very high throughputs: monitoring of 20 Gbps per probe, up to 160 000 sessions intercepted simultaneously
- Passive probes, no impact on the network

Qosmos Network Intelligence in the Monitoring Center

Product:

ixEngine Software Development Kit for IP flow parsing

Benefits:

- Parses all existing and popular new protocols and applications
- Decodes unclear traffic (non HI3, partial, etc.)
- Extracts communication metadata to index intercepted traffic
- Less storage and faster data access by working with application metadata instead of packets

Qosmos Network Intelligence for Layer 7 Traffic Filtering

Product:

ixEngine embedded into a layer7 traffic filtering device

Benefits:

- Enables Monitoring Center to scale by discarding irrelevant packets (IPTV, ads, etc.)
- Optimized storage
- Lower risk of information overload among analysts

"The proliferation of new IP-based applications and the exponential growth of traffic volumes are the key issues faced by LEAs and Interception Solution Vendors. Our product strategy is designed to address these challenges."

Jerome Tollet
CTO, Qosmos

Case Study of LI Solution Embedding Qosmos Technology

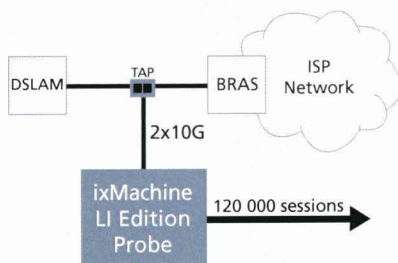
Overview

- Interception system for a whole country
- Monitoring of 550 Gbps in real time
- Qosmos ixMachine LI Edition at the interception point for IP traffic
- Qosmos ixEngine used in HI3 filtering and in a monitoring center developed by a LI solution vendor
- This reduces the number of packets processed and stored by the monitoring center by 90%
- Instant upgrade of the monitoring center capability from 100 simultaneous targets to 900 users while keeping the same hardware

1) Interception with ixMachine LI Edition

- 21 x ixMachine LI Edition 10 031 probes with 4 x 10 GE links each
- Each probe monitors up to 20 Gbps of traffic and intercepts 120 000 simultaneous sessions
- Unlimited number of interception rules
- 47 x ixMachine LI Edition 1041 with 8 x 1 GE links
- Each probe monitors up to 5 Gbps of traffic and intercepts 60 000 simultaneous sessions
- Unlimited number of interception rules

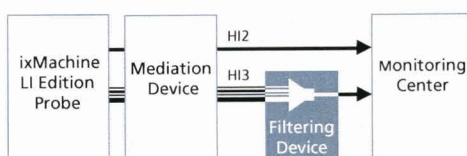
Place of Qosmos technology in LI System



- Passive probes plugged in TAP mode has no impact on the network
- Interception on any application ID (login, email address, etc.) for all popular IP-based services
- Advanced interception on keywords

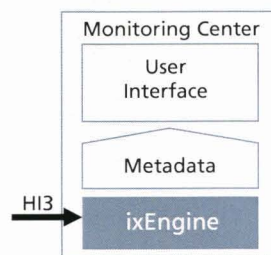
2) HI3 Filtering with ixEngine

- HI3 filtering device embedding Qosmos ixEngine developed by a LI solution vendor
- ixEngine accepts HI3 packets, parses HI3 flows in real-time to identify applications (email, webmail, video streaming, etc.)
- Based on the application identification provided by Qosmos ixEngine, the HI3 filter selects only relevant packets (e.g. IPTV, ads and Youtube packets are discarded) and forwards them to the Monitoring Center



3) ixEngine in the Monitoring Center

- ixEngine embedded in the Monitoring Center accepts Ethernet, IP and HI3 formats
- ixEngine parses the flows in real-time to extract metadata and content for
 - Standardized protocols: email sender, receiver, message text, VoIP caller and callee, etc.



- Complex IP-based applications such as Instant Messaging and webmails
- Correlating communication attributes and content decreases storage requirements compared to storing the entire data flows (full packet capture) by a factor of up to 1/150

Space required to store a Yahoo! Mail message

Metadata	Value
Sender	john@email.com
Receiver	peter@yahoo.com
Date	2010/08/09
Subject	Metadata enables major storage savings
Message	Qosmos Networks Intelligence Technology extracts metadata at all ...

2.5 Gb	15 kb
Full Packet Capture	ixEngine Metadata

Global System Performance

- 550 Gbps monitored in real time
- Up to 5.3 Million simultaneous sessions intercepted
- Usage of Qosmos metadata and content allows LEA to store 2 years of communications instead of 6 months

Why Qosmos Was Selected

1) Ability to Manage Very High Throughputs

- 20 Gbps interception probes
- Ability to offload the Monitoring Center with smart traffic filtering
- Strong expertise in multicore processors

2) Total Visibility of Traffic Flows

- 10 years+ expertise in IP traffic parsing
- 1000+ protocols and applications analyzed
- Expertise in complex IP-based applications such as IM and Social Networks
- Updates of existing and new protocols within days

3) Trusted Leader in Network Intelligence

- Qosmos is the leading provider of IP interception probes
- Extensive track record with government related projects and solutions

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