

Qosmos Probe as a DPI Sensor for Cyber Defense

Extreme Throughput and High-Resolution Traffic Intelligence for the Most Demanding Environments

Key Facts

Full Traffic Visibility

- ▶ Provides full visibility into network traffic up to Layer 7, including protocol details: File extensions, content...
- ▶ Brings new capabilities that pinpoint key data, decreasing false positives
- ▶ Shortens detection and investigation time
- ▶ Reduces size of forensic data by up to 150x compared to full packet capture

Best-in-class Classification and Metadata Extraction

- ▶ 3200+ protocols classified and 5000 application metadata extracted
- ▶ Unique real-time Deep File Inspection capabilities
- ▶ Precise end point identification (device, IP, user, domain name, etc.)
- ▶ Protocol metadata specific to cybersecurity requirements

Easy Integration

- ▶ Standard formats, normalized data streams, and connectors
- ▶ Flexible management, including NETCONF API

Powerful Flow Processing

- ▶ Scales to n x 10 Gbps of traffic per probe
- ▶ Classification of traffic encapsulated into all types of tunnels (GTP, GRE, PPOE, etc.)
- ▶ IPv6 compliant

As cyber attacks against public cyberspace and national infrastructure become increasingly sophisticated, effective threat analytics require accurate and detailed input from different sources. One key source of information is the network traffic itself. The more detailed the traffic visibility available to analytics solutions, the more accurate the detection and investigation capabilities will be.

A sensor (or software probe) using Deep Packet Inspection (DPI) provides the most granular detail available, delivering a complete picture of activity in any size network. By passively capturing packets, detecting applications, parsing protocols, and extracting traffic metadata, it can significantly improve detection of attacks and raise the performance of proactive threat hunting.

The Qosmos Probe is a DPI sensor that embeds the market-leading DPI engine, Qosmos ixEngine®. It leverages years of experience in cyber defense environments and is a key component of the security technology stack for government-run Security Operations Centers (SOCs). For these sensitive environments, combining DPI information with a proprietary, confidential solution creates an additional layer of security, complementing turnkey commercial products such as IDS, which have technical capabilities that can be known by attackers.

DPI Sensor Applications

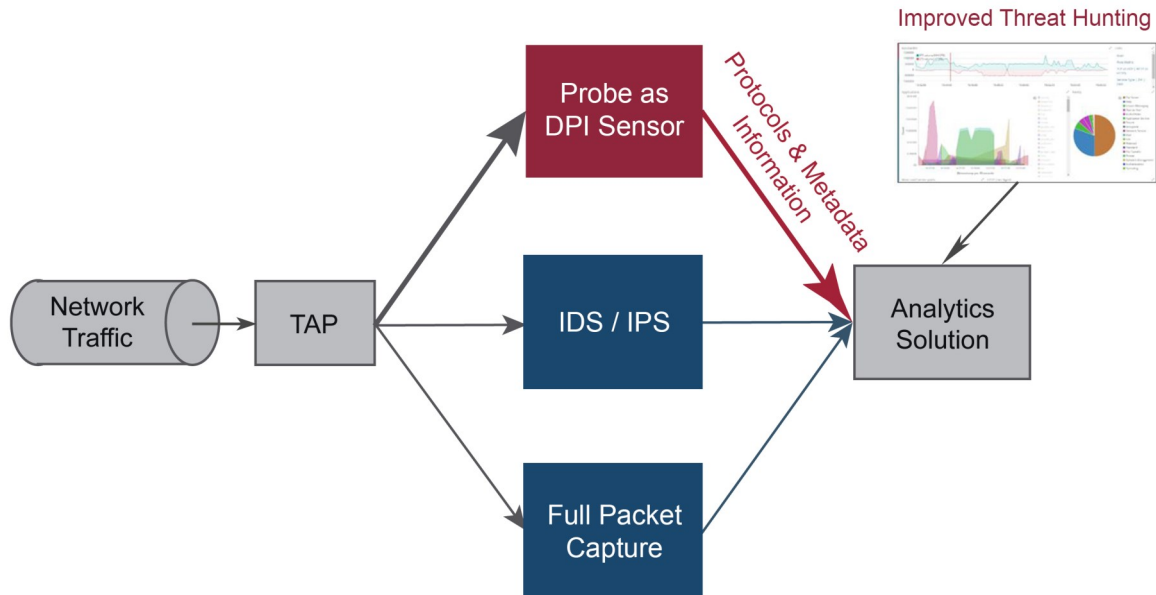
1. A rich information feed to strengthen threat analytics

Metadata extracted from traffic flows boosts machine learning for threat analytics platforms. This translates into more accurate alerts, shorter time-to-detection, and fewer false positives.

2. An expert tool for network forensics and threat hunting

A DPI sensor streamlines investigations and improves time-to-detection for network forensics and threat hunting by capturing and storing detailed traffic information in a database where it can be rapidly and easily accessed for query and visualization. In addition, the sensor provides high information resolution using a fraction of the storage required for full packet capture because it only requires traffic metadata (sender, receiver, device type, file type, etc.), discarding irrelevant content, such as video.

Qosmos Probe as Part of a Cyber Defense SOC



Performance

- Up to 20 Gbps traffic per probe, can be stacked and managed as a single entity
- 1 Gbps / core CPU, 4GB RAM per Gbps

Data Aggregation

Ability to send cross-flow records (statistics per IP, per application, per Host Name....) to reduce the number of Events per Second

Deep File Inspection

Detects file type, checks consistency between MIME type and file extensions, computes file hash and extracts metadata.

- File hashes: MD5, SHA-1, CTPH
- More than 280 file types: application, video, audio, text...

Analytics Sample for Cyber Security Operations

- Keys: flow_id,application, ip_srv, port_srv, ip_clt, http.server, http.uri_path, http.code...
- Metrics: stc_packet-count, stc_volume, dfi.mimetype*, dfi.ctph*, http.mime_type...

*dfi = Deep File Inspection, i.e. inspection of file content

Statistics aggregation can be exported in CSV, IPFIX or JSON (compatible with ELK and InfluxDB databases)

Custom Signature Module (CSM)

The CSM module allows you to create your own classification signatures and load them into the Qosmos Probe in real-time.

Configuration and Management

- NETCONF API
- Multi-tenant Centralized Management Console for configuration and status information (counters, errors, log messages, configuration)

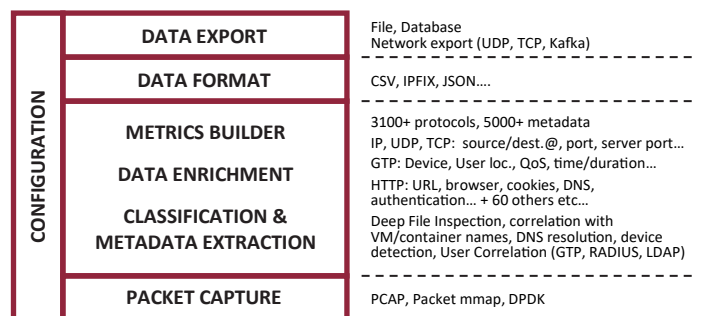
Integration in a Physical Appliance

- Runs on commodity hardware (x86_64 architecture)
- CentOS or RHEL 7
- DPDK packet capture framework

Deliverables

Qosmos Probe is delivered as a fully customizable Linux application: Probe Software Package (e.g. VM, container, RPM...).

Qosmos Probe Architecture



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Enea develops network software for the connected society, supplying solutions for mobile traffic optimization, subscriber data management, network virtualization, traffic classification, embedded operating systems, and professional services. More than 3 billion people around the globe rely on our technologies in their daily lives. Enea's leading DPI-based IP traffic classification and network intelligence software is embedded by vendors and integrators into their products sold to telcos, cloud service providers and enterprises. For more information on Enea's Qosmos Probe or Qosmos DPI technology: www.qosmos.com.