QOSMOS

Application Datasheet

Qosmos ixEngine®: Mobile Data Offloading Use Case

Application awareness to enable data delivery with network technologies complementary to 3G/4G such as WiFi networks or femtocells.

Overview

The Needs

- Fine granularity of application detection to feed WLAN controller
- True protocol and application-ID classification without relying on ports
- Detection of obfuscated and cyphered applications such as P2P and other bandwidth hungry services
- Ability to analyze 10 - 40 Gbps traffic
- Stateful analysis with session correlation, advanced heuristics, machine learning algorithms and grammatical analysis

The Solution

- Qosmos ixEngine®, the most widely used DPI engine on the market (75% market share)
- Optimized code and support for all leading processor environments
- Pre-integration of DPI engine with multi-core processors and high-performance dataplane software
- New form factor available for virtual Evolved Packet Core (vEPC) environment
- Classification rate of more than 95% for obfuscated and cyphered applications *

** ratios measured on real traffic*

Mobile data offload solutions typically treat all traffic flows equally without distinguishing the application involved or the device used. However, in LTE deployments, network operators need to selectively steer traffic flows based on the application used:

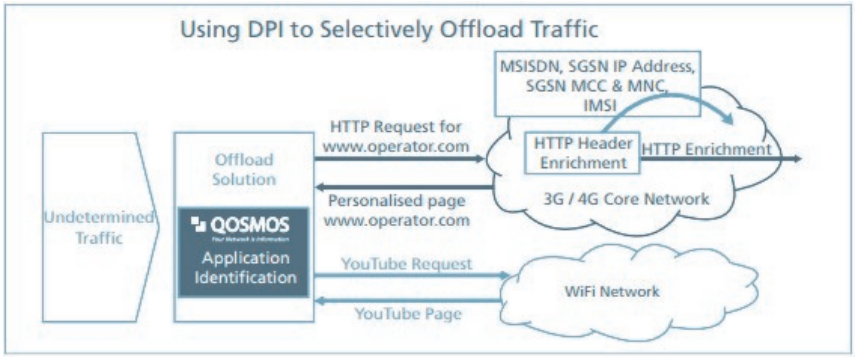
1. Applications that require personalization (for example the carrier's mobile web portal) or that are submitted to a specific charging scheme (MMS, VoIP, partnership with OTT services) need subscriber information that can only be found in the mobile network (MSISDN, SGSN IP address etc.). These applications should remain on the 3G/4G network that supports personalization such as HTTP header enrichment.

2. Bandwidth-intensive applications that do not require personalization (like video streaming) or charging, can be offloaded to PDN networks.

In order to implement differentiated flow steering, mobile data offload solution vendors need a reliable application detection technology relying on Deep Packet Inspection (DPI). Qosmos DPI engine enables vendors to implement smarter offload strategies based on total flow visibility.

Qosmos enables developers to:

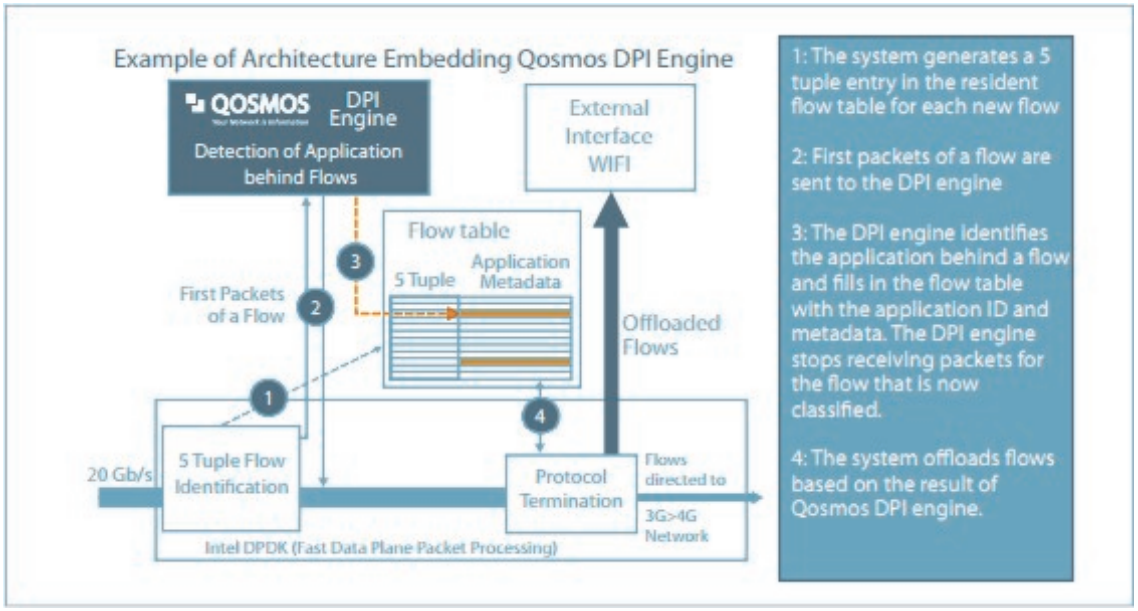
- Identify all traffic flows on networks, including HTTP based applications (Facebook applications within Facebook social network, YouTube, etc.) and non-HTTP based applications (Instant Messaging, P2P, etc.)
- Add custom application plugins to detect applications like the carrier's mobile portal or carrier operated services
- Benefit from advanced failsafe mechanisms such as sandboxing and session state recovery
- Embed DPI technology in a matter of weeks, dramatically reducing time to market compared to in-house development



Reference Design: DPI Engine Embedded in Smart WLAN Controller for WiFi Offload

This system embeds Qosmos 3rd generation DPI engine (ixEngine) in a x86 based server with Intel® DPDK data plane for high speed packet processing. The Qosmos DPI engine interfaces with the resident flow table that supports the stateful management of the system, providing a highly integrated architecture.

This architecture enables the system to feed Qosmos DPI engine only with the packets that are relevant for application identification (usually the first packets of a flow). This provides optimal system performance.



Technical Requirements

- Rich protocol and application recognition
- Integration on X86 and optimization for Intel® DPDK data plane
- 20 Gbps throughput

The Challenge

- Classification and analysis of L7 applications in wireless networks
- Affordable technology cost per Gbps
- Correlation of flow / session with application / service at user level

Architecture

- Mobile data offload program code and Qosmos DPI engine libraries located on the same x86 processor, sharing memory
- Stateful system with a resident flow table located into the data offload application
- Flow table shared with Qosmos ixEngine
- Optmized performance based on shared flow table so the system stops sending packets to the DPI engine once the application is identified
- Intel DPDK data plane for fast packet processing at 20 Gbps

The Qosmos Advantage

- Continuously updated protocol plugins in line with evolving market needs (“Evergreen” principle)
- On-demand Qosmos development of custom plugins
- Independence and flexibility with tools for developers at TEMs and MNOs to develop their own signatures
- Stringent SLAs - 24/7/365 worldwide

Qosmos Leadership

- Enables mobile data offload solution vendors to enhance their solution
- Qosmos DPI engine supports the requirements for application identification and metadata extraction. Metadata such as RTP codec or jitter, HTTP URL or RTT are used to evaluate the quality of service for each flow
- Only Qosmos DPI engine provides thousands metadata for total visibility on what applications are used and how they are used. Qosmos DPI engine supports smart applications such as analytics, application aware charging, QoS/QoE monitoring

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The Network is Information

Qosmos is the leader in embedded Deep Packet Inspection and L7 Network Intelligence for use in physical, virtualized and SDN architectures. The company’s software development kit and probes are embedded by vendors into their products sold to telcos and enterprises. For more information: www.qosmos.com