

Qosmos Classifier®

Enea’s Qosmos Service Classifier is a dedicated software function with open SDN & NFV interfaces, designed according to IETF Service Function Chaining (SFC) standards, to enable any type of service combination while optimizing networking and infrastructure costs. Systems integrators and solution vendors can leverage this service classifier to enable intelligent, dynamic service chaining for Gi-LAN, SD-WAN or vCPE.

Overview

Key Facts

- ▶ Software appliance or ETSI-compliant Virtual Network Function (VNF)
- ▶ Open interfaces with SDN & NFV environments (IETF SFC/NSH, ETSI NFV, ONF OpenFlow, IPv6 and MPLS Segment Routing)
- ▶ Leverages policies and rules up to Layer 7 coupled with subscriber classes
- ▶ Inline service category (e.g. video service) and application metadata (as required)
- ▶ Supports out-of-band monitoring and statistics export
- ▶ Integrates Qosmos ixEngine® DPI engine
- ▶ ISSU software upgrade support
- ▶ Standard interface for configuration (JSON format) and services (VLAN, ToS, etc.)
- ▶ Guaranteed latency system
- ▶ High availability design
- ▶ Application and subscriber awareness
- ▶ Supports legacy applications and new environments

Benefits

- ▶ Enables fast and easy service creation
- ▶ Optimized costs for network and servers
- ▶ Smooth migration between existing and future architectures

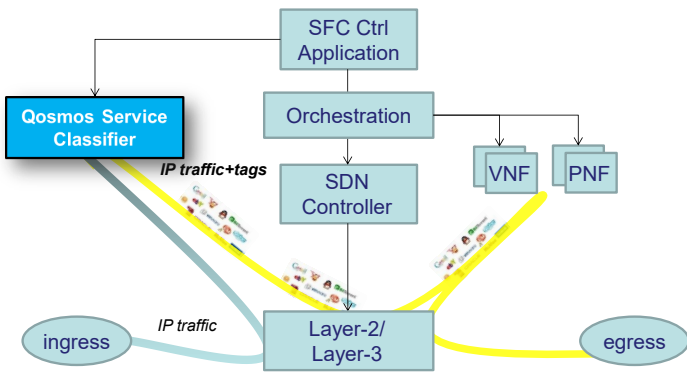
Service chaining allows operators and service providers to configure network services dynamically without having to make changes to the network at the hardware level. Benefits include network optimization based on better utilization of resources and monetization, thanks to the provisioning of services tailored to each customer context. Dynamic service chaining also enhances operators’ ability to adapt to change and expands the addressable market for network services.

The service classifier is a function defined by the IETF which plays a critical role by classifying traffic to enable flexible and cost-effective service creation. The technical capabilities of a good classifier should be in line with key operator requirements, as described in the table below.

Requirements	Qosmos Classifier Capabilities
Fast and easy service creation	Open SDN & NFV interfaces, which make it easy to programmatically create any type of service combination
Lower cost for bandwidth and servers	Optimized network resources and CPU utilization thanks to a packet tagging mechanism based on both subscriber and application awareness which makes it possible to steer relevant traffic to relevant service nodes
Lower cost for software and hardware	Deployed on COTS hardware and leveraging open source software frameworks (e.g. OpenStack, OpenDaylight)
Future-proof architecture	Based on service chaining standards (ETSI, IETF), with provisioning through orchestrator (e.g. OpenStack) and SDN controller (e.g. OpenDaylight)
Smooth migration between existing and new architecture	Supports both existing and new environments: <ul style="list-style-type: none"> • Tagging mechanism turns any of the L2 and L3 equipment into flow-aware functions • Supports physical and legacy applications with reclassification and SFC proxy
Extensive recognition of networked applications	<ul style="list-style-type: none"> • Classifies 3,000+ protocols and applications, with service categories (e.g. video services) and metadata • Able to recognize and classify encrypted applications (e.g. Skype, BitTorrent)

Real-time application-awareness is particularly important for effective service chaining in an environment where traffic volumes are expected to grow exponentially in the foreseeable future. This is mainly driven by online video, which is expected to represent 82% of all IP traffic¹ by the year 2021 . To ensure a scalable network architecture, it is therefore essential to leverage information about applications so that flows are only sent to relevant service nodes (e.g. video).

1. Cisco VNI Global, 2016-2021



Features²

- Deployed as software or virtual appliance (or custom package as required)
- Leverages a set of policies and rules resulting in networking actions based on L7 criteria using both underlays and overlays (VLAN tagging, ToS modification, Dest. MAC address modification)
- Subscriber-aware policies and rules through IP address and subscriber class provisioning
- Networking configuration using JSON format file
- Classifies 3,000+ protocols and applications along with service category and metadata (as required)

- Support for IA leveraging Intel® DPDK
- Video service identification
- Metadata export through IPFIX for third party systems (monitoring, statistics, NOC, etc.)
- Configurable latency for tagging mechanism, to ensure that all incoming packets are tagged

System Requirements (for 10 Gb/s symmetric traffic)

- Red Hat KVM (in the case of VNF)
- Intel Ivy Bridge - 8 cores
- ARMv8 support available on request
- Dual 10 GbE NIC
- 16 GB of RAM, 10 GB of disk

Partner Ecosystems

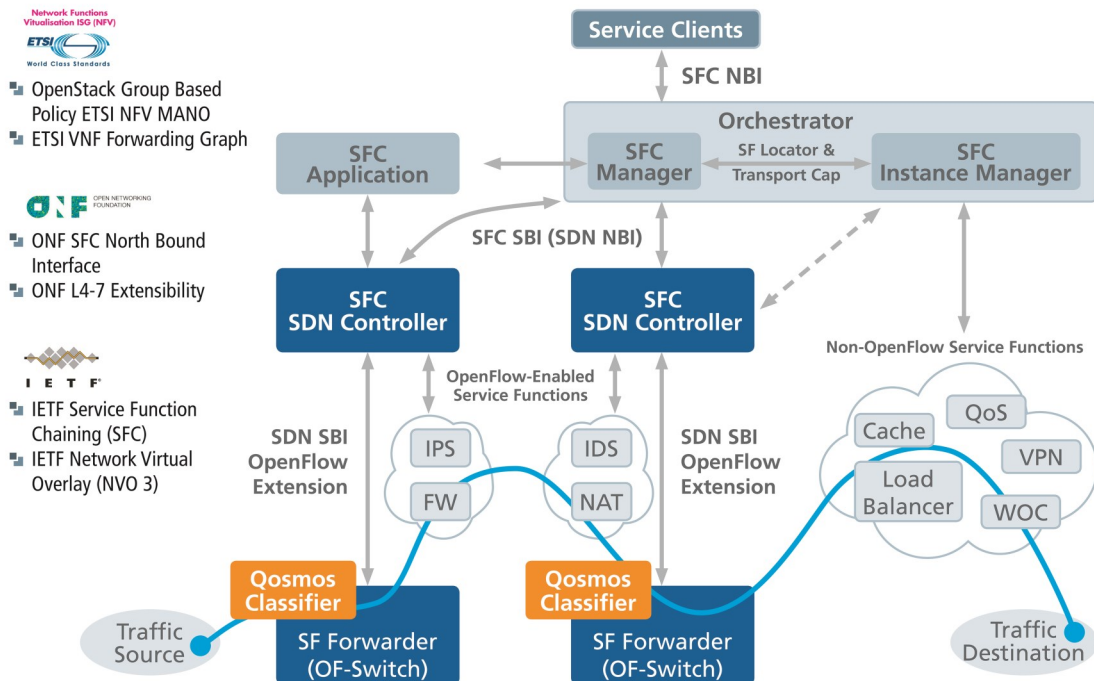
- Available through HP OpenNFV and NEC SDN Partner Space
- Available through Kapsch CarrierCom
- Compliant with Linux Foundation OPNFV

2. Some features may not be immediately available, but are part of the product roadmap

Qosmos actively contributes to networking standardization initiatives, as illustrated in the diagram below.

Compliance with draft IETF SFC:

- <https://datatracker.ietf.org/doc/rfc7665/>
- <https://datatracker.ietf.org/doc/draft-ietf-sfc-nsh/>



- Network Functions Virtualisation (NFV) World Class Standards
 - OpenStack Group Based Policy ETSI NFV MANO
 - ETSI VNF Forwarding Graph
- OPEN NETWORKING FOUNDATION
 - ONF SFC North Bound Interface
 - ONF L4-7 Extensibility
- I E T F
 - IETF Service Function Chaining (SFC)
 - IETF Network Virtual Overlay (NVO 3)

Find out more on the Qosmos website!



Qosmos, a division of Enea, is the leader in IP traffic classification and network intelligence technology used in physical, SDN and NFV architectures. Qosmos ixEngine software development kit and components are embedded by vendors and integrators into their products sold to telcos, cloud service providers and enterprises. For more information: www.qosmos.com