

EXECUTIVE BRIEF

IMPROVE NETWORK EFFICIENCY WITH DEEP PACKET INSPECTION



COMMUNICATIONS
INDUSTRY:
NFV INFRASTRUCTURE
ADD-ON

85%

of communications industry IT executives consider improving infrastructure efficiency to be a top priority.¹

A service-aware NFV infrastructure from Red Hat and Qosmos improves network efficiency and reduces costs through dynamic service chaining and intelligent traffic routing.



facebook.com/redhatinc
@redhatnews
linkedin.com/company/red-hat

redhat.com

EFFICIENT SERVICE CHAINING IN A VIRTUALIZED ENVIRONMENT

In order to remain competitive in an increasingly crowded market, communications providers must operate more efficiently. However, both physical and virtual network infrastructures commonly use an inefficient static chain model that routes all network traffic to every service node, regardless of whether the information is relevant to that node. Then, as overall network traffic grows, all services must be scaled out to handle the increase, even if traffic for a particular service has not grown.

A service-aware NFV infrastructure allows network traffic to be routed intelligently through the use of deep packet inspection (DPI). This dynamic service chaining model directs network flows only to the applicable service nodes. As network traffic for a given service increases, only that service needs to be scaled out, reducing infrastructure costs. Plus, the ability to segregate network flows based on application, protocol, and user allows you develop layered service offerings. Adding the Qosmos Service Aware Module (SAM) DPI module to the Red Hat® and Intel NFV infrastructure¹ allows you to implement dynamic service chaining in an open, enterprise-grade network environment so you can improve operational efficiency, reduce costs, and differentiate with premium services.

IMPROVE EFFICIENCY WITH A SERVICE-AWARE INFRASTRUCTURE

A service-aware NFV environment from Red Hat and Qosmos lets you intelligently route network traffic for more efficient operations and reduced infrastructure costs. Within the NFV environment, the Qosmos SAM DPI module classifies each network flow based on collected metadata and sends this information to the virtual switch, which directs the flow to the appropriate service nodes in the correct order, as shown in Figure 1. The result is reduced network consumption and a streamlined, efficient network infrastructure. Each component of the Red Hat and Qosmos solution plays a key role in delivering a highly available service-aware network infrastructure.

- **Red Hat and Intel NFV infrastructure.** Based on Red Hat Enterprise Linux®, Red Hat Enterprise Linux OpenStack® Platform, Open vSwitch (OVS), multi-core Intel processors, and Intel Ethernet adapters, the Red Hat and Intel NFV infrastructure provides an innovative, open, and highly available foundation for your network environment.
- **Red Hat Enterprise Linux OpenStack Platform.** Built on Red Hat Enterprise Linux and the Kernel-based Virtual Machine (KVM) hypervisor, Red Hat Enterprise Linux OpenStack Platform provides virtual infrastructure management layer for Qosmos SAM.
- **Qosmos SAM DPI module for vSwitch.** The Qosmos SAM DPI module integrates with KVM and OVS to classify network flows and provide Layer 7 visibility and service awareness at the infrastructure level.

The following are examples of what you can accomplish with a service-aware NFV infrastructure from Red Hat and Qosmos.

¹ Red Hat, "Increase business agility with network functions virtualization," August 2014.

EXECUTIVE BRIEF Improve network efficiency with deep packet inspection



ABOUT RED HAT

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 80 offices spanning the globe, empowering its customers' businesses.

NORTH AMERICA
1 888 REDHAT1

**EUROPE, MIDDLE EAST,
AND AFRICA**
00800 7334 2835
europe@redhat.com

ASIA PACIFIC
+65 6490 4200
apac@redhat.com

LATIN AMERICA
+54 11 4329 7300
info-latam@redhat.com



facebook.com/redhatinc
@redhatnews
linkedin.com/company/red-hat

Copyright © 2014 Red Hat, Inc. Red Hat, Red Hat Enterprise Linux, the Shadowman logo, and JBoss are trademarks of Red Hat, Inc., registered in the U.S. and other countries. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

redhat.com
#INC0186399_V1_0914_KVM

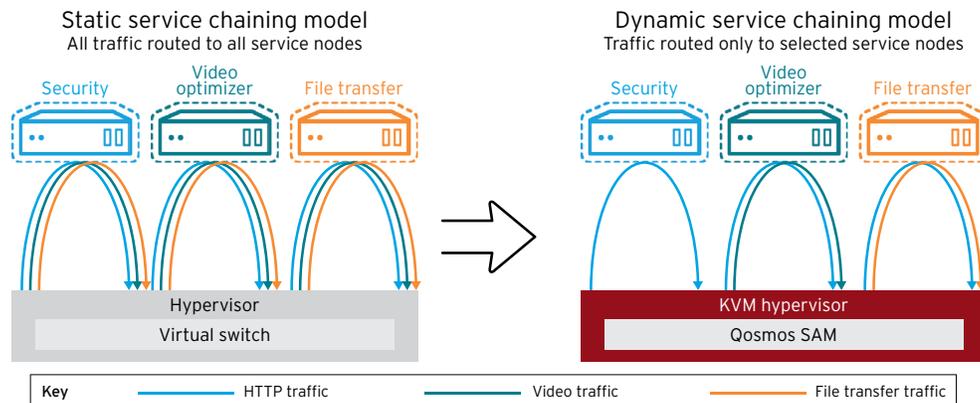


Figure 1. Based on information received from the Qosmos SAM DPI module, KVM routes network traffic only to applicable service nodes, in the appropriate sequence.

REDUCE COSTS WITH STREAMLINED INFRASTRUCTURE

Most IT organizations are facing flat or shrinking budgets. With a service-aware NFV environment from Red Hat and Qosmos, you can streamline your infrastructure and reduce costs. Because network flows are directed only to the relevant service nodes, you can consume significantly less network capacity and maintain a smaller infrastructure. This results in reduced capital expenses from new network capacity and service node acquisition and lower operational costs from infrastructure power and cooling.

INCREASE REVENUE WITH PREMIUM SERVICES

A service-aware NFV infrastructure from Red Hat and Qosmos lets you develop differentiated, layered services. Because network traffic can be segregated by user, you can offer—and demand higher prices for—premium services. For example, video traffic could be directed to an optimizer to deliver higher quality for customers who choose a premium video service. Traffic for customers who don't subscribe to the premium service could be delivered at the basic quality. The result is differentiated service offerings, lower costs, and higher revenues.

ACCELERATE TIME-TO-MARKET FOR SERVICE-AWARE SOLUTIONS

A fast development cycle is critical for independent software vendors (ISVs) and network equipment providers (NEPs) delivering innovative solutions for service providers. Qosmos SAM is delivered in a ready-to-use building block that speeds development of service-aware solutions. Open APIs and partnerships with leading switch vendors ensure compatibility from the start so you can launch new solutions faster.

SUMMARY

Efficient network operations are essential for communications providers to remain competitive in a crowded market. Adding Qosmos SAM to your Red Hat and Intel NFV infrastructure gives you a service-aware NFV environment that streamlines network routing, reduces costs, and allows you to offer layered services that generate more revenue. Contact your Red Hat sales representative to learn more about building a service-aware NFV infrastructure.

The OpenStack® Word Mark and OpenStack Logo are either registered trademarks / service marks or trademarks / service marks of the OpenStack Foundation, in the United States and other countries, and are used with the OpenStack Foundation's permission. We are not affiliated with, endorsed or sponsored by the OpenStack Foundation or the OpenStack community.