Company:

European Telecom

Industry: Multinational telecom servicing Europe and Africa

Key Issues:

Move virtual functions to production faster to speed deployments and lower operating expense (OPEX); ensure subscriber quality of experience across new virtual deployments

- Virtualize 300% more of its mobility network in 2016
- Reshape operational and developmental team collaborations
- Monitor subscriber quality of experience from physical and virtual data

Solutions:

- Ixia® IxNetwork™
- Ixia IxLoad®
- Ixia BreakingPoint®
- Ixia GTP Session Controller

Results:

- 25% faster release of new functions
- 20% better efficiency moving subscriber data on physical links to virtual probes
- Quadrupling virtualization deployments thanks to faster Continuous Integration/ Continuous Deployment (CI-CD)

TELECOM VIRTUALIZES FASTER WITH CONFIDENCE

EFFICIENCY GAINS ACROSS TEAMS, TESTS, AND MONITORING

This multinational telecom offers mobile, landline, and internet services to millions of homes and businesses in countries throughout Europe and Africa. It needed a way to deploy new services faster and at lower cost, so it launched a multi-year network functions virtualization (NFV) and software-defined network (SDN) migration for its mobility network. Virtualizing functions offers faster deployment times and greatly reduces operating expenditures (OPEX), but without good test structures, there was no way the company could tell if new deployments were working properly. In 2015, it introduced a fast-turn DevOps model, setting up multiple "field labs" in place of a traditional single development team in an effort to streamline the release of new services and functions.

The company's goal to quadruple the size of its virtual deployments in 2016 meant risking moving away from physical network investments and moving toward virtual deployment investment. "We are only 5% virtualized today," a senior director of information technology (IT) said. "Our goal is 20% by the end of 2016." To help support the increased pace, the company is changing how it develops, tests, and monitors across its teams, ultimately reshaping its entire operational and developmental collaborations.

UNIFIED TESTING FROM LAB TO PRODUCTION

The company's ambitious virtualization goals made it necessary to adopt a continuous integration continuous deployment (CI/CD) approach. CI/CD operationalizes tight integration between the company's development and deployment teams and standardizes testing tools across development labs, management labs, and production environments. "Ixia's testing tools have been integral to coordination between different teams," one network engineer told us. "We can standardize functional, application, and security tests across different teams in different locations and quickly reproduce network traffic conditions anywhere."

The company's network monitoring team uses the Ixia® IxLoad® VE test tool in its lab to evaluate the performance and reliability of different virtual tapping and mirroring strategies. "We capture real traffic from our production network and run it through an IxLoad VM in our monitoring and management lab," explained a network engineer. "IxLoad then amplifies it to reproduce scale and mixes it with other types of simulated mobile subscriber traffic—the same simulated traffic used by the development team in their lab." By using a unified set of test tools, the company reports that it resolves issues quicker and releases new functions 25% faster than last year.

On its journey to full virtualization, the company will use a mixture of physical and virtual functions. "We realize a hybrid environment is reality for many years as we transition," a vice president told us. One of the company's biggest obstacles is monitoring customer quality of experience (QoE) across physical and virtual networks. "This has really stretched our monitoring and management teams to hit this year's goal of 20%."

NEXT UP: MONITORING THE CUSTOMER EXPERIENCE

The company recently completed a 12-month evaluation of virtual probes to monitor customer experience (CEM). "This was the first step in our virtual monitoring evolution," a director of network management said. "The next step is finding the best way to get both physical and virtual data to our CEM."

The company looked to Ixia's GTP Session Controller to correlate and load balance the delivery of mobile subscriber data originating
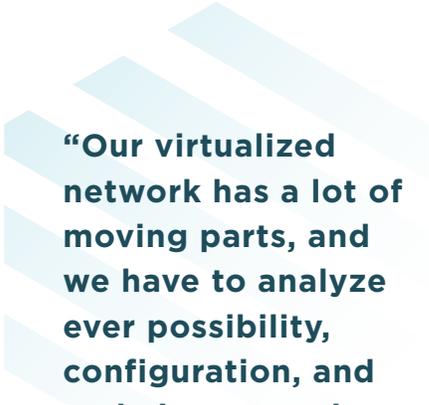
> **"Ixia's testing tools have been integral to coordination between different teams."**
> — Network Engineer

> **By using a unified set of test tools, the company reports that it resolves issues quicker and releases new functions 25% faster than last year.**

on its physical network. The GTP Session Controller combines General Packet Radio Service (GPRS) Tunneling Protocol (GTP) traffic related to one subscriber session and delivers it to a single virtual probe. "We use the GRE origination feature on the GTP session controller to encapsulate packets and distribute them to our virtual CEM," a network engineer explained. "We found that this is the most efficient use of host network links as the data travels to our virtual CEM cluster." In monitoring lab tests, the company observed 20% better network and tool efficiency.

The monitoring team is also evaluating a virtual version of Ixia's GTP Session Controller for virtual machine (VM) to VM traffic. The virtual version replicates physical compute in software. "Our virtualized network has a lot of moving parts, and we have to analyze every possibility, configuration, and technique to gain even the smallest compute resource savings," a senior director of network monitoring said. "Ixia's product engineering teams are working closely with us on our proof-of-concept to minimize resource usage."

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> — Senior Director of Network Monitoring

ABOUT IXIA

Ixia provides testing, visibility, and security solutions, strengthening physical and virtual network elements for enterprises, governments, service providers, and network equipment manufacturers.

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