EXFO Inc. on AWS

5G adaptive service assurance

Challenges

Achieving QoE visibility in dynamic network environments

With the move to 5G and ultra low latency, service providers face three immediate challenges: 1) networks are becoming orders of magnitude more complex, 2) as they virtualize and go cloud-native there is a loss of visibility, and 3) users have increasingly higher expectations of quality of experience. Network complexity is driven by phenomena such as 5G standalone's cloud-native network functions, services-based architectures (SBA), multi-access edge computing (MEC), network slicing and private networks, etc. As a result, more parts of the telecom stack are generating more performance, fault and telemetry data, leaving most service providers simply overwhelmed, unable to respond to and resolve service degradations promptly.

The EXFO Solution

Multi-domain 5G telecom service assurance

EXFO's 5G adaptive service assurance (ASA) platform provides full visibility and diagnostics into complex transport networks, extensive MEC footprints, and the new services/user experience they support. EXFO achieves this by combining an extensive QoE/QoS KPI test suite with 3rd-party data collection and AI-enabled telecom analytics to generate actionable insights. Leveraging several core AWS services, the EXFO adaptive service assurance platform cuts across horizontal and vertical domains to deliver visibility from core to edge as well as performance segmentation across network elements. It enables service assurance for multi-domain solutions such as 5G infrastructure, MEC, OTT video monitoring, private networks and QoS- and QoE-optimized transport, among others. Cloud-native, the EXFO ASA platform easily scales to meet the needs of Tier-1 service providers with national networks; it also supports the deployment of private networks and network slicing, providing the analytics required to offer SLAs with confidence.

Benefits

End-to-end and segmented visibility across telecom network domains, layers, services and devices

Cost-effective
Adaptive data sampling reduces the volume of data that needs to be captured and transported over the network.

Actionable insight/integrated QoE/QoS
Incidents of performance impairments are correlated across network domains, layers and services, and prioritized for resolution.

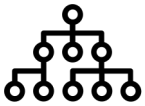
Configuration not code
Network engineers can deploy along the service path and across the compute stack at-scale with Kubernetes-based orchestration.

Enhanced subscriber experience
Real-time anomaly detection and synthetic testing across network layers and services provide a true picture of subscriber QoE.

EXFO Inc. on AWS

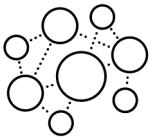
EXFO service assurance solutions accompany service providers as they virtualize their network function stacks and move their 5G core systems to the cloud, where they leverage the breadth and the maturity of AWS infrastructure. In conjunction with AWS capabilities such as EKS orchestration, S3 storage, and Cloudwatch monitoring, EXFO Inc. enables service providers to migrate 5G networks to the cloud with confidence.

Features



Full orchestration along the service path and within virtual workloads

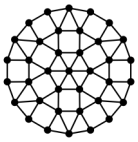
The EXFO platform is designed to work with orchestration platforms, enabling the deployment of probes and active test agents all along the service path. Virtual workloads are instrumented and associated with QoE. Real-time analytics can be fed to the network orchestrator, EKS, to drive the instantiation of probes and active test agents, enabling service assurance requirements to adapt as network conditions ebb and flow.



Adaptive data collection and streaming analytics

EXFO adaptive service assurance combines source-agnostic data collection, ingestion and transformation, to deliver multi-domain, multi-layer analytics powered by telecom-specific algorithms. Performance data can be stored on MEC instances, leveraging Amazon S3 storage, while light weight analytics are streamed over Apache Kafka. Furthermore, EXFO's analytics enrich 5G NWDAF use cases, specifically around network performance and service experience.

Case Study: Tier-1 national service provider (MEC application)



Challenges

Networks have huge impact on real-time service QoE for gaming, streaming video, and remote work due to latency, jitter and packet loss. Even brief degradations are visible to the customer, reducing the NPS and the perception of network quality.

Solution

Active performance monitoring provides E2E and segmented metrics for both network (QoS) and service (QoE). Real-time detection—and even prediction—of performance impairments that impact the customer experience.

Results

Reduction of thousands of anomalies into prioritized, actionable, correlated case groups. Automatic identification of root causes. Cut time required to detect and analyze transport-related incidents by 80%.

Get started with EXFO Inc. solutions on AWS

Visit www.exfo.com to learn more and to start a conversation about your 5G real-time service assurance needs.