



Sandvine's network intelligence and service innovation capabilities can be leveraged in 5G core and edge environments, delivering critical contextual and slice awareness to feed new service creation and strengthening an operator's position in the 5G value chain for consumer and enterprise markets.

## PERFORMANCE ANALYSIS DELIVERS:

### Breadth and Depth

Network insights are aggregated from network-wide key performance indicators to granular location, subscriber, plan/tier, device-specific measurements

### Centralized View

Distributed metrics collection/measurement from various locations with centralized viewing/reporting

### Granular Measurements

Key network metrics are measured with high resolution – 250 milliseconds for throughput, five seconds for latency and packet loss – suitable for capturing true network usage and quality, and analyzing key applications such as video

### Contextual View of Delivered QoE

Regardless of access technology, converged network and application performance is correlated based on QoE-relevant metrics

# Performance Analysis

## Understand your network's ability to deliver services to subscribers

### MARKET OVERVIEW

With OTT 2.0 comes a higher set of expectations from users on the performance of high-bandwidth applications, such as video and gaming. As the competitive landscape continues to escalate, it is vital that operators prioritize and understand their network's performance based on user-centric quality metrics.

There is an increased awareness among consumers of the expected Quality of Experience (QoE) for their applications. Specifically, they want to know who has the best network and who delivers the best application experience that define their unique experience. When their operator is not meeting their expectations, there is a greater risk of churn as they will likely leave for a competitor.

A significant challenge for operators is being able to accurately measure and assess the QoE delivered by their network. Historically, QoE has been assessed and determined using various speed tests, but these metrics are incomplete and do not provide true insight into how operators can improve the network. While some operators struggle to assess their own network's performance, key industry players are already influencing public opinion of operators. OTT video providers, like YouTube and Netflix, have already begun to rate operators with their own speed and performance indexes – and consumers have taken to using these indexes, as well as speed tests, to make snap judgements.

To overcome these challenges, operators need a proactive solution that provides end-to-end network visibility, application awareness, and user QoE awareness.

### SOLUTION OVERVIEW

Sandvine's Performance Analysis use case helps operators understand network performance for crucial services and applications used on the network, and network elements.

### Using Sandvine's unique QoE scoring metrics, operators can:

- Identify worst performing network nodes, overutilized nodes, and isolate persistent, chronic problematic sites
- Determine opportunities for network optimization by pinpointing specific network areas for improvement
- Generate baseline scores for comparison when changing or upgrading the network
- Compare post-upgrade and pre-upgrade network performance based on location, node, application/service, etc. following maintenance work to improve operational efficiency



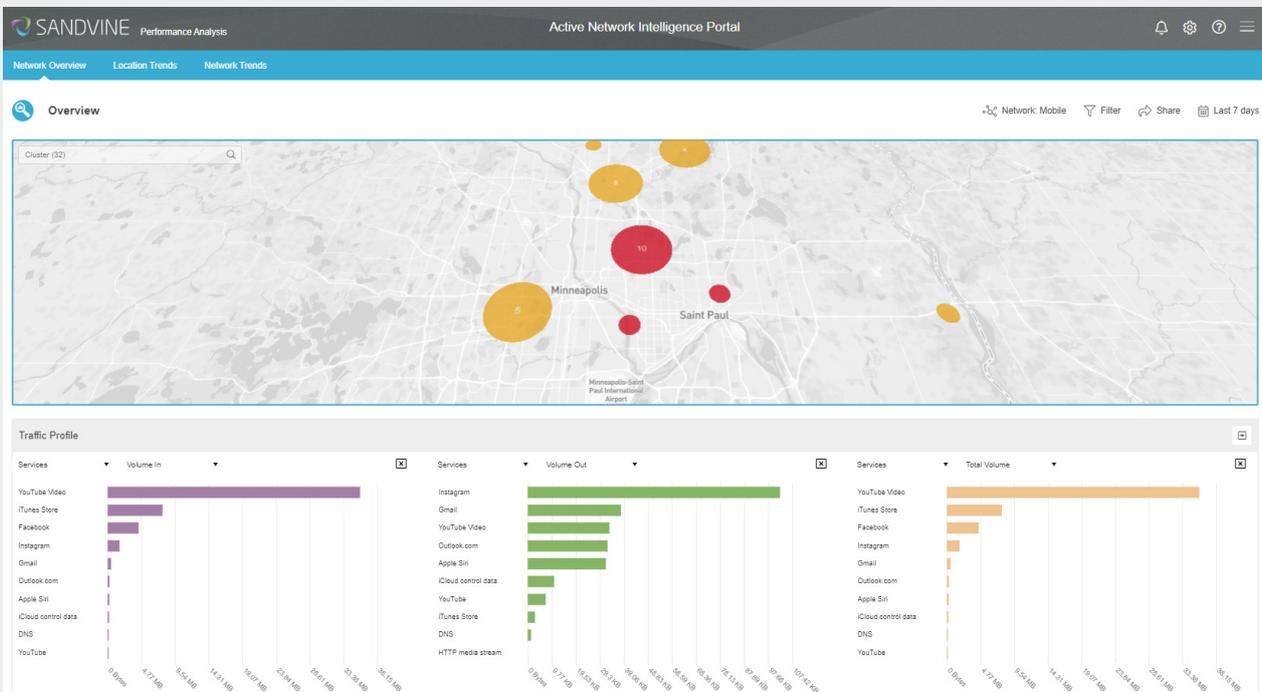
- Predict churn by analyzing speed test data from the network for a specific location
- Provide traffic/throughput projection reports for short-term and long-term network planning
- Monitor customer analytics to better manage customer loyalty campaigns, reduce churn, and develop targeted promotions
- Improve ROI by prioritizing capacity and quality upgrades

## Network Overview

This visualization captures throughput, latency, and packet loss measurements – key network metrics that impact user experience. It also shows metrics for network locations with the 10 lowest performance scores and the most commonly used services.

Figure 1

At a glance, understand the services and the QoE being delivered across the network



## Network Health

This view shows all network assets and allows the operator to quickly pinpoint, with outlier analysis, which locations are performing abnormally. It provides QoE location context by understanding the services being used and even the speed tests that are being run. By measuring throughput, latency, and packet loss based on specific locations, operators can start investigating performance impacting issues.



Figure 2

Through outlier analysis, see the least performing parts of the network and the subsequent impact on QoE

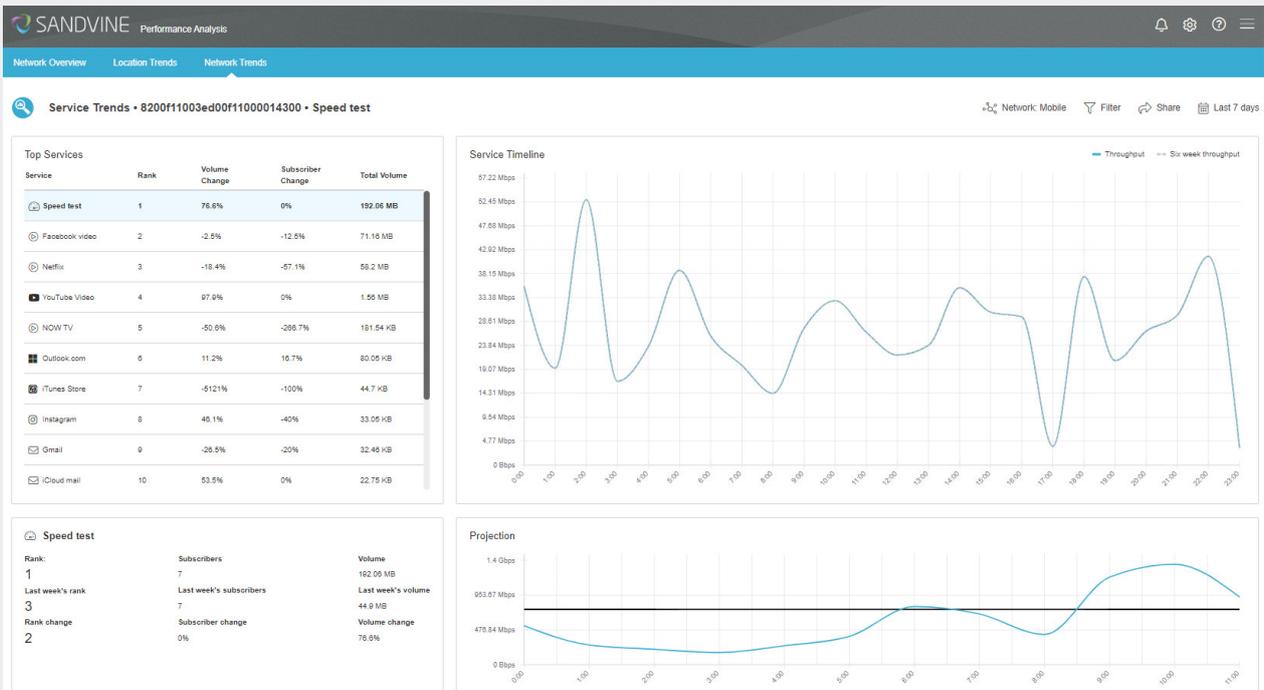


### Network Trends

This week-over-week comparison of volumetric and user behavior allows operators to fully understand the services that are driving demand. It gives a better view of the network elements impacted by increased usage and shows future projections of network performance by service.

Figure 3

Identify trends driving growth and proactively monitors the QoE of key applications





Sandvine's Performance Analysis equips network operators with the right information to make data-driven investment decisions to get the most out of their network and improve QoE, rather than just to increase capacity.

## ABOUT SANDVINE

Sandvine's market-leading, cloudified Service Innovation and Intelligence portfolio helps customers deliver exceptional digital experiences and grow revenues. Our ability to classify over 95% of network traffic across mobile and fixed networks by user, application, device, location and other parameters creates uniquely rich, real-time network and service data. We then apply machine learning-based contextual insights to improve performance and enhance digital services. For more information, visit <http://www.sandvine.com> or follow Sandvine on Twitter @Sandvine.



**USA**  
5800 Granite Parkway  
Suite 170  
Plano, TX 75024  
USA

**EUROPE**  
Svärdfiskgatan 4  
432 40 Varberg,  
Halland  
Sweden  
T. +46 340.48 38 00

**CANADA**  
408 Albert Street,  
Waterloo,  
Ontario N2L 3V3,  
Canada  
T. +1 519.880.2600

**ASIA**  
RMZ Ecoworld,  
Building-1, Ground Floor,  
East Wing Devarabeesanahalli,  
Bellandur, Outer Ring Road,  
Bangalore 560103, India  
T. +91 80677.43333

**Copyright ©2021 Sandvine Corporation.** All rights reserved. Any unauthorized reproduction prohibited. All other trademarks are the property of their respective owners.

This documentation, including all documentation incorporated by reference herein such as documentation provided or made available on the Sandvine website, are provided or made accessible "AS IS" and "AS AVAILABLE" and without condition, endorsement, guarantee, representation, or warranty of any kind by Sandvine Corporation and its affiliated companies ("Sandvine"), and Sandvine assumes no responsibility for any typographical, technical, or other inaccuracies, errors, or omissions in this documentation. In order to protect Sandvine proprietary and confidential information and/or trade secrets, this documentation may describe some aspects of Sandvine technology in generalized terms. Sandvine reserves the right to periodically change information that is contained in this documentation; however, Sandvine makes no commitment to provide any such changes, updates, enhancements, or other additions to this documentation to you in a timely manner or at all.