



ScoreCard

Executive-Level View for Application QoE

KEY BENEFITS

- Simplified application QoE performance overview for easy understanding across a wide range of teams and stakeholders
- Based on Sandvine's Scoring technology, which measures throughput, packet loss, and latency for key application categories that are deemed important by customers
- Deployed by default as part of the ANI Portal and available for all access types
- Enriched with contextual awareness to provide a holistic, network-wide analysis
- Designed to be a first indicator of issues, narrowing down areas of concern and potential causes

The level of network and application complexity continues to increase with no signs of slowing down. At the same time, the volume of network data has proved cumbersome when trying to determine the experience delivered for key applications.

Those key applications driving consumer perception require more than just throughput from the network to deliver a good experience. For example, voice and gaming applications are very latency-sensitive, whereas web browsing and social networking are sensitive to packet loss. When the network consistently delivers a poor experience for high-value applications, the likelihood of churn dramatically increases.

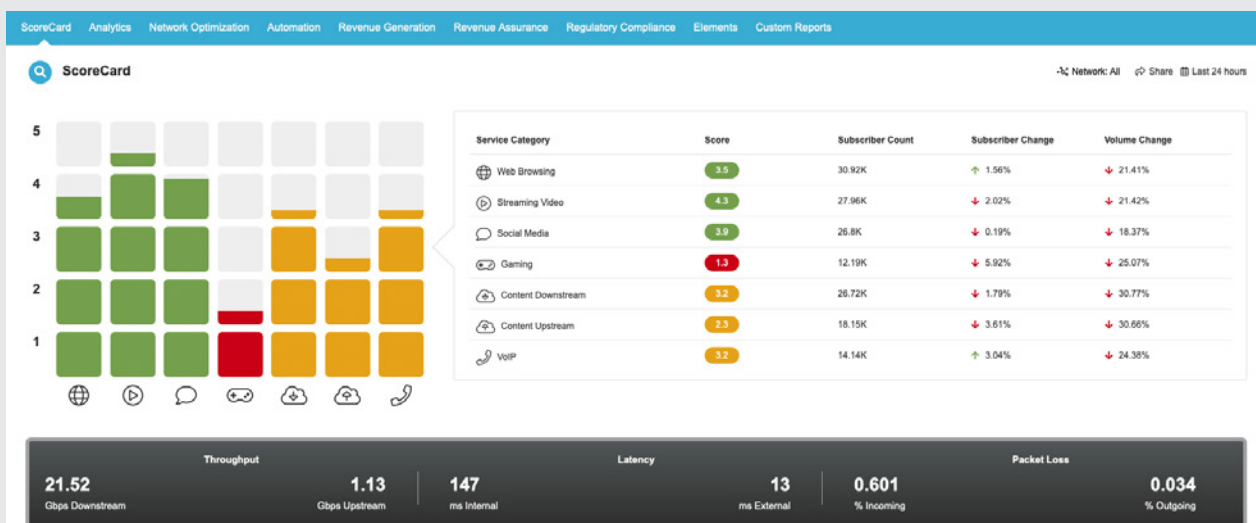
To meet consumer expectations without breaking the bank, operators need to measure the delivered QoE with the right context – location, device, service plan, and applications – to optimize investments. To do this, they need access to timely and relevant data that is easy to understand and can be communicated among executive levels as well as engineering and operation teams.

SCORECARD

Sandvine's ScoreCard offers an executive-level view of application-driven network performance. This powerful snapshot is an important first step in understanding application QoE and network performance and, as such, takes center stage within the ANI Portal (Figure 1).

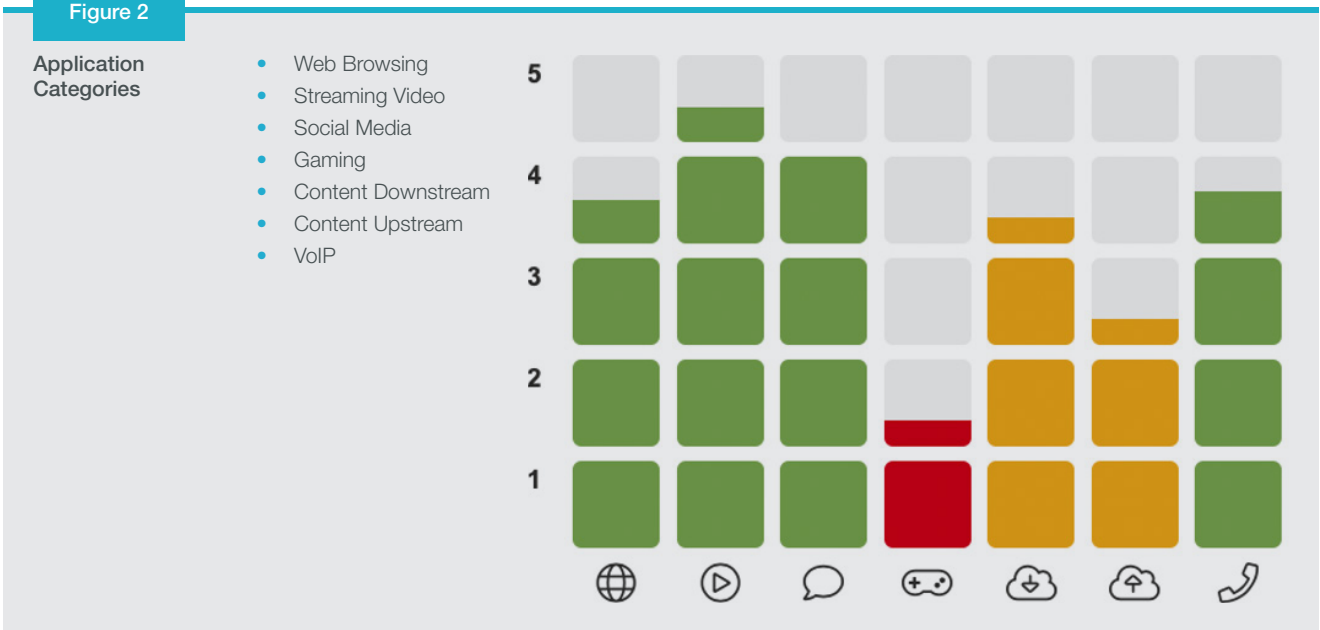
Figure 1

Sandvine's ScoreCard as part of the ANI Portal



This easily digestible, tile-based grading system summarizes the key metrics that measure application and network QoE. It clearly indicates where problems in the network exist for the major application categories, which end users prioritize when evaluating their experience of providers.

Figure 2



ScoreCard leverages Sandvine’s Scoring technology to measure each subscriber’s throughput, latency, and packet loss at sub-second intervals to gauge the network’s ability to deliver a high-quality experience. Sandvine measures these KPIs and uniquely interprets how they directly correlate to user perceived QoE versus just reporting individual metrics. Additionally, ScoreCard is enriched with contextual awareness, such as volume, network topology, location, device, and service plan information to ensure the intelligence is actionable without complex post-processing.

For each application category, a score of 0-5 is assigned to indicate how well it is performing (Table 1).

Table 1

Application Category Scoring

Score	Experience Delivered
5	Excellent experience
4	Good experience, but with slight impairments
3	Fair experience, but with noticeable impairments
2	Poor experience, with frustrating impairments
< 1	Bad experience

These scores are then visually represented as colored tiles (Figure 2). Each color corresponds to a range of scores to simplify how application and network performance, and therefore subsequent action, should be perceived (Table 2).

Table 2

ScoreCard Tiles

Score	Color	Characteristics	Response
Score >= 3.5	Green	Good	No Action
1.5 <= Score < 3.5	Amber	Fair	Awareness
Score < 1.5	Red	Poor	Immediate Action

As stated, ScoreCard incorporates contextual awareness and allows filtering based on location, plan, and devices (**Figure 3**). It provides a precursor for identifying the issues, allowing for targeted investigation versus a broad view without necessary context.

Figure 3

ScoreCard Location Filtering

Plans
 Devices
 Locations
 Show top:

Locations	Score [↑]	Subscriber Count [↑]	Throughput Down [↑]	Throughput Up [↑]	Latency Int [↑]	Latency Ext [↑]	Packet Loss In [↑]	Packet Loss Out [↑]
Kirkby Shopping Centre	3.7	326	14.6 Mbps	1.11 Mbps	190 ms	14 ms	0.993%	0.159%
Dependent Site For 93517	3.8	293	17.32 Mbps	508.43 kbps	198 ms	11 ms	0.820%	0.029%
Edge Lane Streetworks 208331	3.7	223	10.11 Mbps	800.76 kbps	177 ms	19 ms	0.538%	0.025%
Leigh Rugby Union Fc	3.7	184	6.9 Mbps	294.34 kbps	207 ms	17 ms	0.605%	0.100%
Orange School House Farm	3.8	178	7.74 Mbps	556.49 kbps	211 ms	11 ms	1.122%	0.022%
Wigan Rulc	3.8	175	19.56 Mbps	413.24 kbps	165 ms	15 ms	0.441%	0.013%
Dependent Site For 56254	3.9	148	4.81 Mbps	596.13 kbps	211 ms	16 ms	0.570%	0.029%
Northern Diver	3.7	121	7.01 Mbps	239.6 kbps	172 ms	20 ms	1.118%	0.153%
Keepsafe (Alligator Storage)	3.6	106	5.63 Mbps	179.92 kbps	262 ms	17 ms	0.504%	0.012%
Dependent Site For 51641	3.9	102	5.52 Mbps	441.48 kbps	213 ms	14 ms	0.623%	0.266%

ScoreCard is a unique and effective tool for evaluating and measuring the delivered QoE across major application categories. It quickly arms executives and key leaders with actionable insights to ensure good QoE is delivered to users for applications they care about. ScoreCard is foundational to the ANI Portal and is most effective when other use case are deployed, which allow further investigation, such as Performance Monitoring and Analysis and Video QoE Analysis.

ABOUT SANDVINE

Sandvine's cloud-based Application and Network Intelligence portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues. 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
410 Albert Street,
Suite 201, 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

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