



Video Streaming Management

Manage video bandwidth resolutions and deliver high-quality experiences

VIDEO STREAMING MANAGEMENT DELIVERS:

Improved Quality of Experience

Managing video resolution during busy hours to deliver a better overall experience across a broader set of customers.

Heavy User Management

Limiting heavy user video resolution during busy hours when usage thresholds have been crossed during a given day or month.

Resolution Matching by Device

Optimizing bandwidth utilization by identifying devices and delivering video bitrates that match, but do not surpass, the resolutions suitable for those specific devices.

Resolution Caps on Unlimited Plans

Providing resolution caps for unlimited plans that deliver up to standard video resolution only (480p) or by capping resolution when customers surpass specific daily or monthly thresholds.

Premium Video Plans

Offering premium video packages with higher resolution SLAs.

Customer Self-service

Video Resolution Enforcement

Supporting self-service applications by recognizing and enforcing specific video resolution levels, which are generally chosen and limited by customers to minimize their data charges on shared family plans.

MARKET OVERVIEW

Operators are well aware of the network challenges of video streaming traffic. With over-the-top (OTT) video traffic generating close to 60% of all internet traffic, operators are already devoting a considerable amount of resources and investment to support video, and video demand is only growing.

For mobile operators, managing video is one of the toughest challenges they face. Mobile technology is more bandwidth constrained and, on a per gigabit (Gb) basis, a more expensive medium for high bandwidth service delivery. Like other network operators, mobile operators are largely regulated, so plans that prioritize/deprioritize different types of traffic are not always easily deployed.

These mobile video traffic constraints have forced operators to make bold moves, some of which are fundamentally altering their network strategies and business models.

- The migration to LTE has helped, but is not a long-term solution to deal with the network spikes or the high cost of video service delivery
- Mobile video usage adds up quickly, and often inadvertently, forces operators to search for new approaches and service plans to alleviate unexpected overages that can cause customer churn
- Some operators offer unlimited service plans which often create even higher expectations for performance than with more traditional metered service plans
- The move to 5G is at least partially driven by the current limitations of 4G RAN access

Another factor impacting video service delivery is the wide variety of bitrates. For example, a 320p video plays smoothly at 850 Kbps, a 1080p, high resolution video needs 7.5 Mbps, and a 4K video requires approximately 15 Mbps to deliver a crisp and vivid experience. Considering the wide variances in resources associated with each step up in video quality, network operators need tools to manage bitrates for the many types of service plans they offer and to ensure that an acceptable video quality is provided to more customers even during peak hours.

SOLUTION OVERVIEW

Sandvine's Video Streaming Management solution provides a proven and widely deployed method for enabling operators to manage (or limit) the video bitrates that can be streamed within a given plan. This strategy was first deployed by T-Mobile in the US, which gained substantial market share by providing an unlimited plan that delivered standard definition video only.

T-Mobile defined the model and set customer expectations regarding standard video resolution; customers liked the unlimited aspect of the offering, and they were more than happy to view large quantities of video in standard definition (480p, which is DVD quality video). This resolution management approach has been broadly implemented by operators



“Video is the dominant type of traffic on mobile networks, with YouTube alone comprising 37% of worldwide mobile traffic”

Sandvine, The Mobile Internet Phenomenon Report, February 2019

worldwide, particularly in mobile scenarios where customers with small handheld screens are much more willing to view lower resolution video.

Sandvine's Video Streaming Management solution offers:

- A technology agnostic solution suitable for both fixed and mobile technologies
- Comprehensive video meta-data, quality of experience (QoE) metrics, and video application/traffic scoring
- Video application dashboards
- ScoreCard, which measures throughput, latency, and packet loss and calculates scores for video (as well as other critical services)
- A powerful traffic identification engine – backed by the most granular and comprehensive signature database with extensive support for video streaming and encrypted applications
- Advanced shaping capabilities delivering a 30% bandwidth advantage over rate-limiting
- User, location, device, plan, group/tier, charging, and QoE contexts provide more precise policy control for better traffic management and support for a greater range of service plans

Sandvine enforces intelligent rate limits on a per-stream basis, ensuring fairness and reducing the average bitrate-per-stream without compromising quality. In addition, our intelligent video management can protect other services from disruptive video traffic spikes and extend the useful life of network infrastructure, deferring investment and positively impacting ROI.

Figure 1

The video stream on the left plays smoothly and clearly with a 75% reduction in bandwidth compared to the stream on the right.



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ABOUT SANDVINE

Sandvine helps organizations run world-class networks with Active Network Intelligence, leveraging machine learning analytics and closed-loop automation to identify and adapt to network behavior in real-time. With Sandvine, organizations have the power of a highly automated platform from a single vendor that delivers a deep understanding of their network data to drive faster, better decisions. For more information, visit sandvine.com or follow Sandvine on Twitter at [@Sandvine](https://twitter.com/Sandvine).



USA
2055 Junction Avenue
Suite Number 105
San Jose,
CA, 95131
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