



Video Streaming Management

Manage video bandwidth resolutions and deliver high-quality experiences



VIDEO STREAMING MANAGEMENT DELIVERS:

Improved Quality of Experience (QoE)

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

Service providers are well aware of the network challenges of video streaming traffic. With OTT video traffic generating close to 60% of all internet traffic, service providers are already devoting a considerable amount of resources and investment to support video, and video demand is only growing.

For mobile service providers, 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 service providers, mobile service providers are largely regulated, so plans that prioritize/deprioritize different types of traffic are not always easily deployed.

These mobile video traffic constraints have forced service providers 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 service providers to search for new approaches and service plans to alleviate unexpected overages that can cause customer churn.
- Some service providers offer unlimited service plans that 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, service providers 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.

USE CASE OVERVIEW

Sandvine's Video Streaming Management use case provides a proven and widely deployed method for enabling service providers 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 service

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

Sandvine, The Mobile Internet Phenomena Report, February 2019

providers 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 use case offers:

- A technology agnostic use case suitable for both fixed and mobile technologies
- Comprehensive video meta-data, QoE metrics, and video application/traffic scoring
- Video application dashboards
- ScoreCard, which measures throughput, latency, 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 return on investment.

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.



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.



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