Alpha Networks Streamlines OTT and IPTV Video Delivery with End-to-End Harmonic Solution

Solution at a Glance:

Challenge: *Telecom operator Alpha Networks required an end-to-end video processing and storage solution to power its OTT and IPTV video services. The solution needed to support a wide range of video formats, deliver high-quality video, and efficiently scale to match the company's growing storage needs for encoding and streaming to an increasing number of subscribers, while simultaneously lowering capital and operational expenses.*

Solution: *Alpha Networks has deployed a fully integrated and unified headend based on Harmonic video processing, server, and storage platforms.*

Benefits:
- *Single, integrated architecture speeds up deployment of value-added services*
- *Flexibility and high density reduce operational expenses*
- *Scalable solutions grow to meet the operator's evolving needs*
- *Efficient storage capacity and bandwidth allocation increase subscriber satisfaction while lowering costs*
- *Support of all prevalent adaptive streaming protocols assures anytime, anywhere video services*
- *Best-of-breed technologies ensure readiness to meet constantly evolving market needs*
- *Control by a single network management system streamlines operations*

THE CHALLENGE

Belgian telecom operator Alpha Networks hosts a wide range of services from its headend, including OTT, IPTV, and DSL. Since launching its turnkey solution in 2009, the company has experienced rapid growth.

Given the increasing customer demand for IPTV and OTT video content, Alpha Networks is storing and delivering a large volume of streaming media assets, creating the need for a more robust and flexible headend solution. The new headend needed to support high-quality HD video services on any viewing device, including connected TVs, PCs, tablets and smartphones, while simultaneously reducing capital and operating expenses. Another important requirement was a media server and storage solution that could easily scale to handle Alpha Networks' growing media asset library. Alpha Networks also wanted to streamline its operations by deploying a solution that would support broadcast, Web, and mobile services under a single architecture.

After conducting a rigorous evaluation process with several of the industry's leading video processing, server, and storage providers, Alpha Networks chose to install an integrated and unified framework powered by Harmonic solutions.

THE SOLUTION AND WORKFLOW

To address a wide and growing variety of connected devices, Alpha Networks deployed a unified VOD infrastructure that uses adaptive streaming VOD technology to deliver content to TVs as well as all connected devices such as PCs, tablets, and mobile phones.

The Alpha Networks model works on both a managed network (IPTV) and on the public Internet (OTT) utilizing adaptive streaming technology for live and VOD services. The architecture is very scalable from a business perspective, as it allows Alpha Networks to:

- Deliver high-quality live and VOD service on a private network (IPTV model)
- Connect live and VOD services to any device over the network (TV Everywhere model)
- Enable any OTT content provider to connect with Alpha Networks' devices, including set-top boxes (OTT model)

"Harmonic solutions deliver a rich multimedia experience to subscribers, while lowering our capital and operational expenses."

Guillaume Devezeaux
COO, Alpha Networks

Alpha Networks' headend utilizes a combination of Harmonic's video processing solutions to manage the complexity of IPTV and OTT applications and deliver high-quality SD and HD MPEG-4 AVC (H.264) video in CBR and ABR modes. Harmonic ProView™ 7000 integrated receiver-decoders (IRDs) support the operator's all-IP headend by performing cost-effective decoding, descrambling, and remultiplexing of multiple transport streams. The ProView IRDs offer an unmatched density and flexibility that are critical to lowering Alpha Networks' operational and capital expenditures while supporting the rapid launch of high-quality video services.

For live IPTV encoding, Harmonic ProStream® 1000 with ACE® high-density stream processers transcode up to 60 SD or 20 HD broadcast services per rack unit. By repurposing content from different sources and formats, the ProStream platform enables Alpha Networks to deliver an increasing volume of streaming media content. In addition to providing superior quality video transcoding, the ProStream 1000 with ACE reduces the company's energy consumption and overall costs by using no more than 10 watts per HD channel and 3 watts per SD channel.

Harmonic's ProMedia™ Live carrier-grade transcoding and ProMedia Package adaptive streaming preparation systems transcode and package multiple H.264 video streams for adaptive bitrate delivery of live multiscreen OTT content. Both ProMedia Live and ProMedia Package are completely software-based, offering Alpha Networks a high degree of flexibility and scalability to support the company's evolving video needs. Alpha Networks uses ProMedia Live real-time video processing and transcoding systems to transcode SD/HD MPEG-2 or MPEG-4 AVC content into multiple H.264 streams optimized to deliver the best picture quality for the bandwidth. ProMedia Package combines multiple streams of H.264 video and audio into adaptive bitrate streams, scaling to support hundreds of simultaneous streams so that Alpha Networks can cost-effectively deliver multiscreen OTT services.

VOD content is managed using a combination of Harmonic's ProMedia Carbon file-based enterprise-class transcoding solution, Omneon® MediaGrid™ shared storage system, and ProMedia Origin HTTP streaming video server. The comprehensive system leverages industry-standard protocols, including Apple® HLS and Microsoft® Smooth Streaming, to prepare and publish live, VOD, and NPVR content to multiple viewing devices while supporting a range of CDNs and encryption methodologies, allowing Alpha Networks to deliver content to a wide variety of customer devices while still maintaining streamlined system architecture.

ProMedia Carbon simplifies multiscreen VOD content preparation by supporting a wide array of acquisition, editing, broadcast, Web, and mobile formats. The ProMedia Carbon transcoding farm is managed by Harmonic's WFS, an enterprise-class server solution that performs automatic processing of high-volume transcoding tasks, failover support, job distribution management, job prioritization, load balancing, FTP transfer, status monitoring, and job notification.
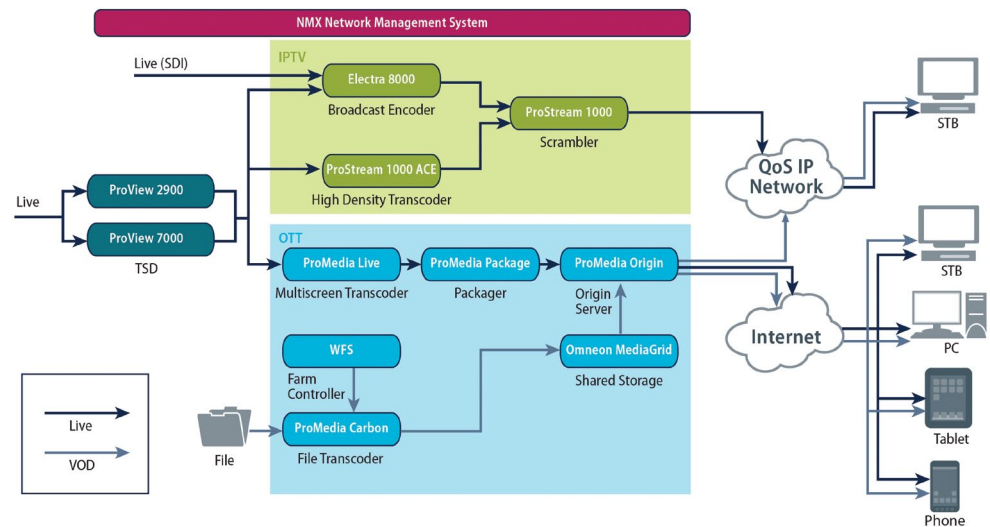
Alpha Networks initially installed one 32TB MediaGrid shared storage platform, and added a second 32TB MediaGrid one year later to support the company's rapid growth. The Ethernet-based storage system is optimized for digital media, with the performance of SAN and the simplicity of NAS. As Alpha Networks' VOD assets grow, the company can use the second MediaGrid system to cost-effectively and seamlessly add capacity and bandwidth as needed.

Alpha Networks' ProMedia Origin HTTP streaming server ingests transcoded, segmented, and encrypted content from ProMedia Live and ProMedia Carbon and is integrated with MediaGrid to provide cost-effective scalability of throughput and storage capacity, simplifying VOD operations.

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