Cloud-Based Multichannel OTT Streaming

CASE STUDY

Leading U.S. Pay-TV Operator Breaks New Ground in the Cloud With Live and On-Demand OTT Offering

The Challenge

Cord-cutters and cord-nevers, people who have never subscribed to a traditional pay-TV service, are a serious issue for the pay-TV industry. In fact, GfK's 2016 Ownership and Trend Report found that 25 percent of U.S. homes don't subscribe to a pay-TV service, and the number of homes cutting the cord from cable and satellite continues to increase at a rapid pace.

One of the largest pay TV operators in the United States sought to capitalize on this trend by offering an all-new OTT subscription service that includes live and on-demand content. The goal was to successfully compete with other MVPDs, OTT content providers like Hulu and Netflix, and mobile operators that offer streaming services, such as T-Mobile.

The operator had an aggressive timeline for its new service launch: it wanted to get the project off the ground within weeks. Video quality was an important consideration, and there needed to be very low latency. Moreover, the operator wanted to be able to offer a skinny bundle OTT service at a much lower price point than a full service in the U.S. Given these parameters, Harmonic and Mirantis partnered to deliver a cloud-native media processing solution on OpenStack that met these requirements, offering quick time to market, high video quality and minimal capital investment.

High-quality streaming service launched in weeks, utilizing Harmonic's VOS™ SW Cluster media processing application running on Mirantis Cloud Platform

SOLUTION AT A GLANCE

CHALLENGE:
A major U.S. pay-TV operator wanted to launch its own live and on-demand OTT service. Video quality, time to market and affordability were key requirements.

SOLUTION:
The operator deployed a complete end-to-end OTT system running VOS SW Cluster from Harmonic on an OpenStack cloud infrastructure from Mirantis. The VOS SW Cluster software application provides flexibility, agility and scalability, and supports the entire video production and streaming workflow for 250+ OTT channels.

APPLICATIONS:
- Media ingest
- Multicast to unicast conversion
- CMS, DRM and client apps
- Dynamic ad insertion and blackouts
- Video encoding, transcoding, encryption and ABR packaging on the fly
- CDN

The Solution

The pay-TV operator chose to deploy a complete end-to-end OTT system on the Mirantis Cloud Platform, which provides a scalable, private cloud based on open source software and commodity servers instead of proprietary hardware. Harmonic's cloud-native VOS™ SW Cluster solution handles the media processing and delivery workflow, allowing the operator to deliver over 250 OTT channels, including high-quality live TV, to its customers on any screen. The OTT service supports delivery to Android and iOS devices, PCs and game consoles.

The VOS SW Cluster software application was selected because it allows fast time to market for new services, provides a flexible infrastructure, and is easy to manage. The solution supports the full range of live streaming, video-on-demand (VOD) and time-shifted services, including catch-up TV, start-over TV and cDVR. Infrastructure configuration, deployment and management are all orchestrated through VOS SW Cluster, which enables the deployment of cloud resources in definitive increments, such as containers or bundles, and automates the execution of routine tasks and the addition of capacity based on scale up/down, in/out policies.

Using the VOS SW Cluster solution, the operator can perform encoding, transcoding, encryption and ABR packaging on the fly, for up to hundreds of live channels. Moreover, the VOS SW Cluster solution integrates seamlessly with customer management systems, client applications, DRMs and other technology partners to support sports blackout and dynamic ad insertion for increased monetization.

With the VOS SW Cluster solution's flexible, usage-based pricing, the operator only pays for services actually used. Keeping CAPEX costs to a minimum made it possible to launch the OTT service rapidly.

The Workflow

The VOS SW Cluster architecture allows rapid and consistent ABR transcoding capabilities for mobile and web delivery. The Harmonic CloudLink application is used to bridge the legacy video network with VOS SW Cluster, enabling the ingest of high-quality live video securely at low latency.

All processing and workflow orchestration is performed by VOS SW Cluster, which links to third-party solutions for content protection and dynamic ad insertion (DAI). Integrated packaging-on-the-fly functionality allows multiple video streams to be selectively combined for all of the most popular HTTP adaptive bitrate protocols, including Apple® HTTP Live Streaming (HLS), Microsoft® Smooth Streaming and MPEG-DASH. The ABR video stream is then sent to either an Akamai or Level3 CDN.

For partner interoperability, the VOS SW Cluster interface employs RESTful APIs, providing the operator with the ability to easily connect to existing operations and add new components at will.
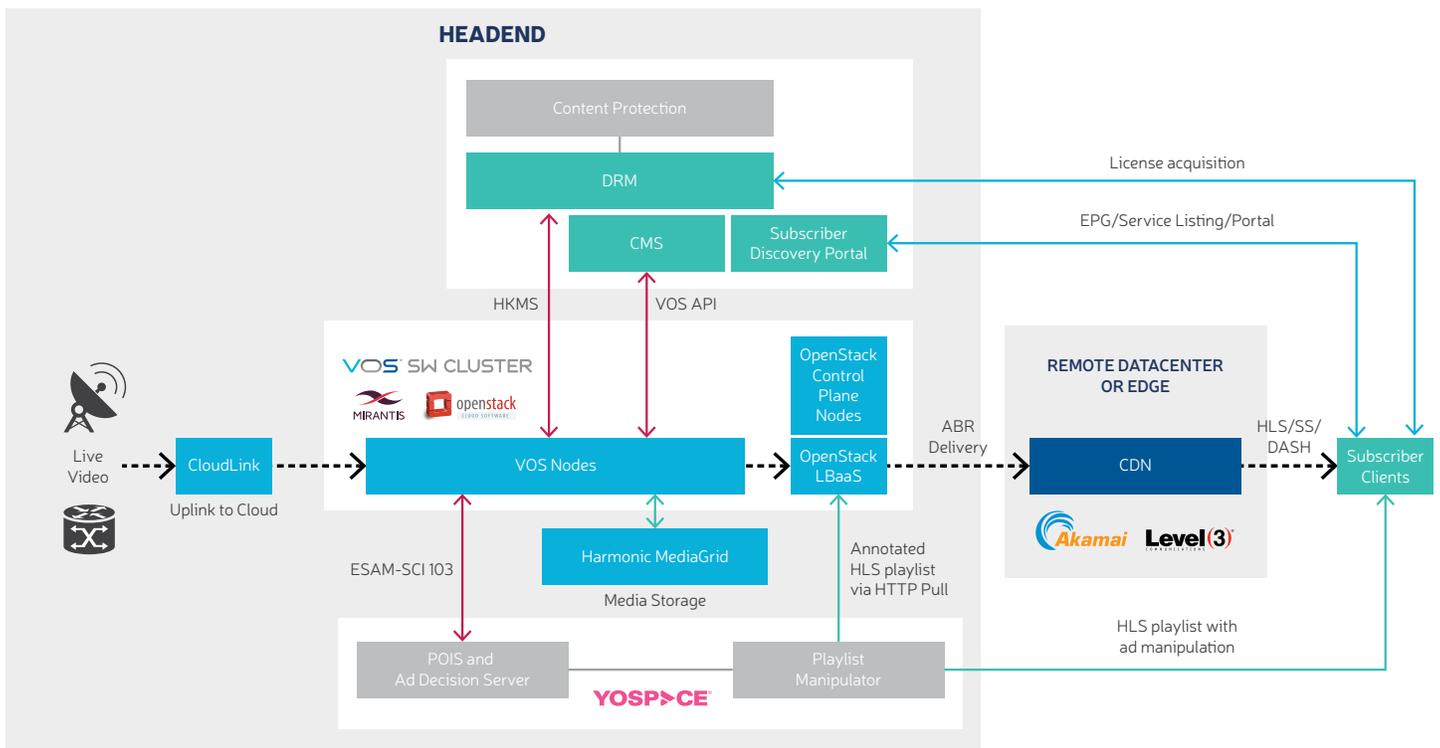

Figure 1. An illustration of the OTT cloud workflow being used

The Result

In just a few months, the pay-TV subscriber attracted many more subscribers than originally anticipated to its new OTT service. Harmonic's expertise in cloud and OTT deployments, combined with its strong partnership with a key ecosystem provider, Mirantis, enabled a rapid service launch measured in weeks instead of months — which is unprecedented.

The VOS SW Cluster solution was the perfect fit for this project's aggressive schedule and requirements, providing the operator with the flexibility to manage all aspects of video processing and delivery on OpenStack cloud infrastructure. With the VOS SW Cluster offering, the operator can easily adapt to changing business requirements and technology advancements, with unlimited scalability. Superior video quality is enabled through VOS SW Cluster's award-winning encoding and transcoding solution, the Harmonic PURE Compression Engine, and advanced features like catch-up TV and start-over TV allow the operator to quickly monetize the new service offering.

With the VOS SW Cluster solution, the operator can also expand to a public cloud infrastructure within a few minutes for disaster recovery and load balancing.

What's more, the new service provides something that many OTT offerings don't: superior-quality live TV on every screen. Harmonic is proud to be part of one of the largest OpenStack cloud environments delivering live video anywhere. Through its cloud-native solutions, Harmonic is transforming traditional video preparation and delivery architectures and accelerating time to market for OTT services, deployed by the world's largest pay-TV players.