The Case for Leveraging the Cloud for Video Service Assurance

Monitor Streaming Video Services, From Anywhere, At Any Time
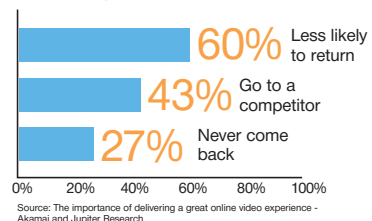
Content and Service Providers using a third-party CDN would benefit greatly from a cloud-based solution to assure video quality

Introduction

In today's dynamic video landscape, it is more important than ever for content and service providers to understand the performance of their streaming video services. Consumers expect to receive the same high-quality video experience on all connected devices as they would at home on a TV. In fact, industry research shows that multiscreen and OTT subscribers are more sensitive than ever about the quality of their video services. For providers with a global subscriber base, this presents unique technology and business challenges. When delivering content to various geographic locations, the video experience can vary greatly depending on the delivery path to the subscriber. Control and visibility into global performance are obscured when providers leverage third-party Content Delivery Networks (CDN) to distribute video content. What's worse, many times video quality problems are only discovered once consumers have a bad experience and then angrily take to social media.

Given subscriber sensitivity to video quality impairments and the lack of visibility within and after a third-party CDN, any provider using a third-party CDN requires a flexible, cloud-based solution to assure content availability and understand service performance after the CDN.

Results of Poor Online Viewing Experiences

60% Less likely to return

43% Go to a competitor

27% Never come back

0%   20%   40%   60%   80%   100%

Source: The importance of delivering a great online video experience - Akamai and Jupiter Research

Unique challenges using a third-party CDN for streaming video delivery

Content and service providers must distribute their streaming video services through a CDN. A CDN is a network of servers that distributes and caches video content so subscribers can either download or stream the content upon request. In a CDN, the origin server is the central repository for video content. Between the origin server and the subscribers is a network of cache servers, which distribute content across the network and help lower the overall bandwidth load. For many, CDNs are a brave new world. While a CDN is an excellent way to deliver HTTP video, it can also present many challenges for delivering high quality viewing experience. The delivery architecture is complex and monitoring video performance through a CDN requires a specific set of quality assurance solutions.

But what if the provider only controls specific parts of the network? What if the provider has no visibility into the performance of video services within or after the CDN, other than relying on direct or indirect consumer feedback? What options do providers leveraging third-party CDNs have to assure service availability? For content and service providers who either supplement their existing delivery networks with third-party CDNs, or rely exclusively on third-party CDNs to deliver their content, it is essential to have a solution to understand quality and performance of the video services, wherever they are delivered.
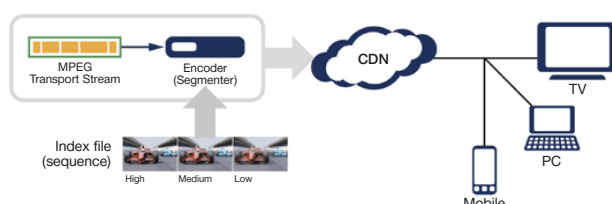
First, the ability to remotely test, validate, and understand service performance at any location after the CDN gives providers amazing insight into service performance. Providers can only understand their business if meaningful, accurate metrics are gathered and analyzed.

With post-CDN monitoring services, providers get the data points necessary so they can sleep well at night knowing video services are performing at acceptable levels or they will be alerted in real-time to quickly identify and resolve problems with the CDN video delivery infrastructure. Second, if a business partner does not effectively deliver video content, providers run the risk of seriously damaging their brand and the relationship with their subscriber.

This is especially pronounced in premium content, where subscribers pay additional service fees.

Usually, this implies that the subscriber has a vested interest in the content and will be especially upset when or if the service experiences issues. Making sure providers know whenever and wherever a problem is occurring with their services is critical. Last, it is important to be able to hold business partners accountable to the agreements drawn up at the start of the relationship. Performance varies by CDN provider, and even at different times of the day within one CDN provider. While some CDN providers may have capabilities to monitor the performance of their own network, independent, third-party validation is essential to gain an unbiased view into the performance of the video services.

Leveraging the cloud for video service assurance

Given the challenges associated with delivering streaming video services and the need to monitor after third-party CDN's, cloud-based video quality assurance solutions are ideal for content and service providers. When third-party CDN's are used, the implication is that the provider does not have a point of presence to deliver (much less monitor) video services. The cloud provides a flexible infrastructure for a video service assurance solution so providers aren't flying blind.

> *With the cloud, providers can assure video services post-CDN wherever and whenever they want*

For any cloud-based assurance solution, there are two goals: assure quality content is handed off to the CDN and assure the delivery of high-quality content after the CDN. To assure the quality of the content as it leaves the content provider network, providers must monitor the output of the video from their location. This monitoring point is helpful to ensure that the provider has delivered the video to the CDN at the level of quality desired. It can also be compared to video quality downstream to benchmark the CDN's delivery performance.

The second monitoring point is after the CDN. With a traditional hardware-based solution, providers would not be able to leverage probe technology unless the provider owned a point of presence post-CDN and in a major hub of where their content is delivered to. However, points of presence are hard to come by and involve tremendous overhead. By leveraging the cloud, providers gain instant access to monitor and assure video services post-CDN, wherever and whenever they want. By monitoring from the cloud in important business hubs, providers can better understand customer experience of their video services. With cloud-based video service assurance, providers get a flexible, quality monitoring solution with the ability to understand business performance in any location desired.

Managed services: a new model for multiscreen/OTT video service assurance

Content providers and Broadcasters are the experts in creating and developing exciting content for viewers. For many, transporting, caching, and streaming this content is a challenge, not a core competency. To this end, coupling cloud-based video service assurance with a managed service option is a new way to utilize video quality experts.

The managed service has the experts monitor, analyze, and troubleshoot video services for the multiscreen and OTT video providers. Providers receive weekly reports (or event-based reports) on service performance to understand business performance holistically. Additionally, from a real-time monitoring perspective, the managed service providers can act as a liaison to the CDN, detecting problems, isolating them, and notifying the CDN for quick resolution.

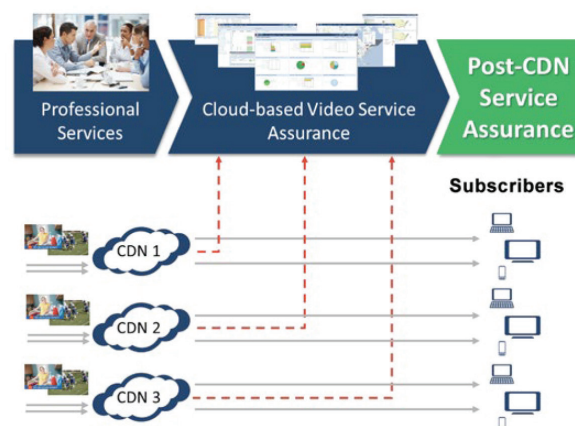The Benefits of cloud-based video service assurance:

- Get visibility into your video services after the third-party CDN

- Track overall service availability and pinpoint quality issues

- It's the cloud! Monitor your video anywhere in the world!

- Let the video quality experts do the monitoring for you!

Real world application of a cloud-based video service assurance

The application of cloud-based video service assurance in the streaming video world is extremely powerful. Telestream currently offers such a cloud-based monitoring solution to help global streaming video service providers gain key insights into the performance of their video services anywhere, any time. Telestream's iQ Solutions service would identify problems during the delivery of video content and maintain a deep understanding of their operations and performance post-CDN.

With the Telestream's iQ cloud-based video service assurance, providers have the experts monitor all video, anywhere they want, at any time or all the time.

Setting up the solution is simple: Providers work with Telestream to configure the solution, identifying the CDNs to be monitored, the cloud locations of the monitoring solution, and the specific programs that will be monitored. There is no hardware to purchase, no installation of gear, and no configuration that customer does. Telestream experts configure the solution for the provider and creates an individual portal for the provider to log in and gain complete visibility into post-CDN activity and performance. The solution is currently in use with leading video providers around the world.

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Cloud-based video service assurance case studies

Global Europe-Based Content Provider Delivering Global Content

Currently, a global broadcaster based in Europe is delivering live premium sports content to Europe, Japan, and North America. This broadcaster had a couple of goals: First, the broadcaster needed to verify the availability and stream performance of their content in their major geographic hubs, and second, the broadcaster needed to verify that certain events were properly "blacked-out" where and when required. iQ Solutions initiated Video Monitoring in the Cloud managed service in Japan, Europe, and North America. With this managed service, the broadcaster validated the availability of the video streams in its key markets, gained visibility into the real-time performance in each region, and validated that it had properly imposed black-outs where appropriate.

Global, Tier 1 Telco Testing CDN Performance

A current global, tier 1 telco customer of iQ Solutions uses an on-net CDN (built by the telco) to deliver multiscreen content to its subscriber. In addition, the telco has diversified its delivery platform, leveraging multiple third-party CDN operators for both redundancy and efficiencies. The telco wanted to ensure that the third-party CDN operators could properly deal with large increases in traffic that were anticipated during the launch of their new premium services. Using the iQ Solutions cloud-based video service assurance, the telco actively requested multiple Gb/s of specific, high value assets for load and configuration testing. The solution helped the telco detect multiple HTTP connection errors, unneeded HTTP redirections and stream performance degradation. With the information provided by the solution, the telco could proactively work with the CDN provider to correct these misconfigurations to ensure that their brand and customer experience were not affected at the launch.

Global Content Brand Monitoring Worldwide Streaming Service

A global content provider conducted a week-long event that was streamed globally. This brand wanted to ensure the availability and performance of its video services across its network to improve stream quality and protect its brand. This company owns its origin servers but engaged with a third party CDN to deliver the content globally. With the iQ Solution cloud-based managed service, the content provider was able to monitor the availability and video quality on the output of their origin to ensure the quality and availability of its live and on-demand assets while simultaneously monitoring the output of its CDN partner to ensure the content availability and compare the CDN output video quality. This assurance configuration allows for comparison of video quality at key hand-off points (for the content provider and the CDN) so both parties have the knowledge needed to quickly and accurately pinpoint the causes of video issues and infrastructure misconfigurations.

Conclusion

Telestream's iQ Solutions cloud-based managed service allows you to focus on your business while the video quality experts make sure your services and brand are delivered at the quality you expect, anywhere in the world, at any time.

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