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EXECUTIVE BRIEF

Take IP Video Over the Top with M-ABR

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For cable TV Service Providers, IP video is nothing new. Over the past few years, some service providers have been offering IP-based video on demand and linear services to secondary screens. But for many, IP video has yet to be used to deliver primary linear video services. However, that is about to change. With the rise in popularity of video-capable consumer devices such as SmartTVs, PCs, tablets, streaming boxes and smart phones, IP video delivery and the web-based technologies behind it are expected to gain popularity as a means of reaching consumers with linear video offerings.

The cornerstone for service providers in making the transition to IP video is the ability to deliver fully managed linear TV services to any screen. In doing so, service providers must support a wide range of bit rates for varying screen sizes, from thumbnails to 4K ultra-HD, and account for fluctuating network conditions as well.

The most effective way to support this new age of video is through the use of adaptive bitrate (ABR) technology. ABR video streaming addresses “best-effort” delivery characteristics and was mainly developed to deliver content over IP networks which became widely adopted by OTT service providers such as Netflix and Hulu. ABR video is delivered over IP using HTTP/TCP unicast, which is the foundation for OTT service providers who are delivering video over the Internet.

However, ABR introduces its own challenges, most notably consuming large amounts of overall network capacity as it delivers a unicast stream to every device it serves. Compounding the issue is that high-speed data services continue to grow rapidly, competing with IP video for a limited amount of available spectrum. Therefore, service providers must deploy a unified, IP video delivery and management infrastructure for all device screens and video services using web-based technologies in order to more efficiently utilize network resources.

To help make the delivery of IP video over the cable network a reality, a multicast-assisted ABR architecture (M-ABR) has been developed to enhance the foundations of ABR video stream delivery. M-ABR complements ABR-based linear TV services by off-setting the expected bandwidth explosion in the transition to next-gen

IP set-tops that support primary TV screen viewership levels from the current levels seen for second screen services.. With M-ABR, the first few requests for a given stream are fulfilled via unicast, whereas all following requests for that stream are facilitated via multicast. This approach achieves the goal of a unified architecture to reach all devices in and outside the home, while minimizing the bandwidth required for a linear IP video service.

Additional detail on multicast-assisted ABR is available in the ARRIS white paper **"Challenges Delivering Multiscreen Linear TV Services: Multicast ABR to the Rescue."** In it, ARRIS provides empirical data on the bandwidth implications and the impact of channel change in a multicast-assisted ABR environment.

To learn more about the ARRIS M-ABR solution, download the **"Multicast-Assisted ABR Solution Summary."**

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