Cisco and Verimatrix: Protecting Every Step of the Digital Media Path

Explosive Growth of HTTP

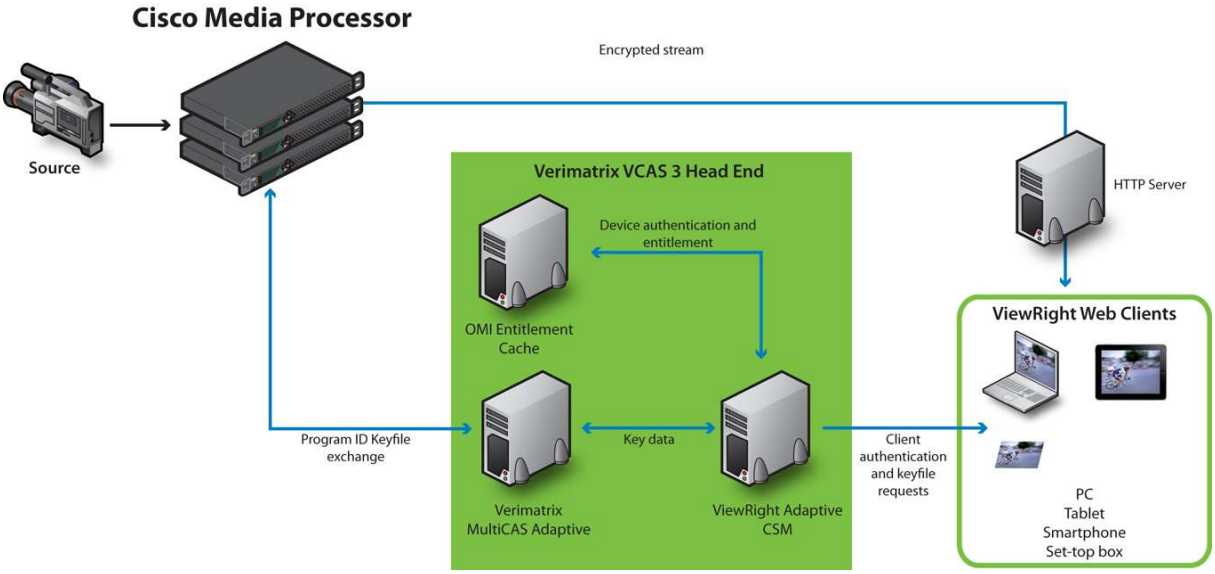
A fairly popular movie in years past made famous the line, “if you build it, they will come.” When it comes to digital video today, the more appropriate line may be, “if you offer it, they will consume it—en masse.” The trend line is now undeniable: according to Nielsen’s Three Screen Report (“How People Watch—A Global Nielsen Consumer Report,” August 2010), a total of 10 billion videos are streamed each month, and the number of people watching mobile video increased 70 percent, from more than 15 million to more than 21 million, during the 2009-2010 time frame.

Figure 1. More content is being consumed by viewers across every screen

So this fact is a given: More content is being watched by more people on more devices than ever before. Gone is the notion of “three screens”—mobile, television, and laptop; here to stay is providing content to every screen. With the growth in HTTP as a delivery mode for this content and the ability of adaptive bitrate (ABR) streaming solutions to provide the best possible experience across these screens, we are experiencing a serious uptick in build-outs and growth of HTTP-based approaches.

Critical among them is the Apple® HTTP Live Streaming (HLS) specification, which is becoming an IETF standard. This standards-based approach has been used to deliver all live and on-demand content to the Apple® iPhone®, iPad®, and iPod Touch. In ever-increasing numbers, broadcasters and service providers are looking to the HLS specification to deliver content beyond the universe of Apple® iOS platforms as well. In fact, this specification can be used to provide television-quality experiences to the living room in the digital home at high-definition (HD) resolutions, with the same interactive features seen on the web.

Figure 2. The Cisco Media Processor Verimatrix Collaboration



Securing the Stream

In a world of "TV Everywhere," where any given clip or live television broadcast can be consumed on an ever-increasing number of screens and profiles, ensuring that this content is secure, rights-managed, and permissively accessed is critical. The HLS specification provides for Advanced Encryption Standard (AES)-128 encryption of the streamed assets, but sometimes that is not enough for you, your customer, or your broadcast partner. In many cases, content licensing calls for proper digital rights management (DRM) or conditional access (CA). This approach helps ensure that from the moment the file or live signal is digitized and compressed, the files and streams are secure and protected from interception and unauthorized access. In addition, DRM and conditional access techniques can also manage output control (the ability to play a given media stream from a device to another screen) and content ratings used for parental control settings.

Meeting the Requirements

To deliver on these needs and to help broadcasters, operators, and service providers take advantage of the massive capacity of HTTP and ABR as they deploy over-the-top (OTT) and TV Everywhere experiences, Cisco® and Verimatrix are teaming to bring best-of-class solutions to the space.

The Cisco Media Processor streaming appliance and Verimatrix's third-generation Video Content Authority System (VCAS 3) are now fully integrated and work together so that linear broadcast signals are secure the second the digital bits leave the encoder. The Cisco Media Processor and VCAS exchange keyfiles that secure the content so that any interception, on any network, anywhere ensures that the content can be neither decrypted nor viewed. Only when that content is requested by an HLS-capable device or set-top box, the client is authenticated, and the keyfile challenged and identified can an authorized viewing experience occur. Further, you can enable this same stream to allow or disallow playback to a connected television or monitor. Every step of the digital path is protected, helping ensure that both content and pay-TV revenues are secured, and meeting a critical requirement for many media and entertainment applications of this content.

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