Cisco Media Processor for Digital Media Advertisements

Today, all but the most sophisticated content providers have limited options for monetizing live video. These options include companion display ads (such as banners and towers) and pre-roll video advertising. By not inserting ads in the live video itself, content providers are missing the opportunity to fully monetize their video.

Cisco®, the global leader in digital media preparation, has pioneered “ad-enabled” video encoding to support the insertion of video advertisements into live Internet video, helping ensure that content providers can build robust, profitable businesses around live content.

Challenges of Current Solutions

Currently there are no completely automated approaches to inserting Internet ads into live content. In scenarios where manual ad marker insertion is necessary—such as live sporting events that have unpredictable timelines—workflow tends to be very complex, with critical functions of the marker insertion spread out across several different hardware and software components. In addition, high levels of expertise and staffing are required to operate in this mode.

The Answer

Cisco offers an all-in-one workflow to detect an existing broadcast ad, remove it by inserting a slate, and insert new ad markers to begin insertion of a new ad. Content providers now have unprecedented opportunities to turn video streams into profit centers.

Moreover, the Cisco ad-enabled encoding is built into our award-winning Cisco Media Processor live streaming appliance. The Cisco Media Processor supports distribution to mobile devices such as the iPhone® and iPad®, browser-based playback using Silverlight and Flash, and over-the-top (OTT) scenarios on set-top boxes.

Advantages of Cisco Ad-Enabled Encoding

- The Cisco Media Processor encoding appliance is the central point of translation between broadcast and IP delivery for all devices.
- The Cisco Media Processor sits at such a pivotal point, and it is ideally situated to handle ad marker insertion, appropriate for all devices and formats.
- Cisco ad marker insertion methods support Interactive Advertising Bureau (IAB) standard impression measurement, allowing for verifiable audiences and a solid business model.
- Cisco’s approach to ad-enabled encoding allows you to work with the ad serving partner of your choice.

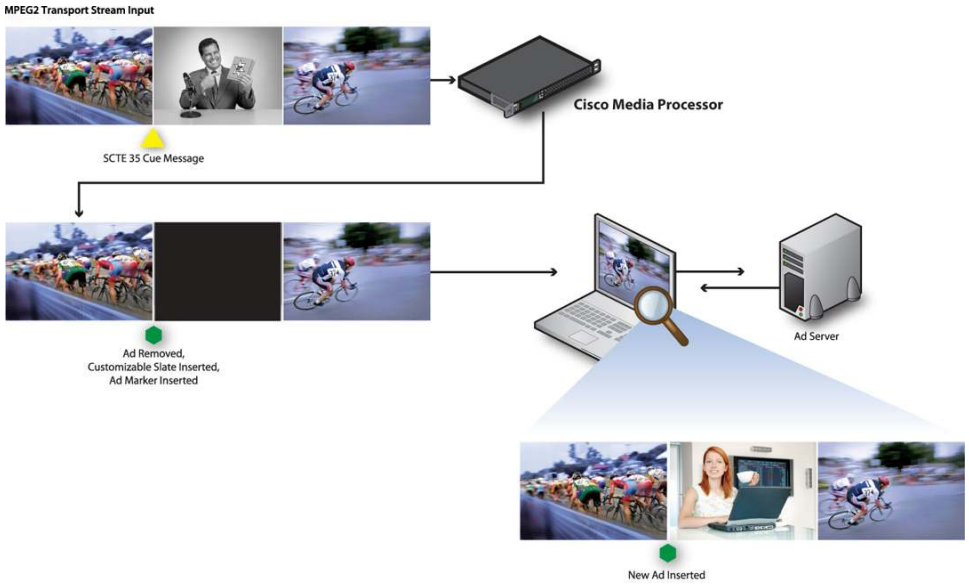
Scenarios for Ad-Enabled Encoding

Automated Ad Detection

In this ultimate approach to “hands-off” broadcast ad detection, Cisco Media Processor encoders can identify SCTE 35 cue messages in IP-based source video.

A SCTE 35 cue message denotes the existence of an ad at a certain time in the future. The Cisco Media Processor intercepts the cue message and translates it into a new marker appropriate for Apple® HTTP Streaming, Flash, or Silverlight. This marker is ingested by a media player and the media player makes a call to the ad server for a new ad.

Figure 1. The Cisco Media Processor Automated Ad Detection



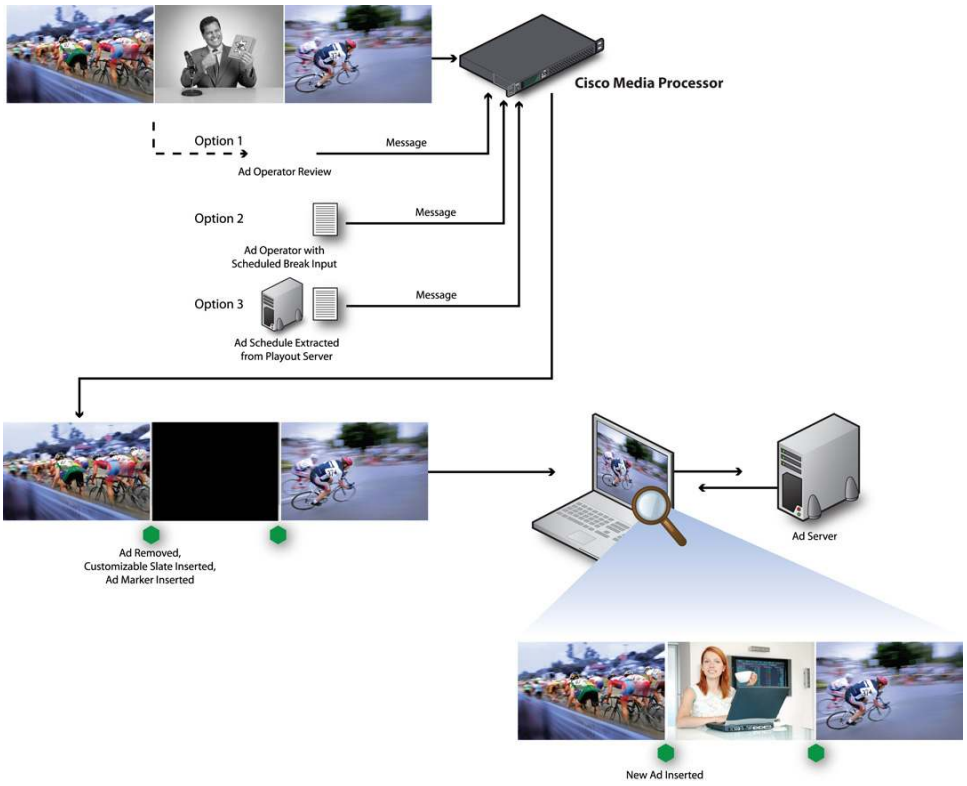
Manual Ad Detection

Live events—especially sports—often lack predictable break-points for advertising, and a broadcast feed may not contain cue messages. Moreover, ad insertion for some high-value content may require that a person monitor content to verify ad insertion. For these cases, Cisco offers a manual, operator-directed approach to inserting ad markers using Cisco Media Processor encoders.

An operator can use the Cisco Media Processor to output a live proxy feed to review content, and then use the processor to introduce a specified amount of delay to the outbound stream to allow for time-code exact ad marker insertion. All of this process takes place on the Cisco Media Processor, reducing the need for additional hardware and staffing.

The XML message application programming interface (API) to the Cisco Media Processor allows you to manually insert new ad markers. The marker command requires a timecode, in/out parameter, optional preroll length, and duration. This marker is ingested by a media player and the media player calls the ad server.

Figure 2. The Cisco Media Processor Manual Ad Detection



Ecosystem Partners

Ad insertion for live events starts with Cisco Media Processor encoders. Cisco adheres to marker formats established by close partners such as Apple®, Microsoft, and Adobe, so content providers can work with their usual partners across the online video value chain, including content delivery networks (CDNs), video platform service providers, and ad serving companies.

Ad-Enabled Encoding and Rich-Media Platforms

- Microsoft Silverlight: For Smooth Streaming, Cisco Media Processors can provide a Sparse metadata (text) track that includes markers indicating ad splice-points.
- Apple®'s HTTP Streaming: The Cisco implementation of iPhone® and iPad® ad delivery was developed in conjunction with mDialog, and it uses comment lines inserted into the playlist files that mDialog systems can interpret for ad insertion.
- Adobe Flash: Flash lacks a defined ad marker metadata format; however, you can adapt the existing generic cue point markers for this purpose. Cue points are Flash-specific metadata that can trigger an action in the Flash player at a specified time. Event cue points (as opposed to navigation) embedded in the stream must have a name, type, and value parameter, as well as the associated time stamp.

Steps to Internet Ad Insertion for Live Video

- Detect ad opportunity: The method for detection often varies by content or by content provider. Some broadcast signals contain markers (SCTE 35 or 104) that you can use to automatically detect ad opportunities. If the content does not contain these markers or if the content is less predictable (as with live sports), operations staff can monitor a feed and mark ad opportunities as they arise.
- Remove broadcast ad: If you are repurposing a broadcast feed that contains advertising, it is often necessary to remove that ad. You can remove the ad with a slate, which blacks out the original ad.
- Insert new ad marker for Internet ad: At this point you must insert a marker for the new Internet ad. Different rich-media platforms, including Apple®, Adobe Flash, and Microsoft Silverlight, call for different ad markers.
- Detect the new marker: Use internal development resources or work with a partner to build a video player that responds to the new ad markers.
- Insert new ad: The video player should detect the new marker and call a third-party ad serving company, which can help target ads for viewers.

Other Tips

- Make sure that ad inventory and reporting mechanisms adhere to IAB standards. If you cannot verify viewing numbers with third-party accounting, it is hard to justify your cost per thousand impressions (CPMs) to potential advertisers.
- This event is live. You have one chance to “wow” your audience, so you cannot afford any downtime.
- Use adaptive bitrate (ABR) to your advantage. Adaptive bitrate streaming helps ensure that end users are watching video at the highest possible quality for their network connection and computer.
- Do not skimp on bitrates for ads. Make sure the video quality of your ad matches the quality of the live content. A lack of continuity will result in a poor user experience.

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