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Written by **Liz Gannes**
Posted Wednesday, June 10, 2009 at 12:01 AM PT

The Lowdown on Apple's HTTP Adaptive Bitrate Streaming

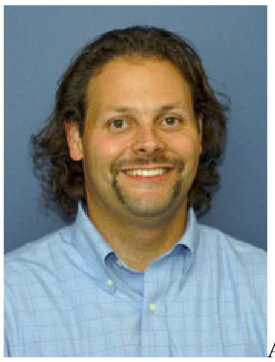
This week Apple embraced adaptive bitrate streaming over HTTP at its developer conference in San Francisco. It will be available with the new iPhone OS 3.0 on June 17 and in September with the new version of QuickTime for Mac OS X Snow Leopard.

After the Apple presentation Monday, we chatted with one of only a couple developers who was given early access to Apple's HTTP streaming. He gave us the lowdown on how Apple will implement the technology.

First, a bit of a refresher. Adaptive bitrate streaming, brought to the fore by Move Networks and now being pushed by Adobe, Microsoft and Apple, is one of the more interesting things going on in video today. I just finished a research report for our paid GigaOM Pro service on the topic and I'd love for you to check it out (only $79 for unlimited access). Here's a bit from my intro describing the concept:

> There's no one-size-fits-all approach to clean up [problems with video quality and delivery], especially because many of them result from complications and hang-ups on the video watcher's computer or Internet connection. That's why many companies are turning toward adaptive bitrate streaming, a technique of detecting a watcher's bandwidth and CPU capabilities in real time and then adjusting the quality of a video stream. That requires encoding a single video at multiple bitrates and switching to the most appropriate one on a moment-by-moment basis. The result: very little buffering, fast start time and a good experience for both high-end and low-end connections.

One contextual note about Apple's move to use HTTP for adaptive streaming is that it paints Adobe into a corner. Adobe does have its own "dynamic streaming" for Flash Media Servers, but that requires buying special servers and switching between streams within a single real-time session. HTTP delivery treats video files like any other file and transfers them in chunks through individual sessions. Since no special servers are required, HTTP streaming is seen as less expensive than traditional streaming, though in some cases it may be less secure or reliable.



Apple invited two outside developers, Inlet Technologies and Envivio, to get early access to its new streaming video plans. We spoke with John Bishop, SVP of strategy and business development at Inlet (pictured), to get the lowdown on Apple's new technology. Raleigh, NC-based Inlet's Spinnaker appliance enables live video delivery, and the company is taking part in most every sports streaming deal out there right now. (Though Bishop wouldn't comment, it's all but expected that Major League Baseball will update its iPhone application with live video when the new OS comes out; the league's subscription live streaming product is powered by Inlet and Swarmcast.)

While Bishop's company isn't attached to any one format, it's clear he thinks HTTP streaming is the future. "It's the first time video works for the web as opposed to the web working for video," he said. Bishop said he thought Adobe would continue to succeed with video on demand but that others may gain ground for live streaming.

Apple's new HTTP streaming will also support live and on-demand H.264 video play directly within a browser. That means companies will no longer have to make and sell branded applications, as MLB and TV.com do today. It also means a lessening of the impact of AT&T meddling with approval of applications that try to stream over the 3G wireless network. Today iPhone apps from video providers like Sling, Poptiq and Joost are Wi-Fi only. Clearly, web pages loaded in browsers have no such gated approval process. Provided that increased video consumption doesn't cripple the network, 3G would make video experiences on the iPhone far more interesting — when you're limited to Wi-Fi only you might as well just open your laptop.

Then, after video publishers have encoded their content in multiple versions for adaptive bitrate streaming, they'll feed the files to Apple's Segmenter, a new piece of Mac desktop software that cuts video into small chunks. "It's like a ginsu knife," Bishop said.

Then, when a video is playing, Apple will check periodically to see which bitrate chunk it should serve to the viewer. Bishop said other providers like Move, Swarmcast and Microsoft are a bit more diligent about this than Apple will be. They check every 2 seconds to see how fast the last 2 seconds were received and pump out the next chunk accordingly. Apple won't be quite so optimized.

Bishop said Inlet has been bombarded with requests to get new live adaptive streaming products out for the upcoming iPhone release — and after that, for the desktop release in September. Which can only mean good things for those of us who like to watch video on our computers and on the go.

Photo of iPhone MLB app from 2008 by Flickr user artifishall.

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1. This was very useful information. I am "just" an owner of the iPhone and a big video fan. I am not in the video industry at all. But, I found this site though multiple links/hops. Over on the iPhone forums, there is very little discussion going on about the HTTP video streaming capabilities. I am hoping for considerably improved content delivery on the iPhone. If Netflix jumps on board, then life will be very wonderful. :) There is a rumor that Hulu is looking to get on the IPhone. Maybe this HTTP thing will help push them over the edge?

   Anyway – thanks again for an informative article.

   Scott

   Scott on June 10th, 2009 at 9:59 am - Permalink

2. [...] The Lowdown on Apple's HTTP Adaptive Bitrate Streaming on June 10th, 2009 at 12:02 am – Permalink [...]

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3. [...] Staff | Wednesday, June 10, 2009 | 10:50 AM PT | 0 comments The lowdown on Apple's HTTP adaptive bitrate streaming (NewTeeVee) Measuring success as a freelancer (WebWorkerDaily) On desktop Linux, the Mac, and market [...]

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4. [...] The adaptive bitrate aspect of the streaming is at the forefront of what other players like Adobe and Microsoft are doing in video. Through new Mac software called Segmenter, video publishers will divide their content into tiny chunks of different qualities that are subbed in for each other when a user's bandwidth and CPU constraints improve or degrade. That means improved video start times, no buffering, and streaming at the highest quality possible in any situation. Read the rest of this article on NewTeeVee → [...]

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