move ADAPTIVE STREAM

Move Adaptive Stream offers the Highest Quality, Lowest Cost, and Most Flexibility

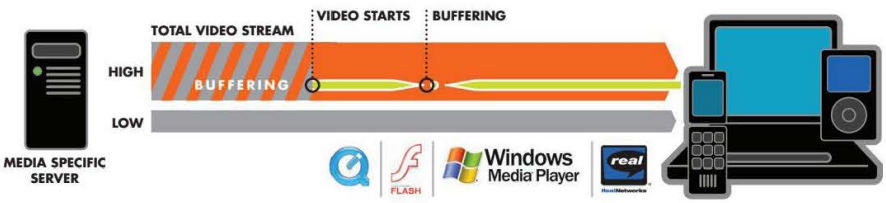
High-Quality Streaming: The Problem

Viewers are used to high-quality viewing, and they want it online too. Unfortunately, anyone who has tried knows that current streaming technologies are fraught with problems—including delayed starts, poor video quality, and long buffering interruptions. Additionally, the size of most streaming video frames is too small to satisfy users who are accustomed to large-screen, high-definition television sets. As television providers improve navigation with PVR-like functionality, as well as capabilities such as on-demand and pay-per-view, Internet streaming falls further behind.

Address
796 East Utah Valley Drive
American Fork, UT 84003

General Information
Phone: 801.756.5805
Fax: 801.756.5806
info@movenetworks.com

Sales Information
Phone: 801.756.5805x3
Fax: 801.756.5806
salesoffice@movenetworks.com



A study conducted by StreamGuard examined more than 2,400 different Internet video streams. They concluded that:

- 51% of stream **viewers were frustrated** with the experience.
- 17% of streams have an **immediate fatal error**.
- 25% take between **5 and 10 seconds to start playing**, and stop to rebuffer before the video is finished.

With current technologies, dial-up users do not typically attempt video streaming, and broadband users often give up after prolonged waits or unresponsiveness due to regular rebuffering.

High-Quality Streaming: The Solution

Move Networks, Inc. has developed completely new streaming technologies which revolutionize how video content is delivered and experienced over the Internet. These technologies enable the most adaptive and effective solution available anywhere, and the only solution that is designed to work despite the Internet's frequent problems of high latency, packet loss, and congestion.

How does it work?

Move Adaptive Stream leverages a process called Simulcoding that breaks large video files into many small files called streamlets. Streamlets are multi-second video segments that are delivered using a highly-efficient transmission protocol. Unlike traditional streaming solutions, streamlets are stored on standard HTTP Web servers–not specialized media servers such as the Microsoft Media Server or Real Network's Helix streaming server. Enabled by this patent-pending technology and protocol, Move Adaptive Stream provides a continuous, high-quality stream unattainable with competing technologies.

When an Internet user requests a video using a standard HTTP "GET" request, streamlets are transferred over the Internet from the origin Web server to the client's Web browser or client application where they are reassembled in the correct order. The delivery protocol uses multiple TCP sessions to substantially improve the reliability of the transmission and increase the total carrying capacity during each unit of time.

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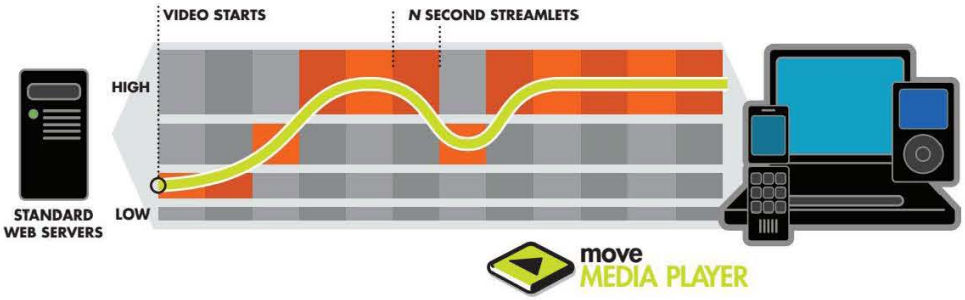
Using streamlets allows a video stream to transfer much more efficiently and effectively through the Internet infrastructure. It also protects against stalls or other glitches.



By way of analogy, traditional streaming could be compared to a one-lane highway (single TCP session) during rush hour traffic (large amount of data traveling between server and client). Now, imagine a multi-lane freeway where traffic stalls in one lane can be minimized by changing lanes, significantly expanding the aggregate traffic capacity. To carry this analogy one step further, because Move Adaptive Stream puts the intelligence in the client, the "driver" can make instantaneous decisions to speed up, slow down, or change lanes to minimize delays and maximize viewing experience. Traditional streaming would force drivers to report their status and wait for a traffic controller (the media server) to give instructions to speed up or throttle back.

What are the advantages?

Move Adaptive Stream offers dramatic advantages over traditional streaming. It provides more than a new protocol for streaming. Move Adaptive Stream provides a better way to publish and experience video on the Internet. The advantages can be grouped into five categories that correlate with the streaming process:

- **Encoding** – preparing the video for transmission.
- **Transmission** – delivering the video from the "origin server" to the target playback device.
- **Client Controls and Playback** – the user experience.
- **Scalability** – accommodating large numbers of users.
- **Publisher Feedback and Administration** – measuring and monetizing the video.

Move Networks raises the standard for online streaming to provide the best experience available today based on quantitative measurements and qualitative consumer feedback. The streaming provided by Move Networks exceeds any other platform, standard, or previous implementation in terms of picture quality, stream adaptation and continuity, stalls and buffering, stream responsiveness to navigational changes, user control of the experience, and operational efficiencies. No other platform today can delight customers and set new expectations for online entertainment like Move Adaptive Stream.

The Proof: Compare

In test after test, Move Networks has demonstrated better speed and performance than implementations based on Flash, Windows Media, or other streaming solutions. Move Networks provides an end-to-end streaming solution that exposes revolutionary performance and feature attributes on every level.

Feature Comparison Table: Move Network vs. Competitors

	Move Networks	RTP/RTSP	Progressive
Streaming			
Quick start under all conditions	**Y**	N	N
Adjusts bit rate without playback pauses	**Y**	N	N
Playback always at highest available bit rate	**Y**	N	N
Avoids getting too far ahead, wasting bandwidth	**Y**	Y	N
Player			
Rewind	**Y**	N	Y
Fast Forward	**Y**	N	Y (only after downloaded)
"Scrub" navigation	**Y**	N	Y (only after downloaded)
Can pause, rewind, and scrub "live" streams	**Y**	N	N
Publish			
Scalable to High Def (encodes > 2 megabits)	**Y**	N	N
Live time shifting	**Y**	N	N
Can stream "live" video streams	**Y**	Y	N
Performs double-pass for highest-quality live streaming	**Y**	N	N
Define subscription levels, whether feeds are live or on-demand, and the look and feel of the player	**Y**	N	N
Monetize			
Ability to insert advertisements, or mark metadata without additional products or add-ons	**Y**	N	N
Cost savings: Delivery from generic web servers	**Y**	N	Y
Cost savings & scalability: uses of proxy caches	**Y**	N	Y
GeoStats from x-mile radius specifications	**Y**	N	N

Lower cost

Move Networks not only gives you better-quality streaming, we also give you lower costs due to server specifications and less time spent repurposing the content.

Web Servers

As mentioned earlier, Move Adaptive Stream breaks large video files into many small files called streamlets. These files are multi-second video segments that are delivered using a highly-efficient transmission protocol. Unlike traditional streaming solutions, streamlets are stored on **standard HTTP Web servers**; not specialized media servers such as the Microsoft Media Server or Real Network's Helix streaming server. In this way, your cost is lowered substantially because you may purchase less-expensive servers to handle increased customer viewing.

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Repurposing Time

In addition to lower hardware costs, your personnel costs will decrease as well. Instead of spending countless hours editing and repurposing video files, Move Networks does most of the work for you. Small files are automatically created that can be addressed by a virtual timeline. Instead of copying video content and creating new edits, an editor or Webmaster can simply set "in and out" points without ever modifying the underlying media. You can easily create playlists from these building blocks and publish them to an online experience. Most of our clients report saving hours of work each week because of efficiencies gained through Move Networks' approach to addressing the video through index points in a virtual timeline.

More Flexible Player

Move Media Player gives you rich statistics, more branding, and more viewers.

Rich Statistics

Move Media Player includes anonymous logging to gather a rich set of statistics on what is being viewed and the overall viewing experience. These data are gathered throughout the viewing experience and transferred to a central repository in batches at times when such transfers will not impact the video experience.

The data include information such as total number of views, average length of views, streaming experience, and more. The resulting reports are available through Move Monetize, the business logic and decision-making service provided by Move Networks. The reports in Move Monetize are customizable. In addition to the standard reports, Move Networks can provide reporting on more than 20 additional data sets in custom reports.

More Branding

Move Media Player allows you to modify the player interface or Web page to your own look and feel, making it a powerful branding vehicle and helping your Web site to maintain a consistent design. In addition, the player is embedded in your site, so viewers stay put—they aren't taken to a separate player page from which they may not return. All this keeps your brand in their head longer and establishes it as a powerful, hip place to be.

More Viewers

Move Media Player's social networking capabilities will let your viewers spread the word for you. And they will spread the word. With unique capabilities and flexibility such as fast forward, rewind, scrub, and more, they'll want to be the first to tell others.

Let viewers be your viral marketers. They'll be able to email video clips, add a clip to blogs, add a clip to their personal Web sites, and more. All of this is done under your control: you choose what features are available.

To find out more, contact Move Networks today. Call 801-756-5805 or email salesoffice@movenetworks.com.