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What streaming video/audio formats are available?

There are three main players in the streaming media game: RealNetworks, Microsoft, and Apple.

RealNetworks

By far the most popular streaming format, RealNetworks' **Real Media (.rm)** format provides audio and video streaming to millions of users around the web every day. To view Real Media streams you need to have a copy of Real Player, which comes in Basic (free) and Plus (pay) versions (although Real makes you work VERY hard to download the free one by bombarding you with invasive "are you *really* sure you don't want the pay version?" advertising). Real also produces a range of server and encoding software to suit a variety of media serving needs (and budgets), for both Unix and Windows platforms.

The format itself is generally very good, although at low bit-rates the compression can get a little blurry (particularly if there is a lot of movement in the frame). One of the biggest advantages Real has over it's main competitor, Windows Media, is that the Real Server has the ability to determine what the highest quality of content (speed) your current connection supports, and to seamlessly serve it to you. This removes the need for streaming media producers to create multiple versions to suit different connection speeds.

The main authoring tool for Real Media is *Real Producer* and, like their player, is available in free and pay versions. Many other commercial editing programs also have Real Media export functions.

Windows Media

Microsoft was late to the streaming media game, but in typical fashion moved to try and dominate quickly. Their initial offering was a product called *Netshow*, which was renamed *Windows Media* for version 4.0. Windows Media uses Microsoft's **Active Streaming Format (.asf)** for its streaming files, which also has additional functions to allow presentation-style (slide-shows, audio-to-event syncronisation etc). To view Windows Media, you need to have the Windows Media Player (version 9 or later to take advantage of the best features) installed on your computer. Unlike Real's product, Windows Media Player plays almost all types of streaming media content and it's 100% free. The server software (Windows Media Services) is also 100% free although it only runs on Windows servers (NT/2000 for version 8, and Server 2003 for version 9).

Windows Media arguably provides a better quality of video and audio than Real, although to get the most out of the format you must be prepared to deal with its inconsistent encoding performance and often fickle compression nature. The additional presentation functionality in Windows Media also opens up a whole world of options, particularly the fact that you can synchronise functions in web page (or opening a new page) with points in your media presentation. The major drawback is of course the inability (as of version 7) to support multiple bit-rates with a single file like Real. This means if you want your high-speed users to see decent quality media, you need to create several versions of the same file, one for each of the connection speeds you wish to target.

related questions

- What is streaming video/audio?

related links

- Adobe
- Darwin Streaming Server
- Quicktime
- Real Media
- Streaming Media Review
- Ulead
- Windows Media

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There are several authoring tools available that make up the *Windows Media Tools* suite. You can download them for free from Microsoft. There is also a plug-in for *Adobe Premiere* that allows you to export movies in ASF format.

Quicktime
Apple's proprietary video format has been a staple of digital video for years, and was the first cross-platform way of viewing video online. Although Quicktime (.mov) has quasi-streamed since version 2.0, it never used buffering so most people still had to wait for the entire movie to download before it could be viewed. With versions 4.0/5.0 Apple decided to push Quicktime as a competitor in the streaming market to Real and Windows Media, however the need for special encoding (not done by many standard Quicktime applications, combined with the comparatively minimal levels of compression, have meant that Quicktime still does not stream consistently enough to seamlessly watch it while it's downloading.

The basic Quicktime player is free from Apple, although they suggest you update to Quicktime Pro (for a fee of course). Quicktime does not require a server to stream - you can simply download the file and watch it - although the "streaming" properties of Quicktime later versions requires Apple's Quicktime server, which is only available for OSX servers. Recently, Apple decided to release the source for Quicktime server and a project known as Darwin Streaming Server is making the technology available for non-Apple platforms such as Windows and Linux.

Quicktime is by far the most superior format in terms of video/audio quality for putting media on the Internet, although it's in ability to stream properly will always place it behind Real/Windows Media. In most cases, people include Quicktime as an additional "high-quality" option for those who don't mind the wait.

You have several options for authoring Quicktime, ranging from the tools available when you purchase *Quicktime Pro* to third-party video editing applications such as *Adobe Premiere* and *Ulead Media Studio Pro*.

Recommended Reading

filmmaking.net suggests the following books for further information on this topic:

- The Filmmaker's Handbook : A Comprehensive Guide for the Digital Age, by Steven Ascher, Edward Pincus, Robert Brun