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Video on the Web Flash Video



Introduction

The demand for delivering video over the World Wide Web is increasing dramatically.

This document is a guide to educate and provide video creators with general guidelines to assist with the activities of producing and distributing video on the Web.

One important aspect in this endeavor is to provide realistic expectations.

- 📺 Web video is not TV quality.
- 📺 Bandwidth limitations often make creating quality desktop video a challenge.
- 📺 Tradeoffs will have to be made between file size, image quality, frame rate, and audio quality.
- 📺 Compression affects the look of the video at a given bandwidth.

The compression/decompression routines developed for Web video are improving everyday.

Use these guidelines as just that -- information to guide you in the creation and distribution of video on the World Wide Web.

The creation of high-quality video begins with the "big picture" approach. Keep the whole production process in mind while carefully planning each step.

There are essentially 2 places where picture quality can be lost.

- 📺 Video captures two-dimensional images of a three-dimensional world. Some of the detail found in the colors, sounds and images may be lost. Using a high quality camera, good lighting and audio equipment and professional production practices are ways to minimize that loss.
- 📺 Compression of the video is necessary to deliver it over the Web. Compression reduces the amount of data or information in the video again. Using the proper compression is another important step in producing quality video. The old saying "Garbage in, garbage out" is as true with video as any other computer process.

Video technology can be exciting and frustrating. The technology is often on the cutting edge and there are varying standards to go by. Different equipment and software can create challenges.

Flash Video

Flash Video is the name of a file format used to deliver video over the Internet using Adobe Flash Player (formerly known as Macromedia Flash Player) version 6, 7, 8, or 9.

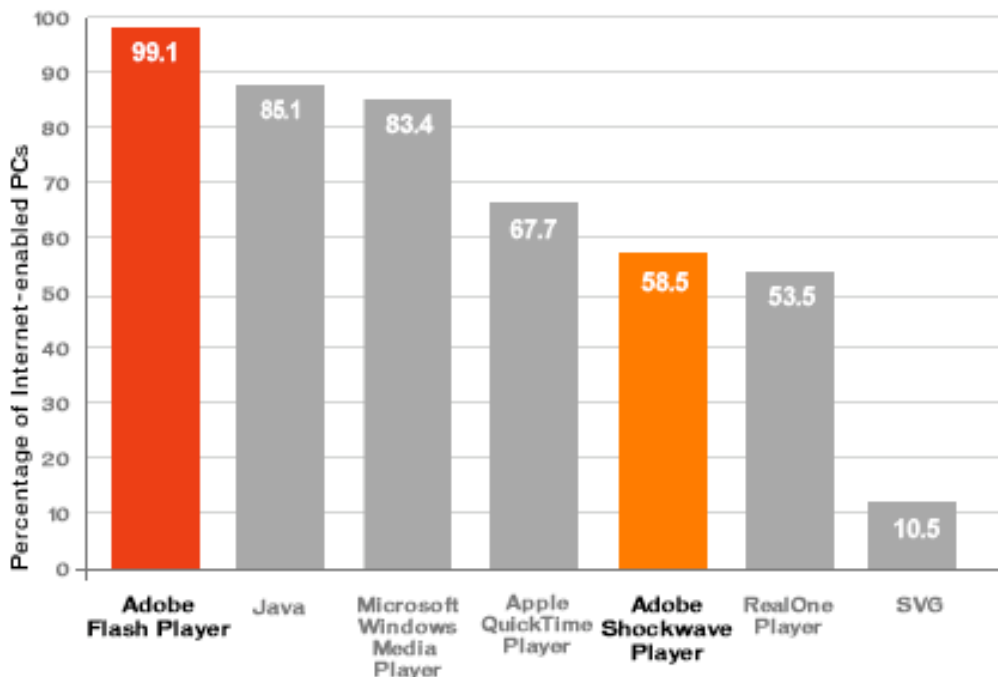
Till version 9 update 2 of the Flash Player, Flash Video referred to a proprietary file format, having the extension FLV.

On August 20, 2007, Adobe announced on its blog that with Update 3 of the Flash Player (currently in beta), Flash Video will also support the MPEG-4 international standard.[1]

Flash Video content may also be embedded within SWF files.

Notable users of the Flash Video format include YouTube, Google Video, Reuters.com, Yahoo! Video and MySpace. The BBC have recently begun using .flv based media on their news portal.

Flash Video is viewable on most operating systems, via the widely available Adobe Flash Player and web browser plugin, or one of several third-party programs such as MPlayer, VLC media player, or any player which uses DirectShow filters (such as Media Player Classic, Windows Media Player, and Windows Media Center) when the ffdshow filter is installed.



Flash Players

The Adobe Flash Player is a multimedia and application player developed and distributed by Adobe Systems.

It plays SWF files which can be created by the Adobe Flash authoring tool, Adobe Flex, or a number of other Adobe Systems and third party tools.

It has support for a programming language called ActionScript, which can be used to display Flash Video from an SWF file.

Because the Flash Player runs as a browser plug-in, it is possible to embed Flash Video in web pages and view the video within a web browser.

The primary downside of Flash's FLV player is that it is very inefficient compared to a directly embedded video file, dropping frames when running on slow clients that run directly embedded video perfectly.

There are however a number of alternative players out there:




📺 [FLV Player](#) - A highly customizable player, my favorite, used by a wealth of sites.

📺 [Gnash](#) - Open source player, part of the GNU project.


📺 [Wimpey](#) - Another stand alone player, I haven't played with this one yet, but it looks shiny.

Delivery options

Flash Video files can be delivered in several different ways:

-  As a standalone .FLV file. Although Flash Video files are normally delivered using a Flash player for control, the .FLV file itself is fully-functional on its own and can be played or converted to other formats from local storage such as a hard disk or a CD.
-  Embedded in a SWF file using the Flash authoring tool (supported in Flash Player 6 and later). The entire file must be transferred before playback can begin. Changing the video requires rebuilding the SWF file.
-  Progressive download via HTTP (supported in Flash Player 7 and later). This method uses Action Script to include an externally hosted Flash Video file client-side for playback. Progressive download has several advantages, including buffering, use of generic HTTP servers, and the ability to reuse a single SWF player for multiple Flash Video sources. Flash Player 8 includes support for random access within video files using the partial download functionality of HTTP, sometimes this is referred to as streaming. However, unlike streaming using RTMP, HTTP "streaming" does not support real-time broadcasting. Streaming via HTTP requires a custom player and the injection of specific Flash Video metadata containing the exact starting position in bytes and timecode of each keyframe.

Using this specific information, a custom Flash Video player can request any part of the Flash Video file starting at a specified keyframe. For example, Google Video supports progressive download and can seek to any part of the video before buffering is complete, whereas YouTube cannot. The server-side part of this "HTTP pseudo-streaming" method is fairly simple to implement, for example in PHP, as an Apache HTTPD module, or a lighttpd module.

-  Streamed via RTMP to the Flash Player using the Flash Media Server (formerly called Flash Communication Server), VCS, ElectroServer, or the open source Red5 server. As of August 2007, there are three stream recorders available for this protocol, re-encoding screencast software excluded.