

Topic: Flash Specifications and Parameters for use with the Aavelin Digital Signage Player units

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Purpose

This document will give Aavelin users information on using Adobe Flash (.swf & .flv) files in conjunction with the Aavelin Digital Signage products. Topics that will be covered are inserting a .swf and .flv file into an Aavelin Composer project, current encoding parameters for flash video and limitations of the flash format.



Terminology

.swf: Adobe Flash File
.flv: Flash Video File

Introduction

Aavelin Composer software allows a user to insert Adobe Flash files into a project. Adobe flash is a great way to jazz up your digital signage messaging. Adobe Flash allows designers, animators, and video specialists to create and display some very captivating and exciting content. This includes animated text and graphics as well as full motion video encoded into flash video. The Adobe flash (.swf) file can be very small in dimension size all the way up to the highest resolutions available depending on what the user creates. The limitation with the .swf file is that the file has only 16,000 frames available. Flash video (.flv) was created to bypass the .swf limitation.

Getting Started

The current flash player installed in the Aavelin player is **Version 7**. Be sure to export your flash files into that version or lower. If you take video and encode it into flash (.swf) it's recommended that the file size is around 5-10Mb and at about 30 seconds of video. 12 fps to 30 fps will work just fine. Remember that the higher the frame rate, the larger the file size. This applies to Kbps for sampling rates during encoding.

Anything longer than that, it's best to create a flash video (.flv). Flash player 7 requires encoding based on the flashMX format. The typical or standard codec used for Flash version 7 is called Sorenson Spark. There are others, but the software MagicBox uses to convert video formats into flash video is called [Sorenson Squeeze 6 for Flash](#).

It uses the Sorenson Spark codec. Click [HERE](#) to access the quick reference guide on using Sorenson Media Software to convert video to flash. (If you choose to purchase the software)

Some Key Tips:

1. Full motion video converted to flash is very CPU intensive. If your project size for example is 1280x720, a flash video at that size will have trouble playing back smoothly if it's full motion video. This is because the unit has to render each frame at what is basically a 720p hi resolution output signal. Inserting a nice background with the video smaller in dimension size and centered will result in a smoother and more efficient playback. Of course users can do whatever they like. It's recommended to test the flash video that has been encoded with different dimensional sizes and encoding bit rates (data rates) to see what plays best for the type of video used.

Recommended Encoding Settings		
	Animation	Full Motion Video
Resolution	Any resolution	640 x 480 or smaller
Data Rate	N/A	768 Kbps or higher (quality increases with data rate as well as file size) NOTE: Data Rates of 3200-4000kbps will give your video excellent picture quality but large file sizes.
Frame Rate	12-24 fps depending on complexity of animation	12-30 fps depending on the video being encoded (higher frame rates for videos with a lot of motion)
Flash Version	Flash 7	Flash 7
Codec	N/A	Sorenson Spark (FlashMX Based)
Container .swf	N/A	Use if video is <u>NOT</u> embedded in .swf file.
Audio	Audio Formats: Embedded - .mp3, .wav, .wma Codec: MPEG Layer3, LAME MP3 Data Rate: 64 Kbps Sample Rate: 44100 Hz Channels: Mono/ Stereo	Audio Formats: .mp3, .wav, .wma Codec: MPEG Layer3, LAME MP3 Data Rate: 64 Kbps Sample Rate: 44100 Hz Channels: Mono/ Stereo

2. Using the .flv (flash video) format requires a ".swf container" file so the Aavelin knows where to place the flash video in the project as well as the path to where the .flv resides. The path can be a URL pointed to a webserver or you can point it to the local directory on the Aavelin where the .flv file will be placed. That local path is **/Work/Flash/yourflvnamehere.flv**

The .swf container file is simply a flash object that contains scripting which tells the flash object where the .flv video is located; basically a placeholder for the video. This would be somewhat similar to a Picture-in-Picture video frame. [Download Container.swf Templates](#) zipped up and includes the container files in 4:3 and 16:9 aspect ratios. They are created using Adobe Flash CS3 (.fla format.) The included "read me" file will help with the scripting.

3. Decide on if your flash object is going to be full screen in size or simply a flash object that is combined with other elements on the page. If full screen, create the flash object with the correct resolution. If you create a flash file and scale it to fit the screen you will have image quality issues as well as system performance issues due to the unit having to scale each frame of the flash file. This is very CPU intensive.

4. Watch the tutorial on [Using Flash Container .swf's](#) for your videos that have been encoded to flash (.flv). This is a great tool to help understand the relationship of the container.swf and flash video.

Inserting flash into your project

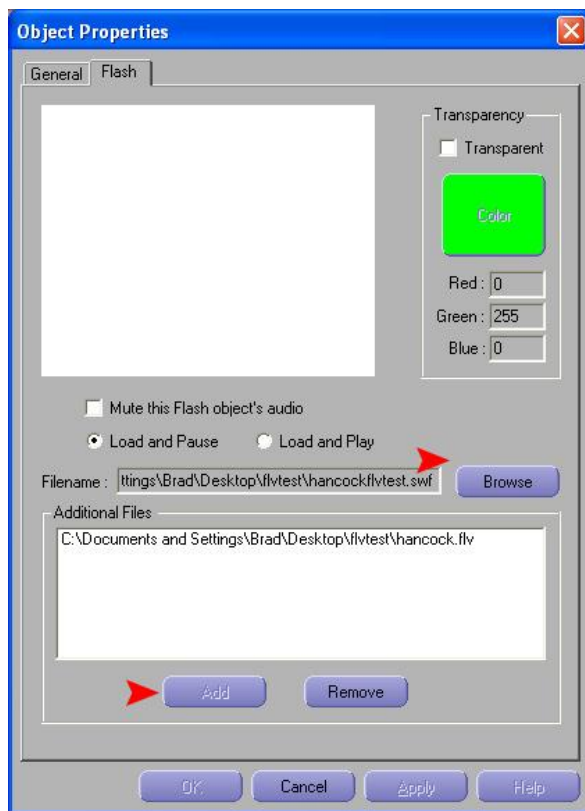
1. Once you have created a new project or opened an existing one, you can either create a new page to add your flash file into (select the **Append** page button and give the page a name), or open an existing page and insert your flash file there.

2. Now select the **Insert Flash** button on the left hand side of the page. (see IMG1)



IMG1

3. Browse your computer for the swf file you wish to insert. (See IMG2) Click **OK** when finished.



IMG2

NOTES:

The Load and Pause option is selected by default. This means that the flash object will be prepared to play or buffered before the page that contains the flash object is displayed. It will be paused and begin to play once the page begins.

The Load and Play option means that the flash object will be prepared to play or buffered before the page that contains the flash object is displayed and will start once it's ready regardless if the page has started or not. This option is good to use when you have a large flash file that requires longer buffering times which helps eliminate the pause if the page is being displayed but the flash object hasn't been completely buffered to play.

The Transparency option is available to users who wish to make the background or stage area of their

flash object invisible. If checked, the user can select the RGB color that was used as the stage background color when authoring the flash object. The background gets keyed out upon playback on the Aavelin unit. The user will not see the transparency within the Aavelin Composer software editing area.

If your flash file (.swf) has external files it references such as .flv files, .jpeg images, or .xml/.txt files, then the user would need to click the **Add** button and browse to those files to insert them to be published over to the Avelin unit. A good example of this method is when a user has a .swf container file that references an external .flv flash video file. (See IMG2)

4. Once you insert your .swf and or .flv file go to **Page Properties/ Scheduling** and double click the dwell time to set the time for the length of the flash file you are using. (See IMG3) The project default time is 15 seconds.



IMG3

3rd Party Links

SwishMax2 (Design and creation of Flash)

<http://www.swishzone.com/index.php?area=products&product=max&tab=overview>

Adobe Flash Professional (Design and authoring software)

<http://www.adobe.com/products/flash/?promoid=BPDEF>

Sorenson Squeeze 6 Pro for Flash (Convert video formats to flash)

<http://www.sorensonmedia.com/flash-video-encoding/>

(Sorenson also makes software that converts to other formats besides flash called Squeeze 6 Pro)

SwishVideo3 (Convert video formats to flash)

<http://www.swishzone.com/index.php?area=products&product=video>

TMPEGEnc 4.0 XPress (Convert video formats to other video formats)

<http://tmpgenc.pegasys-inc.com/en/product/te4xp.html>

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