MANAGANA

Getting Started

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creating for HTML5

Getting started with Managana
creating for HTML5

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With information from

http://www.managana.org

http://www.ciclope.art.br/ciclopeen

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CONTENTS

1 INTRODUCTION

1.1 About Managana

Managana is a free cross-platform software for digital publication based on imagination as interface. Created by the Ciclope Atelier, it allows the creation and maintenance of communities that share interactive content on the web, tablets, smartphones and exhibits. Each community has interactive streams composed of clusters of audiovisual, graphics, text and external feeds. Managana mixes and sequences playlists that can be created, displayed, and animated at the software itself.

Managana is made for the era of cloud computing, mobile devices and the panopticon: the Internet 3. The software, 100% free, published under the LGPL license version 3 of the Free Software Foundation, mixes and sequences media streams and their interaction with the main digital world platforms. It evolved from the software called Imagination Site, made by Ciclope Atelier, developed since 2002, having gone through five versions. The 6.0 software version was entirely re-written using free tools and baptized as Managana.

With roots in Sanskrit, the name Managana, composed of mana and gana, and present in the anthem of India, means “peoples minds”. The first verse of the anthem “Jana Gana Mana adhināyaka” is officially translated into English as: “Thou art the ruler of the minds of all people”.

You can check a small presentation video about Managana features at the software site: http://www.managana.org/versions/

1.2 Why use Managana

Managana will help you to develop any kind of audiovisual content for cross-platform environments without any knowledge on programming. In spite of this, Managana is not only for non-programmers. If you know a little of programming you also can make use of the scripts available for the software or implement your own. A note for hard programmers: Managana is also an open-source software that you can modify under the LGPL version 3 to develop tools for your own customers.

Contents generated by Managana run on projections, televisions, computer monitors, notebooks, tablets and smartphones, in various conditions and operating systems like Windows, Linux, MacOS, Android and iOS.

It works with immediate update online via a graphical editor and through the integration of Twitter, Facebook, WordPress and RSS feeds. Managana not only imports content from places as also shares information on G+, Facebook and Twitter. Interactions with mouse, touchscreen, remote controls using tablets and smartphones, joysticks, Microsoft Kinect and various sensors are in its design.

Managana allows editing online via web. The content editing module allows dynamic editing, in draft, pending, and published. Access and modification management through administrators, editors, authors and communities is also implemented. Easy to translate, made in an open format and file structure, it allows third parties to include new features.

1.3 HTML5

Until version 1.5.0 Managana relied on the Adobe Flash Player (http://en.wikipedia.org/wiki/Flash_player) for content display on web browsers. The Flash player is a reliable and freeware software that provides advanced features. However it is not available on many platforms, specially on mobile devices. Until now Managana creators had the option of creating applications to take their content to these systems. Starting on version 1.6.0 another option is available for them: the HTML5 player.

The HTML5 version of the player works together with the Flash one. First, Managana tries to locate and use Flash. If it is not found, the HTML5 is automatically started. Due to technology limitations some Managana features are not yet available for HTML5, like login, commenting, rating or the remote control.

Only the player is currently available on HTML5. Content creators still need the Flash Player on their browsers for the Managana editor to run.

This document provides useful information about creating content that will be seen using HTML5. Since there are various browser implementations among several systems, issues like speen, file formats and so on must be taken into account.

If you are looking for a starter guide to Managana creation, check the *Getting started with Managana: creating for web and mobile devices* found on the downloads section of www.managana.org. The site also provides other reference documents: *Getting started with Managana: advanced tips* for the brave creators and *Getting started with Managana: it's showtime!* For digital artists interested on public exhibitions and projections.

2 TECH TALK

The HTML5 specification introduced a new element to the HTML: the *canvas* (*http://en.wikipedia.org/wiki/Html5_canvas*). The canvas is an area for raw drawing that can receive highly-interactive content by the usage of Javascript and CSS. Together with audio and video support, the canvas element is responsible for the Managana player version that runs on HTML5 capable browsers.

Unlike the Flash Player, there are many browsers that run in different ways on several platforms. This very nature makes the Managana HTML5 player less reliable than the Flash one. However, if you take this in consideration you can create content that can run well on HTML5 on many devices. The goal of the current document is to provide you tips about adapting your content to this reality.

2.1 Various browsers and platforms

The Managana HTML5 player was tested on several browsers and systems to make sure it runs well on the most used ones. The platforms tested were:

- Android – Jelly Bean
- FirefoxOS – Boot2Gecko 1.1.0.0
- iOS – version 6.1
- OSX (Mac) – Snow Leopard (10.6)
- Ubuntu Linux – version 13.04
- Windows – Vista/7/8, phone 8, RT

Most of these platforms let you choose the browser to use, so a more accurate compatibility list, based on browsers, is:

- Android browser: requires Jelly Bean version (won't work on Ice Cream Sandwich, Honeycomb or Gingerbread)

- Apple Safari: works using the latest version on all supported devices – particularly won't work on iOS devices with versions 5.x and below

- Google Chrome: works on every platform except iOS tested using the latest version

- Microsoft Internet Explorer: at least version 9 required

- Mozilla Firefox: works on every platform tested using the latest version

- Opera: works on desktop versions, not the mobile ones

2.2 The CreateJS suite and source code

The HTML5 canvas provides many tools for web content creation but it can be hard to manage. One option available for developers is the usage of Javascript libraries to make this handling easier. The *CreateJS suite* (http://www.createjs.com) is an option for that,

Distributed under a free license (MIT), CreateJS provides an easy-to-use display list implementation that is the basis for the Managana images.

As the Flash version, the Managana HTML5 player is free software licensed under the LGPL version 3. The full javascript source code can be downloaded from the http://www.managana.org website. The CreateJS sources can be downloaded from Github: https://github.com/CreateJS/

2.3 DIS folder: the key to other player implementations

Managana creations are stored into DIS folders for publishing. DIS means **D**igital **I**magination **S**et and, like the Managana itself, is free – a free "file" format. Based on a set of simple XML files (intentionally simple to make them human-readable) and media files, the DIS folders were created to let other developers create their own alternatives to the Managana player, based – or not – on the original software code.

The HTML5 player is only possible because of this approach: it was created from scratch in Javascript to access DIS content. Any other language can also be used to create a player capable of reading and displaying a DIS folder, independent from Managana.

2.4 HTML5 limitations

The Flash version of the Managana player is a mature project with much more testing then the HTML5 one. This, and also the lack of support for some functionality among browsers, imposes some limitations to the Managana HTML5 player that will eventually be overcome in time.

First, the HTML5 player don't support user login yet. This means that some features that depend on it like commenting and rating are not available. The user variable saving is also limited by this: the values are always saved for all browser users, not for individuals, and always locally – they can't be synchronized to the server. Community values works just like on Flash, always saving in server.

The full screen button will not work on some browsers, like the Microsoft Internet Explorer. There is also no sound muting, zoom and notes/bookmark support. Some browsers, specially mobile ones, provide zooming and full screen natively. You can use these native features in Managana if they are available.

Another major difference is the 3-dimensional stage area supported by the Flash player version. The HTML5 Managana player does not support setting rotation on X and Y axis (Z works as expected). Also, setting an instance Z position will only affect the display order, not the Z position on space.

2.5 Computers vs. mobiles

Mobile devices are very limited compared to desktop computers, notebooks and even netbooks. These limitations can be imposed by processor speeds, battery energy savings and mobile web access bills among others. This reflects on the mobile browser designs for all vendors and is considered by Managana HTML5 player.

While running on a desktop computer, the Managana HTML5 player tries to mimic the Flash version one as much as it can, providing full video and audio playback as ment by the content creator.

On mobile devices, however, to save battery and bandwidth, video and audio content is not automatically played: it must be started by the user. For video, a thumbnail can be presented for the user to click on it. For audio, a small player appears close to the screen edge so the user can decide to play it or not.

3 MEDIA FILE HANDLING

While working on Flash Player, creators can be sure to have support for some media files guaranteed. For HTML5, on the other hand, things are not so simple. Each browser has its own supported media file formats that can even change according to the platform they are running on.

In order to enable consistent content among browsers, Managana provides support for various file formats. It switches among them when necessary. The content producer, however, must supply a single media content in various formats for this feature work as expected.

There are various file converters available for free over the web. One of them that works for both audio and video is the Miro Video Converter, a free, open source alternative: http://www.mirovideoconverter.com/ Another classic option is the Mplayer (and its counterpart, MEncoder): http://www.mplayerhq.hu For graphics there are many free options available like the Gimp (http://www.gimp.org/) and Inkscape (http://inkscape.org/). For audio only, the Audacity software (http://audacity.sourceforge.net/) is great.

When uploading media files for your content you have the option to send files on many formats. If you send files with the very same name, changing only the extension, Managana automatically adds them to its options on playback. For example, if you use a video file named myvideo**.flv** and also upload the myvideo**.mp4** and myvideo**.webm** files to the same folder, Managana will probably be able to play it using the Flash player (flv version), and also using HTML5 on many browsers: Internet Explorer and Safari (mp4 extension), Chrome and Firefox (wemb extension). If an alternative file is not found, Managana just ignores it.

Always save your files with lowercase-only extensions for the Managana HTML5 file switching work as expected.

3.2 Video

FLV is the standard file format for Flash content and is the preferred one for Managana. Although Flash also handles MP4 files, this file format is not supported on Managana mobile apps running on iOS (iPad/iPhone/iPod touch), meaning FLV is still the best choice.

FLV, however, is not supported by any of the major browsers, so if you want your content to have video, you must supply alternatives. Managana player on HTML5 can play these ones:

1. MP4

2. WEBM

3. OGV (theora)

When you add a FLV video to your media files, be sure to also upload a MP4 version of it, at least, and a WEBM one to make sure it will work among various platforms/browsers.

P.S. The video file names must be exactly the same as the original one, changing only the file extension that must be "mp4", "webm" and "ogv".

P.S.2 Alternative video files must be uploaded to the very same folder you sent the original one. You can use the "add video" window, the Managana file manager or any other method for it.

P.S.3 Always use lowercase-only file extensions for the switching work as expected.

Mobile browsers will not start the video playback automatically. They will try to show a thumbnail of your video and let the user click on it if he/she wants it to play. You will need to provide a thumbnail file for this feature to work. It must have the exact name of the video file with a png (lowercase) extension. Also, the thumbnail picture file must be save on the same folder as the video one (not on the pictures folder of your creation). If your content flow depends on the video time it will not break because of the thumbnail: Managana uses the playlist element time (set on the element properties) as the thumb time.

> *P.S. The free Miro Video Converter tool (http://www.mirovideoconverter.com/) can produce PNG thumbnails automatically when it encodes your video files to MP4 or WEBM.*

Managana HTML5 also supports video subtitles, just like the Flash version. You must make sure, however, that the .srt file is encoded as UTF-8 text for special chars appear as expected.

3.2.1 Video pixel size

The Adobe Flash Player always plays video considering that they were encoded with square pixels (1×1 proportion). This is also true for most browsers while they play HTML5 video, except for Firefox. The Mozilla browser respects the original video pixel proportion and displays it accordingly. This may lead to unexpected results on Managana HTML5 player since there is no way to check the video pixel proportion at runtime. The best workaround for this situation is to always encode your video files using square pixels, even if the original recording was made on different conditions (like widescreen aspect).

3.3 Audio

Managana supports MP3 audio files by default. For the HTML5 version the options are OGG (vorbis), WEBM and WAVE. To make sure your audio content can be listened by anyone, include at least an OGG version of it to your creation.

> *P.S. The audio file names must be exactly the same as the original one, changing only the file extension that must be "ogg", "webm" and "wav".*

> *P.S.2 Alternative audio files must be uploaded to the very same*

folder you sent the original one. You can use the "add audio" window, the Managana file manager or any other method for it.

P.S.3 Always use lowercase-only file extensions for the switching work as expected.

On mobile browsers Managana open a small player at the lower left corner so the user can start the audio by himself/herself.

3.4 Picture

The picture file support is basically the same on Flash and HTML5 versions of the Managana player. The main difference is about vector files. While on Flash you had to use SWF files for vector content, for HTML5 you must provide a SVG counterpart. Notice that, unlike SWF, SVG files do not support animations.

There are also other issues about SVG files:

- graphic transformations (alpha and color gain) are still not supported for SVG files;
- currently, the Firefox web browser always create a cached bitmap version of the SVG file to display, this means they may look different, with not-so-sharp edges while running on it.

4 TEXT

Text works in very different ways on Flash and HTML5, even with some not-so-happy surprises. When creating using Managana you must consider these differences if you intend to deliver your content for both technologies.

Both Flash and HTML5 Managana player versions support the artistic and the paragraph text types, however – this may sound surprising –, the HTML5 player won't render HTML-formatted text(!). When it finds any formatted text, the HTML5 player removes all marks and render as plain text, respecting the instance text settings (font, color, size and so on).

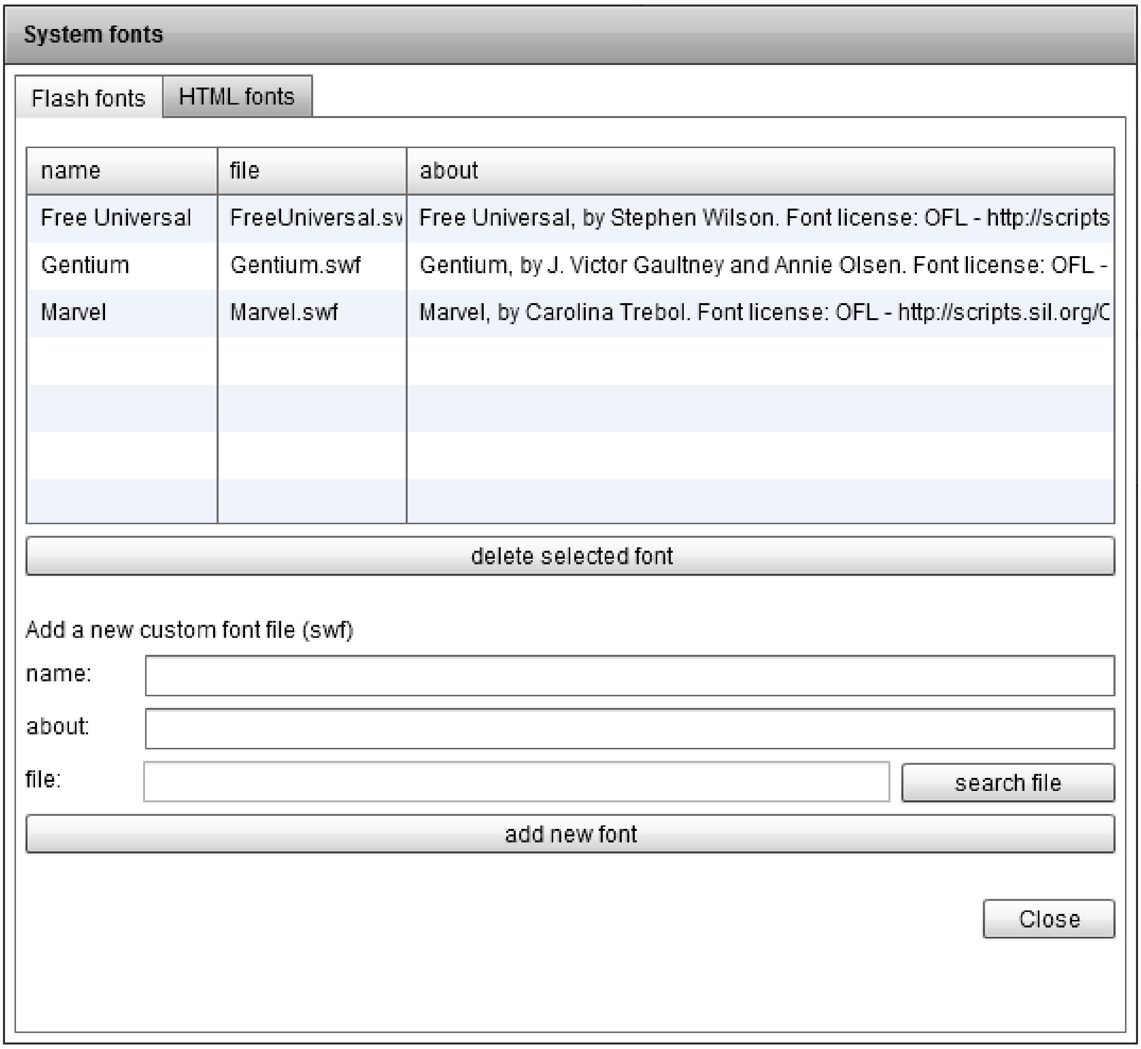
This also means that css styles and classes have no effect on HTML5. This is specially an issue when you work with external feeds for text, like the Managana WordPress plugin.

4.1 Fonts

Font handling is a common issue for all content developers. HTML5 provides an easy way to solve this issue, but Flash don't, so you'll need to take extra care when working with Managana.

> *P.S. Managana offers an initial font set (all of them free) that fulfill the needs of most users, so you may need not to worry about font handling. There are serif, sans-serif and mono-spaced fonts already built into the software.*

The Managana editor is a Flash application – this means you'll need to make any extra fonts available to it even you intend to deploy your creation only on HTML5. Currently the only way is to save your font file as SWF using the “FontAsset” project available on the Managana source code. Once you have the SWF font file, you can access the “Configuration > Fonts...” menu from the editor to upload them.

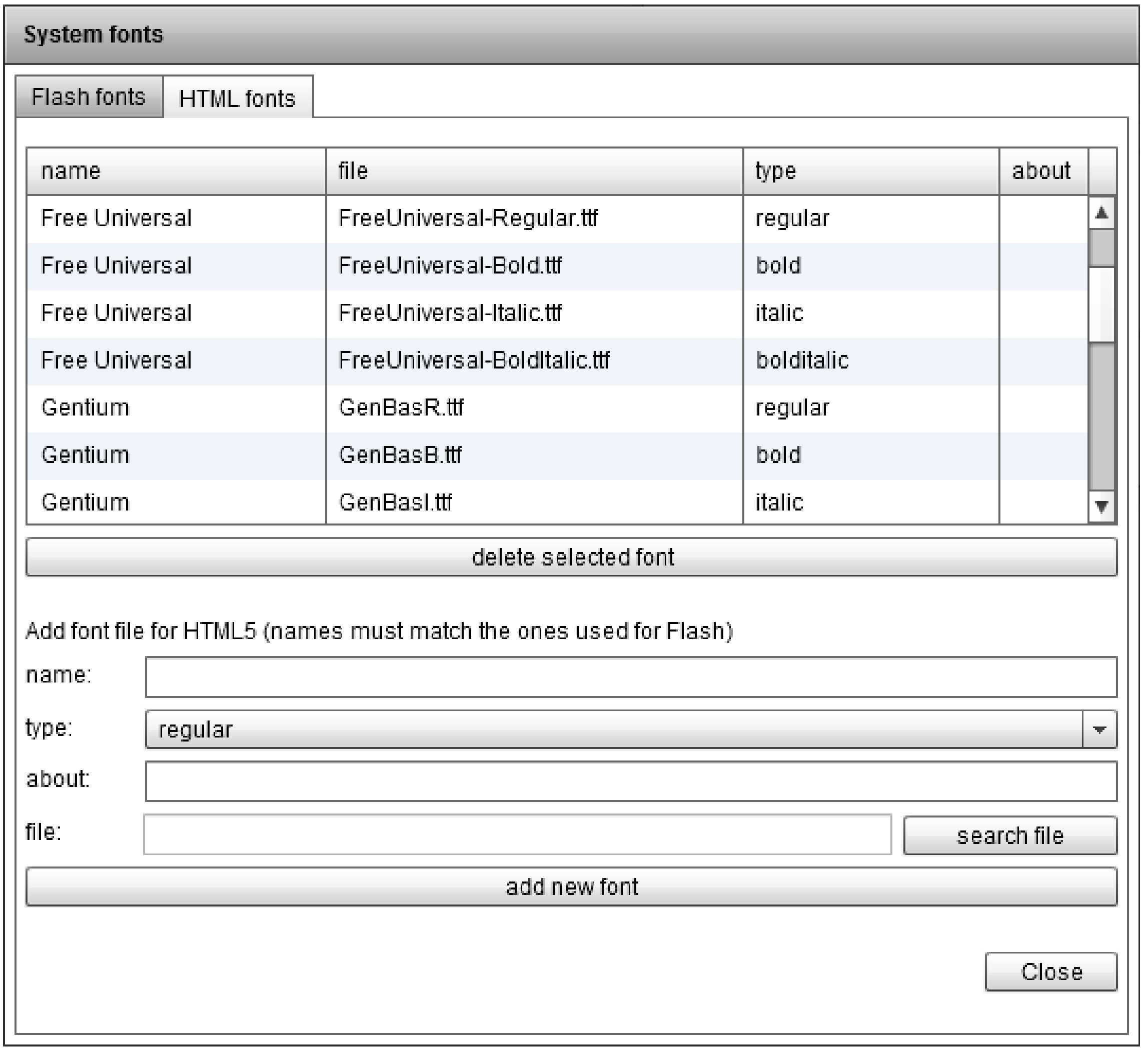


name	file	about
Free Universal	FreeUniversal.sv	Free Universal, by Stephen Wilson. Font license: OFL - http://scripts
Gentium	Gentium.swf	Gentium, by J. Victor Gaultney and Annie Olsen. Font license: OFL -
Marvel	Marvel.swf	Marvel, by Carolina Trebol. Font license: OFL - http://scripts.sil.org/C

The *System fonts* manager comes with two tabs: one for Flash fonts and one for HTML. At the Flash tab you can send your SWF files with fonts embed. They will be automatically loaded on the editor and on the Flash version of the Managana player.

> *P.S. Remember that adding too many fonts can increase a lot the initial download size of the Managana player.*

When a font is available for the Flash version you'll need to add it to the HTML list as well so your content can be correctly seen on the HTML5 player. Check ou the HTML tab of the *System fonts* manager:



name	file	type	about
Free Universal	FreeUniversal-Regular.ttf	regular	
Free Universal	FreeUniversal-Bold.ttf	bold	
Free Universal	FreeUniversal-Italic.ttf	italic	
Free Universal	FreeUniversal-BoldItalic.ttf	bolditalic	
Gentium	GenBasR.ttf	regular	
Gentium	GenBasB.ttf	bold	
Gentium	GenBasI.ttf	italic	

Add font file for HTML5 (names must match the ones used for Flash)

name:

type: regular

about:

file:

For HTML5 you can use standard TrueType and OpenType fonts. Remember that:

- you must name the font using the exact name you used for the Flash version so it can be correctly recognized by the Managana player;

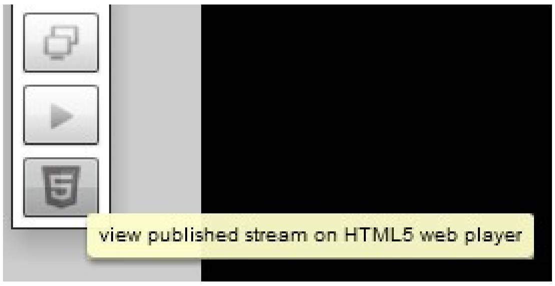
- you'll need to add all font variation type files (bold, italic, bold+italic) if you use them on your creations;

- fonts increase the initial download size (some can add a lot of time to the loading time) – remove the fonts/variations you're not using to improve user experience.

5 TESTING AND ACCESSING HTML5 CONTENT

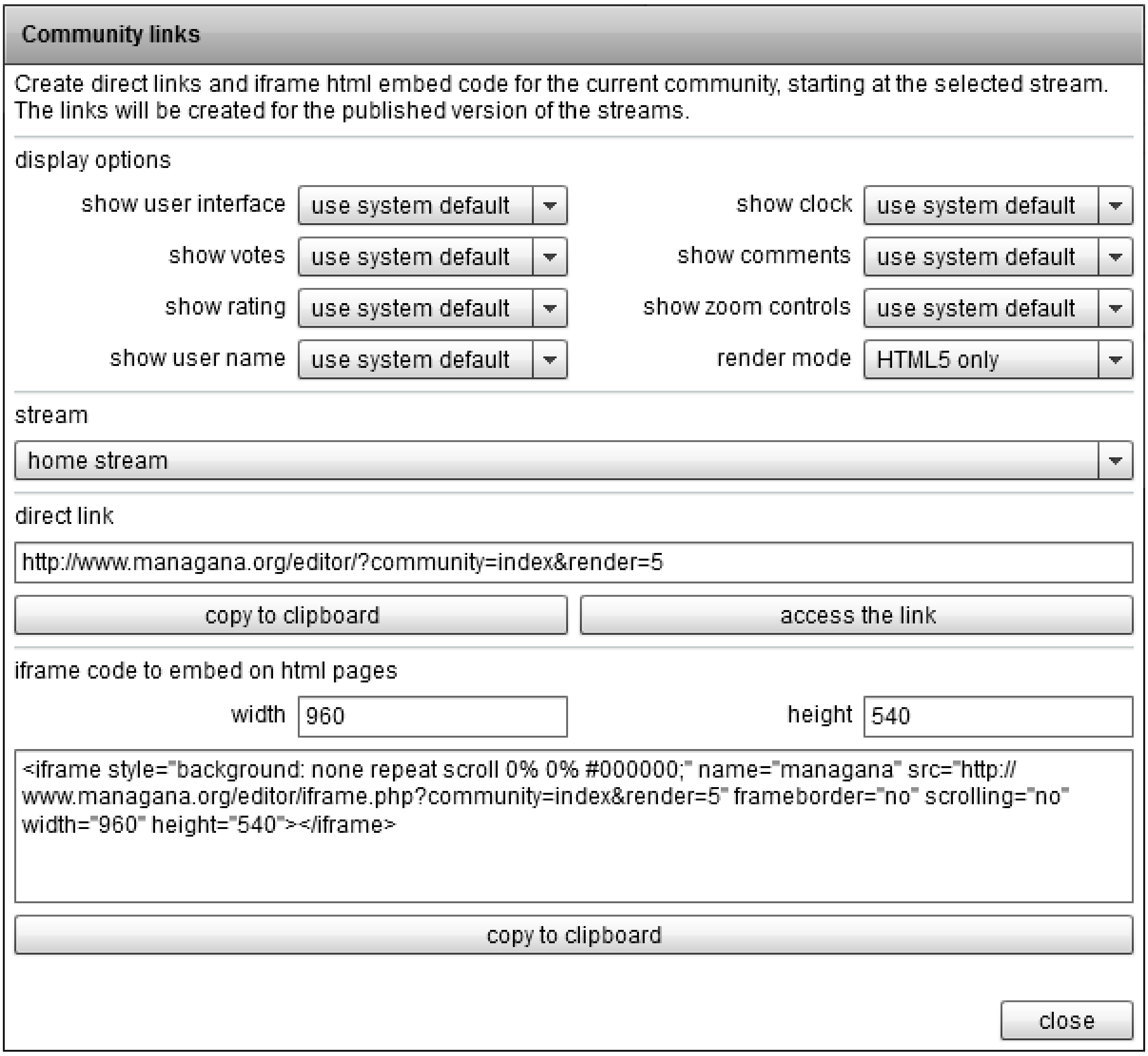
While you are creating your content using the Managana editor, the internal testing player is based on the Flash version. Also, the original published test button at the tools window will bring you the Flash version of the Managana player.

If you want to check how your creation looks like on the HTML5 player, look for the "view published stream on HTML5 web player" button, the last one of the tools window:



The default behavior of the Managana player is to first check for Flash and then use HTML5 if it is not found. You can, however, change this by adding the "render=5" variable to your URL. To make this simple, you can access the "Community > Links..." menu, choose the "HTML5 only" render mode and copy the URL for direct access or the iframe code to embed on your site.

The HTML5 Managana player may also be more sensitive to text encodings. If your content is not being played correctly on some browsers, try to re-plublish all your streams. You can do this easily by accessing the "Community > Re-publish streams..." menu.



Community links

Create direct links and iframe html embed code for the current community, starting at the selected stream. The links will be created for the published version of the streams.

display options

show user interface: use system default

show clock: use system default

show votes: use system default

show comments: use system default

show rating: use system default

show zoom controls: use system default

show user name: use system default

render mode: HTML5 only

stream

home stream

direct link

```
http://www.managana.org/editor/?community=index&render=5
```

iframe code to embed on html pages

width: 960

height: 540

```
<iframe style="background: none repeat scroll 0% 0% #000000;" name="managana" src="http://
www.managana.org/editor/iframe.php?community=index&render=5" frameborder="no" scrolling="no"
width="960" height="540"></iframe>
```