Linterna Mágica

A userscript for watching web video clips without the proprietary flash technology.

Watch video on the web in a brand new way: "You don't need a glint, the magic lantern is ignited!"

by Ivaylo Valkov and Anton Katsarov

This manual (updated 20 February 2014) is for Linterna Mágica (version 1.20), a userscript for watching web video clips inside a browser without the proprietary flash technology.

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1 Introduction to Linterna Mágica

1.1 What is Linterna Mágica?

Linterna Mágica is "tiny" (at least it started that way) script written in JavaScript for the Greasemonkey extension. It searches web pages for flash objects with links to video clips and replaces them with <object> tag that is playable by browser video plugin. The program is named after an early version of a projection apparatus.

1.2 Why it exists?

The short answer: I had spare time and was curious is it going to work.
The long answer: Free software flash plugins like Gnash and Swfdec do not work well with video flash players on every site. On top of that:

- Even with free software plugin you run a lot of proprietary software as ActionScript
- Even the free software plugins use too much resources
- Flash is proprietary technology
- Flash is not a web standard
- Most of the flash objects in a page contain useless stuff

Playback of video clips in a browser is technically possible since the existence of the <object> tag (around 1999; maybe even before that?!). To watch a video inside a browser the user always needs a plugin (HTML5 changes that a bit). Why it should be flash plugin?

Most of the time I do not have Gnash or Swfdec installed. I do not care about flash except, sometimes for video clips. I got tired of using Bash/Perl/Python... scripts to download video clips and watch them. Linterna Mágica was born.

1.3 Who made it?

Original idea and programming by Ivaylo Valkov.
Interface design by Anton Katsarov.

1.4 How to pronounce Linterna Mágica?

The name Linterna Mágica is in Spanish. The pronunciation in IPA is /lɪnt'ɛrna max'ika/ . You can also find the answer to that question by playing the Ogg Vorbis file '`linterna mágica - pronounce.ogg`' located in the '`data`' directory.

2 Installation and building

2.1 Building the userscript

Since version 0.0.9 of Linterna Mágica the userscript have to be build, if you have downloaded the source code tarball. If you do not want to build the script, visit Linterna Mágica's web site and download the compiled version of the script, which is ready for installation. To build the userscript you will need the following packages:

'`GNU make`'

'`GNU sed`'

'`GNU grep`'

'`GNU bash`'

'`GNU Coreutils`'
: `ls`, `cp`, `rm`, `cat`, `tac`, `head`, `tail`, `cut`, `tr`, `sort`, `uniq`, `base64`, `basename`, `mktemp`, `test`, `echo`, `chmod`

To build the userscript, inside a terminal change the directory to the source code directory of Linterna Mágica and type:

'`make`'

If everything went fine, at the end of the building process you should see the following message:

```
linternamagica.user.js is ready.
```

To remove all the generated files without the userscript, type:

'`make clean`'

To remove all the generated files and the userscript file, type:

'`make distclean`'

2.2 Installation

First of all install the userscript extension for your browser and activate it. For Epiphany it is part of the Epiphany-extensions package. For GNU IceCat, Abrowser and other versions of Firefox see the Greasemonkey and/or the Scriptish web pages. For Chromium see the Tampermonkey website.

Probably these extensions are available in your GNU/Linux distribution as a package.

Second, install the video plugin that you prefer.

If you have downloaded version of the userscript compressed with gzip or bzip2, decompress it to get a copy of the file ready for installation.

2.2.1 Installation from browser

Load the path where you downloaded Linterna Mágica in your browser:

'`file:///home/user/linterna-magica/`'

You can also start it from a terminal:

'`epiphany file:///home/user/linterna-magica/`'

or

'`abrowser file:///home/user/linterna-magica/`'

or

'`icecat file:///home/user/linterna-magica/`'

'`iceape file:///home/user/linterna-magica/`'

Right-click the user script and from the menu select

For Epiphany
: "Install userscript"

For GNU IceCat and other free software versions of Firefox
: "View User Script Source". In the new window click the Greasemonkey "Install" button. If you are using Scriptish, choose "Install User Script".

For Midori
: For Midori version 0.3.0 and above select "Open Link in Bew Tab". In the new tab click "Install user script" button. Versions before 0.3.0 do not support instala do not support installation of userscripts from the browser.

For Iceape (and other versions of Seamonkey)
: "Install User Script"

2.2.2 Installation from terminal

Another option to install the userscript is to copy it from a terminal. The paths in the examples bellow might be different in your configuration and setup.

For Epiphany:

```
'cp linternamagica.user.js \
~/.gnome2/epiphany/extensions/data/greasemonkey/linterna_magica.user.js'
```

For GNU IceCat:

```
'mkdir ~/.gnuzilla/icecat/profile/gm_scripts/linterna_magica/'
'cp linternamagica.user.js \
~/.gnuzilla/icecat/profile/gm_scripts/linterna_magica/linterna_magica.user.js'
```

For other free software versions of Firefox:

```
‘mkdir ~/.mozilla/firefox/profile/gm_scripts/linterna_magica/’
‘cp linternamagica.user.js \
~/.mozilla/firefox/profile/gm_scripts/linterna_magica/linterna_magica.user.js’
```

For Midori:

```
‘mkdir ~/.local/share/midori/scripts/’
‘cp linternamagica.user.js \
~/.local/share/midori/scripts/linterna_magica.user.js’
```

For Iceape (and other versions of Seamonkey):

Iceape works only with Scriptish for which there is no easy way to install scripts from a terminal. The scripts are located in

```
‘~/.mozila/seamonkey/profile/scriptsh_scripts’
```

but for every installed script there is a definition needed in the file

```
‘~/.mozila/seamonkey/profile/scriptsh_scripts/scriptish-config.json’
```

which does not seem simple enough to be done by hand.

3 Configuration

Linterna Mágica has some configuration options. The only way (for now) to configure it, is to edit the code of the userscript.

3.1 Configuration options

To change the configuration of Linterna Mágica open the userscript file and look for `var linterna_magica_options`. This is a JavaScript object that keeps configuration options in "option":"value" format:

```
var linterna_magica_options =
{
   "debug": 0,
   "log_to": "web",
   "web_log_expand": false,
   "updates": "1w",
   "priority": "self",
   "manual_run": "on",
   "skip_manual_run":
    [
      "youtube.com",
      "vimeo.com",
      "dailymotion.com",
    ],
   "autostart": "off",
   "controls": "self",
   "locale": "auto",
   "cookies": "restore",
   "wait_xhr": "off",
   "quality": "low",
   "format": "mp4"
};
```

Since version 0.0.10 it is possible to keep your configuration in separate userscript file. This way your preferences will stay intact when new version is installed. The userscript with your configuration must have special structure. If you want this feature, install the file '`linternamagica_user_condfig.user.js`' from the '`utilities`' directory. To change the configuration look for `var linterna_magica_user_config`. The format is the same as for the main userscript file. Have in mind that this file is not going to be updated and you will have to add manually new options implemented in future versions, if you don't like the default ones. If an option is missing in this file, the default one provided by the main userscript will be used.

Available options are:

'`debug`' This option sets the debug level. The debug information is printed in the console.

- '`0`' Do not print anything (default)
- '`1..5`' Print debug information

'`log_to`' Where to print the debugging information when debug is not zero.

- '`web`' Print messages in the web page (default)
- '`console`' Use the debugging console of the browser

'`web_log_expand`'
Should the web logger be automatically expanded by default

'false' No (default)

'true' Yes

'updates' Should Linterna Mágica automatically check and notify for updates. See Section 3.2 [Automatic check for updates], page 7.

'<time><type>'
Check at interval. (default 1w)

'<time>' positive integer

'<type>' d/w/m/y

'd/w/m/y' d = day, w = week, m = month, y = year

'off'

'disabled'
'no'

'never'

'false'

'0' Do not check

'priority'
This options determines if Linterna Mágica should replace HTML5 players. The default value is "self".

'self' Replace HTML5 players

'html5' Use HTML5 player if the site provides one. A button next to the player switches to Linterna Mágica.

'manual_run'
How the processing of the page should be done.

'on/enable/yes/true/1'
A button is present to manually start Linterna Mágica. (default)

'off/disable/false/no/0'
Automatically start the processing when the page is loaded

'skip_manual_run'
List of websites where Linterna Mágica should start automatically. Default list:

```
[
  "youtube.com",
  "vimeo.com",
  "dailymotion.com",
],
```

'autostart'
Auto start playback. If more than one object is found, only the first one will start playback.

'on/enabled/true'
Auto start the clip (default)

'off/disabled/false'
Do not start the clip

'controls'
: Buttons for controlling the video

  'self' Use controls provided by Linterna Mágica (default)

  'plugin' Use controls provided by the video plugin.

'locale' Interface language

  'auto' Use the language of the browser interface if translation is available (default)

  '<lc>_<CC>'
  : Set language to lc_CC, where

    '<lc>' language code (lowercase)

    '<CC>' country code (uppercase) Example: en_US, en_UK, bg_BG

'cookies' The way cookies are processed. See Section 3.3 [Disadvantages of the cookies hack], page 8.

  'delete' Just delete the cookies.

  'restore' Extract and restore cookies.

'wait_xhr'
: Timeout before background processing (XHR) starts in milliseconds. 1 s = 1000 ms. If you have problems increase the value. See Section 3.4 [Timed-out background requests], page 8.

  'off/no/disabled/false/0'
  : Don't wait (default)

  '<integer>'
  : Wait for <integer> milliseconds.

'quality' Preferred video quality.

  'low/medium/high'
  : Auto-select a link for low/medium/high from the list of links (default low)

  '<number>'
  : Start the <number> link from the list. If not available the highest quality. Use "1" for lowest quality.

  '<number>%'
  : Start the link that equals to <number>% in the list. Fractions are accepted - 34.56%, 18,6%.

'format' Preferred video format.

  'webm/mp4/flv/3gp/h264'
  : Auto-select the video format from the list of links (default mp4)

3.2 Automatic check for updates

Linterna Mágica checks for updates every time the configured interval is reached and at the first and second day after the exact match.

3.3 Disadvantages of the cookies hack

A weird hack to get data from YouTube and Dailymotion without cookies is used. With cookies the video link data is garbage for Linterna Mágica. Since version 0.0.11, the hack is not needed for YouTube, and it is not used.

First the cookies are removed by setting their expiration dates in the past. A request on the background (XMLHttpRequest) for the video page (for example watch?v=x) is made. The required data is extracted and the replacement video object is created. Cookies values can be saved before the request and restored later, but not their original expiration dates. Restored cookies will expire when the browser is closed. This hack might break login/favourites/recently watched and other features for sites supported this way. The browser will automatically set new values to some of the cookies with the background request.

3.4 Timed-out background requests

For Dailymotion you could use a timeout option. During the first tests of this fix there were some problems if the background request was made too soon. It seemed that not all cookies were set by the site and cleared by Linterna Mágica before the request. Later everything worked without timeout. If you have problems with Dailymotion increase the value for the "wait_xhr" option.

The wait_xhr option is effective for every site that is supported with background requests.

3.5 Localisation

In version 0.0.10 translations were split from the main userscript. Every localisation was a separate userscript with special structure. In version 0.0.11 userscript files are automatically generated form PO files. If there is translation for your language and you want to use it, you will have to build and install it. Compiled userscripts are also available at Linterna Mágica website.

By default Linterna Mágica tries to use the language of the browser interface if available. You could also set a custom locale by the "locale" config option.

To build all the localisation userscripts in the top source directory type:

'`make locales`'

You could also build the scripts from the '`po`' directory:

'`cd po`'
'`make`'

Compilation of userscript for single language is possible. To do so, type:

'`cd po`'
'`make linternamagica_l10n_`*`langcode`*`.user.js`'

Replace *langcode* in the example above with the code of the desired supported language.

3.6 Stop execution on every site

By default Linterna Mágica will run on every site. This is something that you might not like. You can configure it to run only on some pages. Open the source file and look for `// @include http://*`. Remove this and place the same statement for every site you wish to use Linterna Mágica with:

```
// @include http://example.org
// @include http://example2.org
...
// @include http://exampleN.org
```

4 What is supported?

Linterna Mágica explicitly supports only free software browsers and plugins.

4.1 Supported extensions

The current versions of Linterna Mágica is tested and kept up to date with the following user-script extensions and implementations:

Greasemonkey
: http://greasespot.net

Scriptish
: http://scriptish.org/

Tampermonkey
: http://tampermonkey.net/

Epiphany
: Internal browser userscript implementation

Midori
: Internal browser userscript implementation

4.2 Supported browsers

In this release (1.20) Linterna Mágica is tested and kept up to date with the following browsers:

Epiphany
: Epiphany versions older than 2.30 might have problems with Greasemonkey.

Free software versions of Firefox
: Free software versions of Firefox that support the Greasemonkey extension should work. Only GNU IceCat, Web Browser/ABrowser and Iceweasel are tested.

Midori

Chromium
: Chromium is free software version of Google Chrome. Have in mind that this version has copyright issues and might not be entirely free software as well.

4.3 Supported plugins

Supported video plugins that can handle "video/flv" and "video/mp4" should work right away. Some plugins provide an API which is used in Linterna Mágica to support web controls, but this will require modifications to the code, if the plugin is not listed as supported. There is a configuration option to switch between controls provided by the plugin and Linterna Mágica.

These plugins are known to work:

Totem plugin
: Versions older and equal to 2.30 does not have full API support for web controls. Newer versions of Totem have been patched and should work.

VLC plugin
: No known problems.

gecko-mediaplayer plugin
: Note: Have in mind that gecko-mediaplayer depends on mplayer for playback. Mplayer is free software by itself, but it can load and recommends binary only codecs. The completely free (as in freedom) distribution of GNU/Linux, Trisquel provides clean version of mplayer.

Xine plugin
: No known problems.

4.4 Supported websites

Linterna Mágica is programmed in such a way that it might work (and it does) with web sites not specifically tested and supported. This is achieved by regular expressions, patterns and similarities between video sharing and posting sites. The main idea is that very little should be needed to support a new site - few changes in a regular expression, adding an address from where the clip should be extracted and so on.

There are more than 30 web sites, found with random web searches that are known to work. See the '`WEBSITES`' file for all known working sites and more information.

4.5 Not supported

Web sites that use RTMP to transfer clips **do not** work.

Web sites that use clips and players from remote site **do not** work. For example YouTube video placed in a blog or a news article. Since version 0.0.9 some remote objects are detected and a link to the web page of the video is provided.

Linterna Mágica is not working with specific browser or plugin or operating system. Is it possible to support it?

Only free software will be supported. Explicit support for non-free software will not be provided. If Linterna Mágica is working with non-free software you must be very "lucky". Yes, that is sarcasm!

5 Bugs

If you encounter bugs, or have suggestions of any kind, please report them at Linterna Mágica project page at Savannah https://savannah.nongnu.org/bugs/?group=linterna-magica. Use the “Bugs“ tracker, the “Tech Support Manager”/”Support” is now deprecated.

Appendix A Copying this manual

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Version 3, 29 June 2007

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