

Xjadeo - X Jack Video Monitor



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Abstract

Xjadeo is a software video player that displays a video-clip in sync with an external time source (MTC, LTC, JACK-transport).

Xjadeo is useful in soundtrack composition, video monitoring or any task that requires to synchronizing movie frames with audio events.

Xjadeo supports a multitude of video file formats, display libraries and sync sources. It includes an optional GUI called qjadeo that provides setup options, file history, video import/transcoding and control of Xjadeo's run-time parameters.

Primarily developed for the GNU/Linux operating system, there are also binaries available for Win32 and OSX.

Quick access links: [SF-Project Page](#) [Download](#) [Source-Code](#) [This manual as PDF](#)

1 About

1.1 FEATURES

Xjadeo - video Monitor

- Display: full-screen or windowed mode, letterbox, timecode on-screen-display.
 - XV/X11 (hardware accelerated)
 - imlib2/X11
 - SDL (hardware accelerated - win32)
 - carbon/quartz (hardware accelerated - OSX)
- Video decoding via **FFMPEG**; Xjadeo supports a multitude of file-formats and video codecs.
- Sync sources:
 - **JACK transport mechanism**.
 - **MTC** using either ALSA-MIDI , JACK-MIDI or portmidi.
 - **LTC** using JACK-audio
- frame-accurate: tested with 23.976, 24, 24.976, 25, 29.97df, 30, 59.94 and 60 fps video-files.
- Timecode conversion and offset calculation.
- Remote-control interface allows you to query and modify all settings and parameters of a running instance.
 - OSC - **Opensoundcontrol**
 - Standard I/O
 - POSIX real-time message queues (MQ)
 - System-V IPC
- Optional Qt Graphical User interface to control Xjadeo.

1.2 LICENSE

Xjadeo is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

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2 Build and Install Instructions

2.1 System Requirements

Xjadeo is currently known to work on GNU/Linux, *BSD, Win32 and Mac OSX. There are no special hardware requirements.

2.2 Binaries

If you are using a "major" GNU/Linux distribution (Debian, Fedora, Ubuntu, SuSe, Gentoo, Slackware, etc.), you can acquire Xjadeo directly from your distribution. It can be installed using the normal software installation tools for your distribution. In case your distribution does not provide or only ships an old version of Xjadeo, you can build it from [source](#).

Windows and Mac/OSX binaries are available from the [Sourceforge Download Page](#). Note that you'll need to install [JACK for OSX or Windows](#), in order to use Xjadeo.

2.3 Source

Xjadeo is developed using a git-repository at [git://xjadeo.git.sourceforge.net/gitroot/xjadeo/xjadeo](https://xjadeo.git.sourceforge.net/gitroot/xjadeo/xjadeo). In case you are unfamiliar with git, Sourceforge provides [information](#) on how to access it.

Xjadeo is also available as [source code package](#).

2.4 Build Dependencies

In order to compile the Xjadeo from source, you will need the "development" (-dev) version of the following libraries:

Mandatory Libraries:

- [JACK-audio-connection-kit](#)
- [ffmpeg](#) (libavcodec, libavformat, libavutil, libswscale)

Note that linking against ffmpeg requires all of ffmpeg's dependencies. Depending on the configuration of ffmpeg, these can include development packages of: libxvidcore, liblame, libfaac, libfaad, libvorbis, libogg, libx264, liba52, libdts,...

Video Display Libraries (you need at least one of the following):

- [libXV](#) (recommended)
- [IMlib2](#)
- [SDL 1.2](#)

(Note: for the Win32 version: SDL is required; on OSX none of the above are used but Xjadeo uses carbon/quartz)

Optional libraries:

- [Freetype 2](#) (actually libfreetype6-2) - for On Screen Display.
- [ALSA](#) (alsa-lib, libasound2) - MIDI Time Code.
- [portmidi](#) - MIDI Time Code.
- [LTC SMPTE](#) - for parsing LTC timecode.
- [QT4](#) - qjadeo Graphical User Interface
- [liblo](#) - remote control via [Opensoundcontrol](#)
- [librt](#) (from the [GNU C Library](#) $\geq 2.3.2$) - remote-control via POSIX message queue (requires kernel support - Linux $\geq 2.6.6$)
- [lash](#) - session management (deprecated¹ since Xjadeo $\geq 0.6.0$).

QT is only needed to compile and run the qjadeo Graphical User Interface (GUI) - not Xjadeo itself. You can certainly build and use Xjadeo without the GUI. qjadeo uses the remote-control feature of Xjadeo and provides easy access for users who are not familiar with the command-line.

Furthermore you'll need the standard GNU development tool-set (gcc, make, libc-devel, etc) and if you're building from the source-repository autotools (automake, autoconf) are required to generate the build environment.

We also recommend to install mencoder to transcode video files.

¹LASH support is still available, but not newer options - in particular LTC and MIDI-drivers - are not saved/restored.

2.5 Building Xjadeo

If you are using sources from the repository, you'll first need to generate the configuration script:

```
cd xjadeo/  
./autogen.sh
```

Once you have all the build-dependencies the usual spells apply:

```
./configure  
make  
make install # (requires root privileges)
```

The configuration process tries to auto-detect available optional libraries. However, you might want to consider using some of the compile-time options. run **./configure --help** for a full list of available arguments.

- with-fontfile=/path/to/font.ttf** Set the default (hardcoded) true type font file to use for the on-screen-display.
- enable-contrib** build additional support tools - mostly for testing Xjadeo.
- enable-lash** enable LASH support (deprecated). New features which were introduced after Xjadeo 0.4.10 are not saved/restored with LASH. In particular this affects LTC and JACK-MIDI. Future versions of xjadeo may support JACK-Session management.
- disable-qtgui** Do not build the QT Graphical User Interface.

3 Using Xjadeo

3.1 Quick Start

Simply run **xjadeo your-video-file.avi** from a terminal to get a default monitor window displaying the specified video file synchronously to JACK-transport. You can use **qjackctl**, **ardour** or any other JACK-transport aware application to start, stop or reposition the transport location.

xjadeo --help will print a list of available command line options. Refer to the manual-pages (**man xjadeo**) which are also available in the Appendix A for available commendline options.

If you prefer, you can also use the graphical user interface **qjadeo**, be aware that qjadeo only provides access to a limited set of Xjadeo's features.

But let's back off a little, first you will need a suitable video file to display..

3.2 Video Formats

Xjadeo has been designed to aid creative people and not as a general purpose video player. Since it is likely you will be working with the video file for some time, you may want to consider the system resources required for decoding it and perhaps convert it into a format that will tax less your CPU, usually at the expense of more disk space needed to store it.

Xjadeo uses **ffmpeg** to decode the video file and supports only seekable video streams. Probably you first need to encode your video file to a supported format.

Be aware that some codecs are governed by licenses or patents in many countries. This is an issue with **ffmpeg** and not Xjadeo: Nevertheless, you (the end-user) are responsible for complying with the licenses of the codecs you are using. see [FFmpeg License and Legal Considerations](#).

We recommend **mencoder** that comes with **mplayer**:

```
mencoder -idx -ovc lavc -lavcopts keyint=1 -nosound input-file.xxx -o output-file.avi
```


This creates from your `input-file.xxx` an AVI mpeg4 encoded video file with no sound, an index (-idx) and no compression between frames (every frame is a key frame). Thus The file can become really BIG, so watch your disk space!

You may want also to shrink the size of the file's video frames by scaling down its geometry. This uses fewer system resources while decoding and displaying it and leaves more space in the screen for your audio software.

```
-vf scale=width:height
```

qjadeo provides an "import dialog" available from the File menu, that will invoke mencoder with these arguments.



Important

Xjadeo's `-K` option allows to seek to frames other than key-frames and enables Xjadeo to play back any file without transcoding. The down side is increased CPU usage and possibly increased seek latency. The latter depends on the key-frame interval and video-codec.

The same can be achieved by adding `seek=continuously` to `~/xjadeorc`.

3.3 Invoking Xjadeo

The command syntax: **xjadeo [options] video-file**

There are numerous options documented in the unix man-page, see [command-line options](#). The default settings should be good for most use-cases. You can use any application that supports JACK-transport (e.g. qjackctl, ardour, gjacktransport, muse, qtractor, ...) to fool around with its transport controls and see the video clip moving along.

3.3.1 Configuring Xjadeo

On startup Xjadeo reads its resource configuration (rc) files if they exist. They are read before parsing command-line options, so settings specified in the .rc file are overridden by command-line arguments.

Xjadeo reads the following resource configuration files in this order:

1. `@SYSCONFDIR@/xjadeorc` (usually `/etc/xjadeorc` or `/usr/local/etc/xjadeorc`, which depends on your distribution and on the configuration when [building xjadeo](#))
2. `$HOME/.xjadeorc`
3. `./xjadeorc`

An example rc file, listing all available options is available with the source-code and can be found online: <http://xjadeo.git.sourceforge.net/git/gitweb.cgi?p=xjadeo/xjadeo;a=blob;f=doc/xjadeorc>

3.3.2 Sync Methods

Xjadeo polls the time code information in the following order, using the first available:

1. MIDI Time Code (if MIDI is connected).
2. LTC (if enabled).
3. JACK-transport (if connected).
4. default value (selecttable using `seek remote` command).

By default Xjadeo connects to jackd on startup. This behavior can be overridden by command line arguments, setting options in the configuration file or later using the remote control interface.

An optional time-offset is added after converting the current frame-number to the video file's frames-per-second timebase, followed by clamping the displayed frame-number into the range of the video file duration.

3.4 qjadeo - Graphical User Interface

To provide easy accesibility and integration into the desktop environment, Xjadeo is supplemented by a graphical user interface: qjadeo is a remote control application that launches Xjadeo and allows to control settings which otherwise would be need to be specified on the command-line.

Qjadeo screenshot

Screenshot of qjadeo's main window.

qjadeo offers "click and go" interface to the most common tasks:

- Load/replace video-file to display.
- Provides a history of recently used files.
- Change the sync-source on the fly.
- Frontend for importing/transcoding cideo-files (using mencoder).
- Control On-Screen-Display and set OSD font.
- manually seek through the video-file using a slider.
- Change the decoder seek mode.

Combined with keyboard shortcuts that can be used with the Xjadeo window itself (see Section 3.7), this covers all functionality (but for some obscure switches) available from the commandline.

Once started, qjadeo can be terminating without closing the monitor window. Re-launching qjadeo will re-connect to the running instance of Xjadeo.

3.5 Notes for OSX Jadeo

As with many thing on OS X Jadeo is different there. Since OS X mandates a menu-bar for each graphical application, the menu-bar part of qjadeo has been integrated into Jadeo. On the downside: it does not include the import/transcoding feature and no slider for manual seeking.



Important

Configuration of Jadeo on OSX can be done exclusively by using a `.xjadeorc` resource configuration file. See Section 3.3.1 and save it in your home folder.

3.6 Xjadeo on Windows

The usual way is to launch qjadeo from the Start-Menu, after starting JACK. qjadeo will fire up an Xjadeo window and you can take it from there. See Section 3.4 for usage information.

In order to use the import/transcoding feature, you need to install mencoder that comes with **mplayer** and configure the location of installation (default `C:\Program Files\mplayer\mencoder.exe`) in File → Configure Qjadeo).



Important

On windows it is not possible to disconnect/quit qjadeo without terminating the monitor window of Xjadeo.

It is possible to invoke Xjadeo using a command prompt (`xjadeo.exe` is installed by default to `C:\Program Files\xjadeo\`).

3.7 Interacting with Xjadeo

In most cases you will start up Xjadeo with your favorite command line options and not come back to bother again. However you may find it useful to change some settings during runtime:

3.7.1 Remote Control

If you do not want to re-focus your keyboard to the Xjadeo window use [xjremote\(1\)](#) and jump Section 5.

3.7.2 Monitor Window - Key bindings

Xjadeo accepts keyboard input (and the X11 version can receive Drag and Drop URIs to load a new file).

The current key-bindings are as follows:

| Key | Description |
|------------------|--|
| Esc | Terminate Xjadeo. |
| Space | If Xjadeo is synchronized to JACK-transport, toggle JACK-transport play/pause. |
| Backspace | If Xjadeo is synchronized to JACK-transport, rewind the play-head. |
| A | Toggle window always-on-top. |
| B | Draws a black box 'On Screen Display' (OSD) items. |
| Shift-C | Clear all 'On Screen Display' (OSD) information. |
| E | Toggle display of Color-Equalizer (only XV and imlib2). |
| Shift-E | Reset Color-Equalizer to default values. |
| F | Toggle full-screen mode. |
| L | Toggle letterbox / scale breaking aspect-ratio. |
| M | Toggle mouse pointer visibility. |
| O | cycle time-offset OSD: video-frames / SMPTE / off. |
| Q | Identical to pressing the Escape key - Terminate Xjadeo. |
| S | Toggle OSD SMPTE display. |
| V | Toggle OSD frame-number display. |
| < | Decrease window size by a factor of 1.2 . |
| > | Increase window size by a factor of 1.2 . |
| . | Resize window to original (movie-file) size. |
| , | Scale window to match movies aspect ratio. |
| - | Decrement A/V offset by 1 video-frame. |
| + | Increment A/V offset by 1 video-frame. |
| { | Decrement A/V offset by 1 minute. |
| } | Increment A/V offset by 1 minute. |
| 0-9 | change Color-EQ parameters with key pairs. brightness:1+2, contrast:3+4, gamma:5+6, saturation:7+8, hue:9+0 XV color balance is hardware dependant: Some boards do not support all parameters. The imlib2 software EQ is limited to brightness/contrast and gamma correction. |

Table 1: Key Bindings

3.8 Common Setups

3.8.1 Example Commandlines

```
xjadeo -f 25 -i 2 video-file.avi
```

updates the monitor window 25 times per second and renders SMPTE on the bottom of the screen

```
xjadeo -m -1 -v video-file.avi
```

(using xjadeo compiled with portmidi) auto-connect to first available MIDI-in port and use arriving MTC messages display video in sync.

```
xjadeo -f 12.5 -m 80:0 video-file.avi
```

(using Xjadeo compiled with ALSA seq) connect to MIDI device 80 port 0 and display video in sync with MTC messages, updating the screen every 80ms.

3.8.2 Configure Ardour 0.99.X to sync to JACK

- Windows → Option Editor
- Tab "Sync"
- Set "Positional Sync" to "Sync with JACK"
- Check option "JACK time master" (optional)

3.8.3 Configure Ardour 2 and Ardour 3 to sync to JACK

Ardour2 has button just right of to the clock which allows to set Ardour's sync mode (Internal, JACK and MTC)

Note: All versions of Ardour provide the alternative option to connect Xjadeo as a MTC slave instead of using JACK-transport.

3.8.4 configure rosegarden to run with Xjadeo

- Settings → Configure Rosegarden
- Select "Sequencer" icon.
- Tab "Synchronization"
- Set "JACK-transport mode" to "Sync"

3.8.5 Sync to RME HDME

If you own a **RME HDSP Time Code Option** Module which is available for selected RME cards. You can use the MTC which is generated automatically by hardware. Simply connect the MIDI port (which shows up as standard ALSA interface on Linux) to Xjadeo's MTC input.

4 Troubleshoot & Support

4.1 Troubleshoot

In case Xjadeo does not work out of the box..

- Try to play the (transcoded) video-file with another video-player. It may not be Xjadeo's fault but simply an invalid video-file.

- run **xjadeo -v filename** - look for warning and error messages, verify that the detected duration and offset (override with `-I` is correct. In verbose-more (`-v`) Xjadeo also prints information about the displayed frame and JACK-transport which might give a clue to what is going on.
- open the example video from <http://xjadeo.git.sourceforge.net/git/gitweb.cgi?p=xjadeo/xjadeo;a=blob;f=contrib/xjadeo-example.avi> or validate time-accuracy using time-stamped test videos: http://tux.gareus.org/torrents/tsmm_mjpeg-avi_10mins.torrent.
- Ask for help and share your experience: <http://sourceforge.net/projects/xjadeo/support>. Don't hesitate and don't be shy! We require your feedback to improve Xjadeo. Please include the output of **xjadeo -V**.

4.2 Known Issues

Some Video codecs are known not to work properly on some systems. This is mostly due to different ffmpeg versions, available codec decoders, etc. There is nothing we can do about it. You are required to transcode the video into a suitable format. see Section 3.2

Xjadeo portmidi sync make Xjadeo bail out if it fails to connect or encounters a MIDI buffer overflow. This is in fact a feature of portmidi but could also be considered a bug in Xjadeo.

X11 / nvidia might not work properly with the **Composite Extension** as reported in the [Forum](#). Temporarily disable this extension **nvidia-xconfig --composite nvidia-xconfig --no-composite** or permanently disable it in your X configuration:

```
Section "Extensions"
    Option "Composite" "Disable"
EndSection
```

If you experience unexpected behavior please file a bug report <http://sourceforge.net/projects/xjadeo/support> or [contact the developers](#).

5 Remote Control Interface

Xjadeo features a remote control mode that allows you to modify all settings of a running Xjadeo instance. When started in remote mode (using option `-R` or `--remote`) **xjadeo** will interactively accept commands and issue responses through the standard input/output mechanism.

Since version 0.3.20 Xjadeo implements POSIX **message queues** as an alternative to the standard-I/O remote control and since 0.4.11 also System-V IPC. The latter allows you to disconnect from and reconnect to an existing Xjadeo session. For more information about message queues read the [xjremote\(1\)](#) manual.

Note that qjadeo controls Xjadeo via message queues.



Important

Xjadeo's remote control interpreter is self documented, use the `help` command to query the available command set. The following list only covers basic interaction:

5.1 General Commands

help print a list of available commands with a short description.

quit exit qjadeo.

5.2 Video File Commands

load filename Load a video file, replacing any previous one.

unload Close the current video file.

get filename Returns the file name of the current movie.

get duration Returns the length of the movie in seconds.

get frames Returns the length of the movie in frames.

get frame-rate Returns the frame rate of the current movie.

get width Returns the width of the current movie in pixels.

get height Returns the height of the current movie in pixels.

get seekmode Returns an integer from 1 to 3 on how Xjadeo seeks to a given video frame.

1 seek continuously starting from the previous key-frame.

2 seek directly to any frame.

3 seek only to keyframes.

set seekmode value Set the seek-mode. Valid parameters are integer 1-3 or any of the words: `keyframe`, `any` or `continuous`.

5.3 Synchronization Commands

5.3.1 JACK

jack connect Connect to JACK and sync to JACK-transport.

jack disconnect Stop synchronization with JACK-transport.

jack status Get the status of the connection with JACK.

5.3.2 LTC

ltc connect Connect to JACK and sync to audio received on the `xjadeo:ltc` audio port.

ltc disconnect Disconnect from JACK and disable LTC sync.

ltc status Display status of JACK/LTC connection.

5.3.3 MIDI

midi reconnect (Dis and re)connect to the last specified MIDI port. The default port is -1, but it can be overridden with `-m` or the **midi open <port>** command.

Note: when a MIDI port is connected, the JACK-transport information will be ignored, no matter if Xjadeo is connected to JACK or not.

midi driver driver-name Choose MIDI back-end to use (ALSA, portmidi or JACK - available back-ends depend on the operating-system and compile-time configuration), or if `driver-name` is empty print current driver.

midi connect port Get sync from MTC (MIDI Time Code) instead of JACK.

If using ALSA MIDI, *port* is the ALSA sequencer id of the MTC source. A value of -1 will leave Xjadeo unconnected.
for JACK MIDI, *port* is the JACK-MIDI port name to auto-connect to. An empty value or non-existing port-name will leave Xjadeo unconnected.

If using portmidi, *port* is the port number of the MIDI input to use. WARNING: using an invalid id with portmidi will cause Xjadeo to bail out!

midi disconnect Close MIDI device.

midi status Displays the status of the Xjadeo MIDI port connection.

get midisync Display MIDI SMPTE conversion mode, corresponding to -M option.

set midisync n Set MIDI SMPTE conversion mode. *n* is an integer, corresponding to the -M command line option.

5.3.4 General Xjadeo sync commands

seek frame "Default" frame to display when disconnected from any other sync source.

get position Returns the current frame number.

get smpte Returns the current head position in SMPTE code.

get syncsource Prints the currently active source: 3: LTC, 2:MIDI, 1:JACK, 0:none / manual seek

get fps Returns the current window update rate.

set fps value Set the window update rate.

get offset Returns the current time offset in frames.

set offset value Set the time offset in frames.

5.4 Monitor Window Commands

window close Closes the video window.

window open Opens the video window using the default video-mode. The default video-mode is 'autodetect' unless overridden on the command-line.

window mode video-mode Opens the video window using the specified video-mode. A value of 0 autodetects while a positive integer corresponds to a video-mode which can be listed with the **list videomodes** command.

window resize value Resizes the monitor window. Value may either be a 2 dimensional vector <width>x<height> of absolute values, or a single integer specifying the window size in percentage of the movie file geometry.

window move value Position the monitor window on the desktop. The value is expected to be: <width>x<height>

get window size Prints the size of the video window in a 2D vector. <width>x<height>

get videomode Returns the current video mode.

list videomodes Prints a list of available video modes.

5.5 Notify Commands

notify loop Enables async messages. Xjadeo will generate a '@300' reply message each time it polls for a time-code (one message per loop is emitted at the frequency specified with `-f`).

notify frame Enables async messages. Xjadeo will generate a '@300' reply message each time it displays a new video-frame.

notify disable Stop generating notify messages.

5.6 On Screen Display Commands

osd frame ypos Render current frame-number on screen. *ypos* specifies the vertical position in percent (0..100). The text is horizontally centered. A value <0 disables the frame display.

osd smpte ypos Render SMPTE on screen. *ypos* specifies the vertical position in percent. The text is horizontally centered. A *ypos* value <0 disables SMPTE OSD.

osd text text Render the specified text on the screen. The position can be specified with the **osd pos** command.

osd text Display the previously set OSD text again.

osd notext Turn off OSD text.

osd pos xalignypos Set the position of the OSD text

xalign is an integer: 0:Left, 1:Center, 2:Right

ypos specifies the vertical position in percent (0..100).

osd available display if freetype support is available.

osd font font-filename Specify a TrueType Font file to be used when rendering On-Screen-Display text.

osd box draw a black box around the OSD

osd nobox make On Screen Display background transparent.

get osdcfg Return information on which text is currently rendered on screen in a bitwise integer encoding:

bit0 (1): Frame, bit1 (2): SMPTE timecode, bit2 (4): Text, bit3 (8): black-background-box

5.7 Response Format

Each remote command is acknowledged with a response, which you can ignore at your option. It is intended to be both human readable and machine parse-able. The response is a single line terminated with the newline character '\n' formatted as:

```
@<status-integer> <text>
```

each line start with an @ followed by an integer that tells if the command succeeded and specifies the format of the text. The status integer is usually a 3 digit decimal number in [100..999]:

1xx: OK. The command succeeded returning a small text info message.

2xx: the command succeeded and the return text is in format `name=value`

This is used for returning variables. 200-299 defines the type of the value as follows:

201: integer

202: double

210: Two dimensional vector <int>x<int>

220: string

228: SMPTE-string in format 'HH:MM:SS:FF'

3xx: These are messages that are generated by Xjadeo notify, not in response to a command. The format and type declaration is identical to 2xx messages. Currently the only 3xx message is 301 position=integer.

4xx: Error message.

8xx: Info or help message. These messages are meant to be ignored by automatic parsers and are for user information or displaying comments only.

6 Open Sound Control Interface

An alternative to the remote-control described in Section 5 is to use **Opensoundcontrol**. The drawback with OSC however is that there is no feedback. It is a one-way method of communication. Furthermore OSC usually has more latency compared to POSIX real-time messages, although it is quite possible to play a video sending 'seek' commands. On the upside OSC offers a control interface that works via Network. It is easy to use and ubiquitous. There is support to transmit OSC messages for nearly every programming language and even some hardware controllers - be it arduino, iPhone or mixing-desks.

To enable Xjadeo's OSC interface it needs to be started with the `-O port` option where *port* is the UDP port number Xjadeo listens on for messages. e.g.

```
xjadeo -O 7890 myvideofile.mov
```

7 Advanced Features - Artistic add-ons

Xjadeo's core functionality - to display a given video frame at a certain point in time - is not only useful for post-production but has applications in media-art installations.

There are two major features which are not enabled by default:

- time-scale: operations to modify the time-code: multiply (slow-down/speed-up), offset and wrap-around/loop.
- Panorama/frame-cropping: allows to display a sub-section of the image.

7.1 Time-scaling

Time-scaling adds three additional parameters to modify the displayed frame. They are applied in the following order:

1. scale - multiply frame-number (default: 1.0)
2. offset - add integer to frame-number (default: 0)
3. wraparound - add/subtract (multiples) of movie-length if the current time-stamp is less/above the movie-duration (default: off)

These parameters can be set via the remote-control described in Section 5 or by as OSC documented at Section 6.

7.2 Cave/Panorama mode

The Panorama mode needs be enabled at compile-time using `./configure --enable-framecrop`. when enabled during compilation Xjadeo will crop the image width to 50%. The x-offset can be modified with the keyboard [,] or OSC commands - see Section 6.

It is intended to be used with two neighboring movies stitched together:

```
A B C D
AB BC CD DA
```

To panning across boundaries, the files have to be re-loaded (using OSC or remote-control).

| Address Pattern | Type Tags | Description - notes in brackets are corresponding remote-ctl commands or commandline-options |
|---|-----------|--|
| /jadeo/seek | i | seek to given frame-number (identical to seek from xjadeo synchronization commands - Xjadeo needs to be disconnected from JACK and MTC sync-sources) |
| /jadeo/load | s | Load a video file, replacing any previous one. (load filename) |
| /jadeo/fps | f | set the screen update frequency (-f, set fps) |
| /jadeo/framerate | f | override video-files frame-rate (-F, set framerate) |
| /jadeo/offset | i | set time-offset as frame-number (-o, set offset) |
| /jadeo/offset | s | set time offset as SMPTE (set offset) |
| /jadeo/jack/connect | | Connect to JACK and sync to JACK-transport (jack connect) |
| /jadeo/jack/disconnect | | Stop synchronization with JACK-transport (jack disconnect) |
| /jadeo/osd/font | s | Specify a TrueType Font file to be used when rendering On-Screen-Display text (osd font) |
| /jadeo/osd/smtpe | i | if set to 1: render SMPTE on screen, set to 0 to disable (-i 2, osd smpte) |
| /jadeo/osd/frame | i | if set to 1: render frame-number on screen, set to 0 to disable (-i 1, osd frame) |
| /jadeo/osd/box | i | if set to 1: draw frame-number on screen, set to 0 to disable (osd box, osd nobox) |
| /jadeo/quit | | terminate Xjadeo. |
| The following commands are only available if MIDI is supported. | | |
| /jadeo/midi/connect | s | Get sync from MTC (MIDI Time Code) instead of JACK. The parameter specifies the midi-port to connect to. see Section 5.3.3 for the format. (-m, -d, midi connect) |
| /jadeo/midi/disconnect | | Close the MIDI device (midi disconnect) |
| /jadeo/midi/quarterframes | i | 1, 0 en/disable sync to MTC quater frames (-c, midi clk) |
| /jadeo/midi/clkconvert | i | specify how to 'convert' MTC SMPTE to framenummer: 0: use framerate of MTC clock (default); 2: use video file FPS; 3: "resample": videoFPS / MTC (-M, midi sync) |
| The following command is only available if "panorama mode" is enabled. see Section 7 | | |
| /jadeo/pan | i | set the x-offset to the value given in pixels. $0 \leq val \leq \text{movie-width}$ |
| The following commands are only available if "timescale mode" is enabled. see Section 7 | | |
| /jadeo/timescale | f | set time-multiplier; default value: 1.0 |
| /jadeo/timescale | fi | set both time-multiplier and offset. default: 1.0, 0 |
| | | wrap-around/loop video. If set to 1 (multiples) of the movie-length are added/subtracted if the current time-stamp is less/above the movie-duration. |
| /jadeo/loop | i | |
| | | multiplies the current time scale with |

7.3 Action Override

using the **set override** remote-control command, it is possible to disable certain key-bindings or window-events. and limit user interaction with the window.

| Bit | Value | Description |
|-----|-------|--|
| 0 | 1 | ignore Esc and Q |
| 1 | 2 | ignore window-close event |
| 2 | 4 | ignore Button1 - do not resize the window. |
| 3 | 8 | (OSX only) ignore Jadeo → Quit Jadeo |
| 4 | 16 | Ignore time-offset keyboard-shortcuts (-, +, {, }) |

Table 3: Interaction Override

A Manual Pages

A.1 xjadeo

xjadeo — display a video-clip in sync with an external time source

Synopsis

```
xjadeo [-aAbcCDhIkKILnNPqQRsStvV] [-d midi-driver] [-f fps] [-F fps] [-i int] [-m midi-port] [-M num] [-o frames/SMPTE] [-O osc-port] [-W rpc-id] [-x dpy-mode] videofile
```

```
xjadeo -R [options] [videofile]
```

```
xjadeo -Q [options] [videofile]
```

DESCRIPTION

Xjadeo is a software video player that displays a video-clip in sync with an external time source (MTC, LTC, JACK-transport). It has applications in soundtrack composition, video monitoring or any task that requires synchronizing movie frames with audio events.

Xjadeo supports different video file formats, video output libraries and sync sources.

OPTIONS

- a, --ontop** Start Xjadeo 'always-on-top' of other windows (this option requires support from your window manager).
- A, --avverbose** Enable verbose ffmpeg messages (format/codecs debugging).
- b, --letterbox** Retain aspect ratio and draw a letterbox around the video-frame if necessary.
- c, --no-midiclk** Do not use MIDI quarter-frames for more exact sync.
- c, --midiclk** Use MIDI quarter-frame timing for more exact sync (this is enabled by default since version 0.4.11).
- d *midi-driver*, --midi-driver *midi-driver*** Choose MIDI back-end to use. *midi-driver* can be either one of "JACK", "ALSA" or "portmidi" - depending on the operating-System and compile-time configuration.

-
- D, --debug, --debug** Enable debug mode. Print development related information.
- f n, --fps n** Desired refresh-rate of the video display in frames per second. Non-integer values are possible. Default: -1.
If this value is set to zero (or less), Xjadeo will use the FPS of the video-file as its screen update frequency.
- F n, --filefps n** Override the (auto-detected) frame-rate of the video-file.
- h, --help** Prints usage help and exits.
- i n, --info n** Displays information using the OSD (on-screen display.)
- 0 Off.
 - 1 Frame number.
 - 2 SMPTE time code.
 - 3 Both frame number and SMPTE.
- The remote control interface allows more complete control over the OSD.
- I, --ignorefileoffset** This option is only useful for video files with a start-offset, such as split vob files. Per default Xjadeo will honor offsets specified in the video-file header and the file's PTS/DTS. **-I** allows you to override and subtract this offset and makes the file start at SMPTE position 00:00:00:00 (although you can archive the same result, this option is not related to **-o**.)
- k, --keyframes** Instructs the internal algorithm to seek only to key-frames. This option may improve the performance for certain video encodings.
The default behavior (without **-k** and **-K** arguments) is to search any ANY frame.
- K, --continuous** Decode video frame by frame starting from previous key-frame. This particularly useful for reading files where not every frame is a key-frame at the cost of increased CPU usage. Note that this option adds some extra latency when seeking. Combine it with **-f -1**: it makes sense to set Xjadeo's screen-update frequency to match the frame-rate of the video file.
- l, --ltc** Use LTC as sync-source instead of JACK-transport.
- L, --nolash** Disable LASH support.
- m midi-port, --midi midi-port** Get sync from MTC (MIDI Time Code) instead of JACK or LTC.
If using JACK-MIDI driver, *midi-port* is the JACK-MIDI port to use as input - use an empty value ("") to not auto-connect
If using ALSA MIDI back-end, *midi-port* is the ALSA sequencer-id to be used as the MTC source. A value of -1 will leave Xjadeo unconnected.
If using portmidi, *port* is the port-number of the MIDI input device to use. The value -1 will attempt auto-connect. Use **-v -m -1** to list MIDI ports during auto-detection.
- M n, --midifps n** Conversion between MTC SMPTE and frame number.
- 0 (default) Use MTC clock frame rate.
 - 1 Use video-file's frame-rate.
 - 1 Resample video frame rate / MTC.
- n, --nodropframes** Prevent Xjadeo from detecting drop-frame-timecode (usually files with 29.97 fps)
- N, --dropframes** Force Xjadeo to use drop-frame-timecode (drop-frame-timecode is only valid for files with 29.97 fps but your milage may vary)
- o n, --offset n** Offset the video playback a certain number of (video) frames relative to the sync master time base. Admits negative values. *n* can be specified either as integer frame-number or SMPTE text.
- P, --genpts** This option passed on to ffmpeg and has no effect on older versions of libavformat.
it can be used to generate "presentation time stamps" if they are missing in the file, even if it requires parsing future frames.
-

- q, --quiet, --silent** Suppresses normal output messages.
- Q, --mq** Enable POSIX message queues. Set up a communication channel for use with [xjremote\(1\)](#). See the Section 5 in the online documentation for more information.
- R, --remote** Enable interactive (stdin/stdout) remote control mode. Options `--quiet` and `--verbose` have no effect in remote mode.
- s, --fullscreen** Start Xjadeo in full-screen mode.
- S, --nosplash** Skip the on-screen-display startup sequence.
- t, --try-codec** Check if the video file is encoded in a format suitable for use with Xjadeo and exit. If the video format is not supported the exit code is 1.
- v, --verbose** Print additional information.
- V, --version** Display version and compile-time configuration information and exit.
- W *rpc-id*, --ipc *rpc-id*** Set-up IPC message queues for xjremote. *rpc-id* specifies a file-path used to identify the message-queue.
- x *dpy-mode*, --vo *dpy-mode*, --videomode *dpy-mode*** Selects the video output driver. Defaults to 0 (auto-detect). A value of -1 lists the available modes and exits.

SYNC SOURCES

xjadeo currently supports the following synchronization sources:

- JACK-transport.
- LTC (Linear/Longitudinal Time Code) - via JACK audio.
- MTC (MIDI Time Code) via JACK-MIDI.
- MTC (MIDI Time Code) via ALSA sequencer.
- MTC (MIDI Time Code) via portmidi.
- remote-ctrl manual seeks (not really a sync source).

VIDEO FORMATS

Xjadeo uses ffmpeg to decode video files, so a wide range of formats and codecs are supported. Note, however, that not all the formats support seeking. To transcode a video-file into a suitable format we recommend:

```
mencoder -idx -ovc lavc -lavcopts keyint=1 -nosound input_file.xxx -o output_file.avi
```

This creates from your input-file.xxx an AVI mpeg4 encoded video file with no sound, an index (-idx) and no compression between frames (every frame is a keyframe). The file thus can become really BIG, so watch your disk space!

You may want also to shrink the size of the file's video frames by scaling down its geometry. This uses fewer system resources while decoding and displaying it and leaves more space in the screen for your audio software.

```
-vf scale=width:height
```



Important

Also note Xjadeo's `-K` option which allows to seek to frames other than key-frames and enables Xjadeo to play back any file without transcoding it. It comes at the expense of increased CPU usage and possibly increased seek latency. The latter depends on the key-frame interval and video-codec.

The same can be achieved by adding `seek=continuously` to `~/ .xjadeorc`.

USER INPUT

xjadeo window accepts the following input:

- Pressing mouse button 1 will resize the window to the original movie size.
- Mouse button 2 and 3 resize the window to match the movie aspect ratio.
- Scroll Wheel (buttons 4,5) stepwise decreases/increases the window size maintaining the original aspect ratio.
- Xjadeo \geq v0.3.8 supports keyboard events. Pressing **Esc** and **q** will end the program. **f** toggles full-screen, **a** toggles always-on-top. Press **m** to hide mouse cursor. **v**, **s**, **o**, **C** and **b** control on-screen-display and **l** toggles the letter-box mode. The time-offset can be modified with **+**, **-**, **{**, **}** and window-size with **<**, **>**, **,**, **.**. **SPACE** and **BACKSPACE** can be used to control JACK-transport. See Section 3.7.2 in the online documentation for a complete list.

REMOTE MODE

When started in remote mode (option **-R** or **--remote**) Xjadeo will interactively accept commands and issue responses through its standard input/output mechanism.

Use the remote command **help** to get a quick overview of all available commands. Please refer to the online documentation for a complete description of the remote commands.

xjadeo -Q enables remote control by message-queues; use **xjremote** to connect.

FILES

Xjadeo reads the following resource configuration files in this order:

1. `/@SYSCONFDIR@/xjadeorc` (usually `/etc/xjadeorc` or `/usr/local/etc/xjadeorc`, which depends on your distribution and on the configuration when [building xjadeo](#))
2. `$HOME/.xjadeorc`
3. `./xjadeorc`

Each line in the configuration file must be in the format:

```
KEY=VALUE
```

If the first character on a line is either **#** or **;** the line is ignored. **KEYS** are not case sensitive. Some **VALUES** are case sensitive (e.g. filenames) and are parsed identical to the corresponding command-line arguments (e.g. `-x SDL` is equivalent to the config-file option `videomode=SDL`). Boolean values are specified as `yes` or `no` (e.g. `quiet=yes`).

currently supported RC-KEYS: `fps`, `fontfile`, `lash`, `letterbox`, `midiclk`, `mididriver`, `midiid`, `midismpte`, `mq`, `nosplash`, `quiet`, `seek`, `verbose` and `videomode`. Which are documented in the example [xjadeorc](#)

ENVIRONMENT

JACK_DEFAULT_SERVER Set the jack-server-name to connect to (used by JACK-transport, JACK-MIDI and LTC)

SEE ALSO

[qjadeo\(1\)](#)

[xjremote\(1\)](#)

[xjinfo\(1\)](#)

[online-manual](#)

A.2 qjadeo

qjadeo — GUI front-end to **xjadeo**

Synopsis

qjadeo

DESCRIPTION

Xjadeo is a software video player that displays a video-clip in sync with an external time source (MTC, LTC, JACK-transport).

qjadeo is a graphical front-end to Xjadeo. It communicates with Xjadeo either directly (single session) or using **xjremote**.

ENVIRONMENT

If the `XJREMOTE` variable is set, qjadeo will assume that it holds the path to the **xjremote** executable.

SEE ALSO

[xjadeo\(1\)](#)

[xjremote\(1\)](#)

A.3 xjremote

xjremote — CLI remote-control to **xjadeo**

Synopsis

`xjremote [-fhPquUvV] [-I mq-queue-id]`

DESCRIPTION

Xjadeo is a software video player that displays a video-clip in sync with an external time source (MTC, LTC, JACK-transport).

xjremote connects to a instance of Xjadeo and allows a user to tweak the running configuration.

If it can not connect, xjremote will start a new instance of Xjadeo and open a connection to it unless the `-f` is given.

OPTIONS

-f, --nofork disable automatic startup of Xjadeo. Instead xjremote will terminate if it can not connect to a running Xjadeo.

-h, --help Prints usage help and exits.

-I *ipc-id*, --id *ipc-id* specify message-queue identifier.

-P, -P, --noping Skip checking for Xjadeo life signs (ping).

-q, --quiet, --silent Suppresses normal output messages.

-Q ignored - xjremote can be used as a drop in replacement for **xjadeo -Q**.

-R ignored - xjremote can be used as a drop in replacement for **xjadeo -R**.

- u, --unlink** remove existing queues. Unless combined with **-f** this will launch always a new Xjadeo instance after unlinking the queues. Note: active connections are not affected.
- U, --unlinkonly** remove existing message queues and exit. If no Xjadeo instance is running this is equivalent to **-u -f**.
- v, --verbose** Print additional information.
- V, --version** Print version information and exit.
- W *rpc-id*** ignored - xjremote can be used as a drop in replacement for **xjadeo -W ..**

ENVIRONMENT

If the `XJADEO` variable is set, xjremote will assume that it holds the path to the Xjadeo executable.

Note

Apart from Standard-I/O, Xjadeo can either use POSIX real-time message-queues (MQ) or System-V IPC communication. The decision is made when compiling it. Basically GNU/Linux uses MQ (but could use IPC as well). OSX only supports IPC and Windows is limited to standard-I/O only.

SEE ALSO

[xjadeo\(1\)](#)

[qjadeo\(1\)](#)

A.4 xjinfo

xjinfo — Display A/V file info in XML format.

Synopsis

```
xjinfo [-chtvVx] videofile
```

DESCRIPTION

xjinfo does basically the same as **ffprobe** but displays the information in XML or simple text format that can be used for scripting.

OPTIONS

- c, --csv** comma separated values, one line per video stream in file. Use the built-in help **-h** to learn about the format.
- h, -h, --help** Print usage help and exit.
- t, --time, --duration** print the duration in seconds (without trailing newline)
- v, --text** print a single line: duration, fps, geometry and codec info.
- x, --xml** output XML data. This is the default if no option is specified.

A DTD is available with the source or from xjadeo.sf.net

SEE ALSO

[xjadeo\(1\)](#)
