

Default

COLLABORATORS

	<i>TITLE :</i> Default	
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>
WRITTEN BY		February 12, 2023
<i>SIGNATURE</i>		

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	Default	1
1.1	IsisPPC documentation	1
1.2	Disclaimer	2
1.3	Introduction	2
1.4	MPEG	3
1.5	MPEG video	3
1.6	MPEG audio	4
1.7	MPEG system	4
1.8	Requirements	5
1.9	Installation	5
1.10	Usage	5
1.11	Options	6
1.12	Preferences	7
1.13	Overlay	8
1.14	History	9
1.15	FAQ	9
1.16	Bugs	10
1.17	Future	10
1.18	Thanks	11
1.19	Author	11

Chapter 1

Default

1.1 IsisPPC documentation

IsisPPC - an MPEG-Player for PowerPC-equipped Amiga ↔
computers

(C) Copyright 1997, 1998 by phase5 digital products

Written by André Osterhues

Disclaimer

Please read this first

Introduction

What is IsisPPC? And what is MPEG?

Requirements

Which Hard- and Software is required?

Installation

How to install IsisPPC?

Usage

Things you have to consider

Options

WB ToolTypes and CLI arguments

FAQ

Frequently Asked Questions

History

History of versions

Bugs

Also called »Programmfehler«

Future

What will be supported in the future?

Thanks
Thanks to...

Author
The one who...

1.2 Disclaimer

Disclaimer
=====

This software contains parts that are
Copyright (c) 1995 The Regents of the University of California.

IN NO EVENT SHALL THE UNIVERSITY OF CALIFORNIA BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE UNIVERSITY OF CALIFORNIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE UNIVERSITY OF CALIFORNIA SPECIFICALLY DISCLAIMS ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE SOFTWARE PROVIDED HEREUNDER IS ON AN "AS IS" BASIS, AND THE UNIVERSITY OF CALIFORNIA HAS NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

1.3 Introduction

Introduction
=====

IsisPPC is an
MPEG
-Player for Amiga computers.

Some Features:

- Starts from Workbench as well as from CLI
- Display in 8/15/16/24 Bit on Workbench or any Public-Screen (auto-sensing)
- Display in 8/15/16/24 Bit on CyberGraphX-Screens
- Usage of the Video-
Overlay
in combination with the CyberVision64/3D
- Control-Panel
 - Automatic resizing at window size change

- VideoCD/CD-I support (using external drivers from BurnIt)
- Audio support via AHI V4

1.4 MPEG

MPEG

====

The name MPEG refers to the Moving Pictures Experts Group, a consortium of digital video and audio processing experts. In the year 1993, the draft of this group was published by the ISO (International Organization for Standards) and thus declared a standard.

There is a distinction between
MPEG video

,

MPEG audio
and
MPEG system

One of the goals has been to reach as good picture and sound quality as possible using as few storage memory as possible. As an upper bound for storage memory usage, 192 KByte per second was defined.

For comparison: Without data compression, just the video data would consume over 3700 KByte per second. Additionally, there would be about 172 KByte per second for sound in stereo CD quality.

1.5 MPEG video

MPEG video

=====

In MPEG video, an animation is divided into single pictures, called "frames". There are three different types of frames: I-, P- and B-frames

I-frames (intra):

These frames are compressed similar to the well-known JPEG pictures. Data is stored independantly from previous or following frames.

P-frames (predictive):

Here, only changes concerning the previous I- or P-frame are stored. To display P-frames, data from the previous I- or P-frame must be decoded and available.

B-frames (bidirectionally predictive):

In B-frames, a steady motion of single picture parts between the previous and the following frame is being searched. In the best case, just the motion itself is coded and stored. B-frames require fewest memory, but can only be decoded after the previous and the following(!) frame has been decoded.

A typical sequence of MPEG-frames would be (in order of display):

```
I  B  B  P  B  B  P  B  B  I...
1  2  3  4  5  6  7  8  9 10
```

They would be ordered like this in the MPEG video file:

```
I  P  B  B  P  B  B  I  B  B...
1  4  2  3  7  5  6 10  8  9
```

With the SKIP option, you can control which types of frames will be decoded and displayed (see Options).

1.6 MPEG audio

MPEG audio
=====

In MPEG audio, we distinguish Layer-I, Layer-II and Layer-III. Together with the number in the term, also the complexity of the Layer increases; while Layer-I and -II are quite easily comprehensible (and can be played in real-time on 68060-equipped Amigas), Layer-III is rather complex.

In practise, however, Layer-II is used for most VideoCDs/CD-Is. Layer-III is used for DVD (Digital Versatile Disc) applications.

IsisPPC supports playback of all three layers.

1.7 MPEG system

MPEG system
=====

Here,

MPEG video
and
MPEG audio
data are stored
together in a single file. This method is used mainly for Video CDs.

1.8 Requirements

Requirements

=====

Minimal configuration:

- an Amiga with a PowerPC and 68040 CPU
- AmigaOS 2.0
- a graphic card with CyberGraphX support
(or AGA with CyberGraphX AGA)
- CyberGraphX Version 3.0 (v41)
- AHI V4+
- at least 4 MB RAM
- a CD-ROM-Drive for VideoCD/CD-I playback

Ideal configuration:

- PowerPC 604e/200MHz and 68060 CPU
- AmigaOS 3.x
- a CyberVision64 or CyberVision64/3D
- 16 MB RAM or more
- a double-speed CD-ROM-Drive

1.9 Installation

Installation

=====

The installer script will install all required files for you.

If you rather want to install IsisPPC by hand, follow these steps:

1. Copy the file IsisPPC into a directory of your choice.
2. Ensure that the following libraries are in the LIBS: drawer:
 - asl.library
 - cgxsystem.library
 - cgxvideo.library, if you want to use the overlay of the CyberVision64/3D
 - gtlayout.library
 - ppc.library
3. If you want to use the CD track option of IsisPPC, install these files to the LIBS: drawer:
 - BurnIt_Master.driver
 - the BurnIt_Drivers/BurnIt_CDROM subdirectory with the driver for your CD-ROM drive

1.10 Usage

Usage

=====

IsisPPC can be started from Workbench as well as from CLI. The ToolTypes and CLI arguments are explained on the

Options
page.

Right after the program start, a control panel will appear.
The meaning of most of the tapedeck gadgets should be clear:

```
>      Play           Start playback or continue after pause
||     Pause         Pause playback or step if already paused
<<    Backward      Spool backward
>>    Forward       Spool forward
^     Eject         Eject MPEG (Note: this one doesn't quit the program)
|<    Previous      Previous VideoCD track
>|    Next          Next VideoCD track
```

Below the tapedeck gadgets are three additional gadgets:

```
Load           Load MPEG and start playback
Prefs         Set/change
              preferences
              Quit           Exit program
```

There is also a menu with all these options.

Keyboard settings (display window has to be activated):

```
- ' '           Play
- 'p' 'P'       Pause/Step
- '<'          Backward
- '>'          Forward
- 'e' 'E'       Eject
- '-'          Previous
- '+'          Next

- 'l' 'L'       Load
- 's' 'S'       Prefs
- 'q' 'Q' 'ESC' Quit

- 'f' 'F'       Full window size
- 'r' 'R'       Reset window size
- 'h' 'H'       Half window size
- 'd' 'D'       Double window size
- 'z' 'Z'       Zoom window
- 'a' 'A'       Window alignment (improves AGA speed)
                Should be selected this after dragging the
                window when using an AGA screen
```

1.11 Options

Options

=====

The following Workbench ToolTypes/CLI arguments are supported:

NAME=<MPEG filename>	The name of the MPEG file (with path)
SCREEN	Display on a 8/15/16/24bit screen
PUBSCREEN=<pubscreen name>	Display on a public screen
OVERLAY	Display in an
	overlay
	window
	(only possible with the CyberVision64/3D)
COLORKEY	Usage of color keying (see
	Overlay
)
BACKDROP	Usage of Workbench-Backdrop (see
	Overlay
)
SCREENMODE=<screen mode name>	Screen mode string
DEPTH	Screen depth
DITHER=ORDERED FS2	Dither mode for 8bit display (ordered or floyd- ↔
steinberg2)	
CDTRACK=<track number>	Playback from VideoCD/CD-I track
FPS	Number of frames per second
	Two values have a special meaning:
	0 = as fast as defined in the MPEG file
	-1 = as fast as possible
FAST	Faster decompression with lower quality
	(slightly blurred picture)
SKIP=<percentage>	Percentage of frames to be skipped (see also
	FAQ
)
MUTEAUDIO	Turn off audio output
LOOP	The MPEG film will be repeated after the last ↔
	frame has been
	displayed
RESTART	After playing one MPEG, the file requester pops up ↔
	again
STATS	Print timing statistics after playing

1.12 Preferences

Preferences

=====

Input

Input	Get MPEG stream from "AmigaDOS file" or "CD track"
Default path	Default path for file requester
Device name	SCSI device of CD-ROM drive
Device unit	SCSI unit of CD-ROM drive

Display

```

-----
Display          Type of display: "PubScreen", "Screen" or "WB- ←
  Backdrop"
Overlay          Type of overlay: "No overlay", "Overlay" or " ←
  Colorkey"
Dithering        Dither mode for 8bit display (ordered or floyd- ←
  steinberg2)
PubScreen name   Name of PubScreen (if Display is set to "PubScreen ←
  ")
Screen mode      Screen mode (if Display is set to "Screen")

Speed
-----
FPS              Number of frames per second
Skip             Percentage of frames to be skipped
Fast            Faster decompression with lower quality
                (slightly blurred picture)

Audio
-----
AHI unit        AHI unit to playback sound (setup with SYS:Prefs/ ←
  AHI)
Volume          Sound volume (0 = silent, 100 = loud)
Balance         Sound balance (-50 = left channel, 0 = centered,
                50 = right channel)
Mute            Turn off audio output

Misc
-----
Loop            The MPEG film will be repeated after the last ←
  frame has been displayed
Statistics      Print timing statistics after playing

```

1.13 Overlay

```

Overlay
=====

```

The CyberVision64/3D has a special feature compared to conventional graphics cards ←
: the overlay.

An Overlay is in principle a rectangular part of the screen, which cannot be ←
hidden by windows
or other picture elements. To put it in other words: an overlay is always the ←
frontmost element
in the hierarchy.

Using the OVERLAY option has the following advantages:

- 1) The CPU doesn't have to perform a colour space conversion (the conversion ←
from YUV to RGB data
is done by the graphics card).
- 2) The graphics processor also scales the output. That means that it (virtually) ←
doesn't matter
if the video is shown in a small window or on the whole screen.

So, with an overlay, the graphics output speed is increased strongly

Unfortunately, by using an overlay some parts of the original Amiga "look and feel" get lost. The screen on which an overlay is displayed cannot be dragged anymore. Further, it sometimes looks strange if one wants to drag another window on top of the IsisPPC window and the IsisPPC output covers that window. But this effect can be eliminated by using the COLORKEY option (other window can lay above the IsisPPC window then).

Colorkey
=====

When using color keying, the window background is filled with a specific color. The Overlay is only shown where this color is located. If another window lays above the IsisPPC window, the IsisPPC window's key color is covered by that window and only the non-covered part of the Overlay is displayed.

1.14 History

History
=====

12.02.1998	V2.3	Design bug fixed Output of audio statistics
12.02.1998	V2.2	Improved Prefs design New Prefs subsection "Audio" Optimized audio decoder for layers II and III
06.02.1998	V2.1	Align menu on AGA screens
24.01.1998	V2.0	Bugfixes, completely reworked major parts of program
??..11.1997	V1.20	first public release

1.15 FAQ

FAQ
===

Q: When selecting an MPEG stream with audio, audio playback stutters.

A: Increase the "Skip" value in the "Prefs" window to about 50. Click "Use". If audio still stutters, you'll have to increase the value even further. Values >=90 mean "skip all B-frames" and a value of 100 means "skip all B- and P-frames". Take a look at
MPEG video
for an explanation of B-
and P-frames.

You might also improve speed a bit by using the FAST option.

Q: I use IsisPPC on an AGA screen. When moving the display window, it gets really slow. Why is this and what can I do?

A: For AGA display, image data must be converted from chunky to planar and then it is blitted into the Bitmap, which lies in ChipRAM. When the left edge of the display window is not a multiple of 32, data has to be shifted. This requires additional computations, which have to be done in (noncachable) ChipRAM - it gets real slow.

When the left edge is a multiple of 32, however, the shifting doesn't need to be done. This improves speed on AGA machines drastically.

The "Align" function (from the "Window"-Menu) moves the window in order to assure the left edge lies on a multiple of 32.

So, always select "Align" from the menu after dragging the window.

1.16 Bugs

Bugs

====

- When using the video overlay (option OVERLAY), sometimes patterns appear on the right hand side of the window. This is due to hardware bandwidth limitations and has nothing to do with IsisPPC as other programs using the overlay feature suffer from it as well. The effect gets even stronger when using the COLORKEY option.

Solution:

Use the "CGXMode" program to decrease the display mode's pixel clock. Check if those stripes still appear and decrease further if necessary.

- There are problems with audio layer I
- If you should discover further bugs, please contact the author

.

1.17 Future

Future plans

=====

- Index feature for VideoCDs/CD-Is with only one track
- Double buffering file I/O

1.18 Thanks

Thanks to (alphabetical order)

=====

- Stefan Burstroem, for the audio decoder
- Steve Krueger, for the excellent SAS/C (M68k and PPC) compilers
- Frank Mariak, who gave me so much invaluable advice
- Robert Reiswig, for the CyberGraphX, PPC, Osiris and Isis support pages and ↔
for the installer script
- Ralph Schmidt, for ppc.library
- Michael Siegel, for the BurnIt drivers and documentation

1.19 Author

Author

=====

André Osterhues
Meitnerweg 13
D-44227 Dortmund
Germany

e-mail: osiris@develop.phase5.de

Check out the official CyberGraphX support page at:
<http://www.vgr.com/>

... and the official Osiris/Isis Support pages at:
<http://www.vgr.com/osiris/>
<http://www.vgr.com/isis/>
