Frogger

	COLLABORATORS		

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	REVISION HISTORY		

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Contents

Chapter 1

Frogger

1.1 Frogger - Ultimate MPEG Player

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Frogger - Ultimate MPEG Player
     v1.51 (23-01-2000)

 Introduction
 Requirements
 Features

 Installation
 Usage
 VideoCD
 Speed

 Bugs

 History
 Future
 Authors
 Mailing List
 Thanks

Please note that this release may contains a lot of new bugs,
because it is work in progress. But many people asked for the
new version so here it is...

Frogger home page:
http://jota.wi.tuniv.szczecin.pl/~bjsebo/Frogger
```

1.2 Introduction

```
Frogger is the ultimate MPEG video player, with MPEG-2 layer support.
Frogger was oryginally relased by Miloslaw Smyk (thorgal@wfmh.org.pl),
recently, the development has been taken over by Sebastian Jedruszkiewicz
(bjsebo@jota.wi.tuniv.szczecin.pl)

The MPEG1/2 decoder is based on mpeg2decode
```

created by MPEG Software Simulation Group.

1.3 Requirements

Hardware:

 - Amiga (68k or PPC)
 - a CD-ROM for VideoCD playback
 - 4 MB RAM

Software:

 - ppc.library 46+ (PPC version).
 - AHI for sound.
 - CGFX v3+ for CGFX display.
 - cgxvideo.library for overlay support.
 - some mpegs to play ;)
 - ppc.library emulation v0.7c, if you are using WOS.

1.4 Features

 - video layer 1/2 decoding.
 - Audio layer I, II and III decoding.
 - Fast video & audio playback.
 - Intelligent frame skipping.
 - Overlay support.
 - Fast C2P for AGA.
 - Direct CGFX video memory access routines.
 - Asynchronous disk reading.
 - Video scaling on both CGFX and AGA.
 - Support for reading VideoCD disks.

1.5 Installation

No install script was made - just copy the executable
file and guide wherever you want.
Note that there are 4 executables:
for 030,040,060 and PPC processor. Just pick the one
that match your configuration.

1.6 Usage

Frogger can be started from both CLI and icon. It requires
big stack, I assume 100000 will satisfy. The PPC version is not
that stack hungry, I belive 16000 will be enough.

I suggest to use setmemode programm to switch your memory to 60ns,

```
 like this:
 setmemmode 60ns.
 You could also try set (CYBER | BLIZZ)68KNOPRECHARGE and
 (CYBER | BLIZZ)PPCNOPRECHARGE, but it may not work with some
 ram.
 You can also switch memory to 60ns using PPC boot menu.
```

```
Options:
--------
```

```
TEMPLATE:
  FILE, SCREEN/S, MODEID/K, NOAUDIO/S, NOVIDEO/S, DISPLAY/K
  FULLSCREEN=FS/S, LOOP/S, FPS/N, FORCESTEREO/S, AUDIO8/S
  VERBOSE/S, NOSKIP/S, MODEBYNAME=MBN/K, AHIUNIT/N,
  BESTMODEID=BMID/S, FASTDIRECTCGFX=FDC/S, QUALITY/S,
  VCDDEVICE/K,VCDUNIT/N,SCALE/N
```

```
 FILE:
  mpeg file to play. if no file is specified, asl will popup.
  If you pass text VIDEOCD as filename, Frogger will read
  data from videocd disk. Read  more here.
```

```
 SCREEN:
  open window on pubscreen. default to open on WB.
```

```
 MODEID:
  specify modeid for SCREEN or FULLSCREEN. this can be either
  decimal value (ie. 123456) or hexadecimal value (ie. 0x123abc)
  Hexadecimal valume can be passed as 0xnumber or $number.
```

```
 NOAUDIO:
  turn audio off in files that have got audio track. By default
  Frogger will try to find if there is audio track available,
  and will decode audio if audio was found.
```

```
 NOVIDEO:
  Disables displaying of decoded frames. It means that video is
  actually decompressed, output UYV is converted to user requested
  format (grey, RGB, CLUT), but the output is not displayed on
  screen or window. It may be used to measure how much time Frogger
  spents in display function, or to see how slow AGA is ;)
```

```
 DISPLAY:
  specify display method. by default Frogger will use color dithering
  (8, hi or true color, depending on depth of selected screen).
```

```
  Display methods available:
    VLAYER      - use cgxvideo.library video overlay feature.

    VLAYERGREY - use cgxvideo.library video overlay feature, grey.

                 VLAYER can be used only on gfx card that supports
                 hardware YUV -> RGB conversion. cgxvideo.library
                 supports only CV3D card, but it also works on
                 BVisionPPC/CVisionPPC. Please read chapter  Overlay
                 for info about using overlay on such a card.
```

Note that from version 1.41, vlayer can be also used with ←
    FULLSCREEN
parameter. Output will be scaled to fit whole screen (aspect will
be preserved), But no zoomout/zoomin is possible. If you really ←
    need
zooming with this option enabled let me know, I will try to do
something about it.

    P96   - use the PIP feature of P96 RTG system. It works like
                 VLAYER option, only instead of using cgxvideo.library
                 p96 system is used.

    P96GREY   - same like P96, but in grey.

    GREY   - greyscale output.

    FILE   - store images in iff files. Asl will pop up, to let
                 you select base file name. Small window will be opened,
                 and you will be informed about actual frame processed.
                 output filename looks like this:
                 <basename>.xxxxxx, where base name is name you have selected
                 in asl, and x is frame number (in 6 digit format, ie ←
                     000001,000002,
                 etc).

    ?   - will show you briefly information about available
                 display types.

FULLSCREEN:
 play mpeg in fullscreen mode (instead of window). Works on both
 CGFX and AGA. AGA display is limited to 256 colors, CGFX display support
 all pixel formats (except 8bpp=256c mode) available in cybergfx.library.

 FULLSCREEN can be also used with VLAYER display type, as long as your
 hardware supports vlayers.

LOOP:
 Loops animation.

FPS:
 limit fps. default to use frame rate from stream, any number to limit
 fps.

FORCESTEREO:
 force audio track to be played in stereo. Default to mono, as it is
 much faster.

AUDIO8:
 by default Frogger plays audio in 16 bits per sample mode.
 AUDIO8 will turn on 8 bits per sample decoding (lower quality,
 less cpu power required, may cause problems with synchronization).

VERBOSE:
 turn on warning and other messages printing. default off.
 Also prints information about video & audio streams,
 frame per seconds , skipped frames etc. This option merges

 the old VERBOSE and STATS.

 NOSKIP:
  By default, Frogger skips some frames (if needed) to achieve
  frame rate from stream. NOSKIP will force Frogger to display
  all frames, without skipping. This is not very usefull with
  mpegs that have got audio track (there will be no synchronization).
  Also Frogger will try to display video at maximum possible frame
  rate, So you can use this switch for testing purposes.
  From v1.51, NOSKIP turns audio decoding off.

 MODEBYNAME:
  This parameter let you select screenmode by passing its name.
  like: MBN="Pal:Low Res"
  Note that name must match exactly name that is displayed in asl
  (you can see what names are available using Sys:prefs/ScreenMode
  program)

 AHIUNIT:
  Let you specify AHI unit used for audio playing. Default is 0,
  you can select one of following numbers: 0 1 2 and 3.

 FASTDIRECTCGFX:
  This option will enable faster direct memory access routines on
  cybergfx. Works in both windowed and fullscreen mode. I recomend
  to use this option, whole decoding may be up to 50% faster with
  this option turned on.

 VCDDEVICE:
  Specifies device to use for direct reading videocd disk. Default
  is atapi.device

 VCDUNIT:
  Unit, on which you got your cd drive connected to Amiga.
  Default 1.

 Other options does not work at the moment. Or works, but may cause
 problems.

ToolTypes:

All options available from CLI, are also available as tooltypes.
Take a look at Frogger.info, all tooltyes are already there,
just choose options you like.

Menu:

 See windowed mode. Options available from menu, are also available
 as key shortcuts.

Keyboard:

 ESC   - Quit.
 ESC   - Quit.

```
 +      - Zoom movie in.
 -      - Zoom Movie out.
 O      - Open new MPEG file.
SPACE   - Play/Pause movie.
ENTER   - Eject Movie (Open new MPEG file).
```

Only in windowed mode:

```
 RAmiga + Q - Quit.
 RAmiga + 1 - Set size to 50 %.
 RAmiga + 2 - Set size to 100 %.
 RAmiga + 3 - Set size to 200 %.
 RAmiga + 4 - Set size to screen size.
 RAmiga + O - Open new MPEG file.
```

GUI:

 Gui is right now available only in windowed mode.
  - Slider seeks into movie. Works also with audio enabled.
  - Eject gadget (up arrow) - open new movie.
  - Play gadget (right arrow) - Play/Pause movie.

Other:

 - Window close gadget quits Frogger.

Some words about cgfx fullscreen mode:
You can select any mode you want (as long as the pixel
format is supported). When selected screen size is smaller
than mpeg size, output will be scaled to fit screen size.
When mpeg size is smaller than screen size, output is not
scalled. In both cases you can scale output with '+' and '-'
keys. Aspect ratio is preserved, when scaling is made.

Scaling also works on AGA.

1.7 Bugs

 - fullscreen aga display in 68k version is buggy,
   and does not supports scalling like ppc version.
   It should work now in color mode, however.

 - CTRL-C handling in PPC version does not work. I had to choose
   beetwen working tooltypes or working CTRL-C handling.
   I choose tooltypes...

 - MPEG 2 sequences are dithered wrong (all in green).
   Even more: I have temporary removed MPEG2 support. I will enable
   it again, when I'll be sure that it works correctly.

 - when 68k version is started from icon an output CLI window
   appears, and you have to press enter to continue.

– There is no conversion routine for 8bpp cgfx display.
  Grey display works with this depth, however.

– VideoCD support is in beta stage – tell me if it works
  on your machine.

bug reports should be sent to:

Sebastian Jedruszkiewicz
bjsebo@jota.wi.tuniv.szczecin.pl

1.8 Authors

 Frogger was oryginally created by Miloslaw Smyk

 Now it is beeing developed by:

 Sebastian Jedruszkiewicz
 (bjsebo@jota.wi.tuniv.szczecin.pl)
 main programming.

 and

 Przemyslaw Gruchala
 additional programming,
 68k assembler optimized routines.
 (sensei@box43.gnet.pl)

 Please also look at our new service: Mailing List.

1.9 Future

(higher priority on top)

 – GUI (partialy done)
 – better audio – video synchronization
 – support for HTTP:// protocol.
 – CDI support.

1.10 History

I've lost history file from 1.0 to 1.3.0,
only a quick brief:

 – added sound, overlay, recompiled with egcs, 68k version
   compiled with gcc, some optimizations in ppc asm, some
   optimizations in 68k asm (done by Przemyslaw Gruchala),
   asynchronous disk reading and more...

v1.3.1
  – Sound on/off from menu now works.
  – New AsyncIO routines. Does not requires asyncio.library anymore.
    This is experimental feature, so please be careful with asyncio option.
    Asynchronous reading is now done completly on PPC side.
  – Support for videocd and cdi (experimental). Those files starts with
    RIFF????CDXA. If you got such a movies please check if it can be displayed
    using Frogger. Please contact me if it does not work with your files.
  – 68k version available again.

v1.3.2:
  – Completly new audio routines. much faster, and with some additional
    features (like forcing to mono, or 8 bits per sample decoding).
    based on mpg123 player sources.
  – fixed bug which caused Frogger to crash when decoding last sequence
    picture.

(v1.3.3 and 1.3.4 not released)

v1.3.5:
  – Audio is now played from 'Frogger Audio' task, which means
    that audio decoding is independent from video decoding.
    This gives almost smooth audio playback, now the only thing missing
    is synchronization beetween audio and video decoders.
  – New timing routines, and picture skipping routines. Small mpeg (160x120)
    are now played synchronized with audio track, and almost without
    picture skipping.
  – Added VERBOSE option. Annoying errors will be shown only if this option is ←
     enabled.
  – Fixed bug in audio decoder. Now stereo audio track should
    be played properly.
  – At last removed the sound delay at start!
  – 68k version does not work on 030+FPU. I will fix it, in future.
  – FULL switch has been renamed to FULLSCREEN=FS. It does work on cgfx
    but only with pixel format ARGB (24 bpp) RGB16 (16bpp) and LUT8 (256 colors).
    It also supports grey display.I will add support for more pixel formats soon.
    BTW: It seems that fullscreen 8bpp color mode is faster than windowed
    vlayer! Strange...
  – Movies with width not 16 dividable were played wrong. Fixed.

v1.3.6:
  – AGA Fullscreen support. only 256 colors mode is working right now.
    HAM modes soon.
  – fixed dithering of MPEG-2 interlaced streams (or whatever it is called).
  – fixed args reading, so now MODEID can be passed as decimal (ie. 135168)
    or hexadecimal (ie. 0x21000) number.
  – fixed some small bugs in display code.

v1.3.7:
  – fixed frame rate calculation, and audio synchronization.
  – fixed video overlay support. Output should be now bilinear filtered, when ←
     window is scaled.
  – added AGA fullscreen grey support.
  – fixed audio routines. no more strange sounds, or 2x faster audio decoding.
  – in fullscreen cgfx mode, movie can now be scaled using keyboard.
  – added scalable window output on AGA (Przemyslaw Gruchala).
  – added fullscreen support in 68k version (Przemyslaw Gruchala).

 - fixed bug in window display code, that caused crash on AGA, when
   selected screen was smaller than mpeg size (Przemyslaw Gruchala).
 - Frogger can now automagically detects audio tracks.
 - Fixed bug that caused crash when file name was misspelled.
 - Fixed vlayer support. No more strange stripes on WB, when using
   vlayer on screen.
 - added size scaling from menu (and keyboard).
 - fixed AGA full screen output.
 - added scalable output in AGA fullscreen mode.
 - created Frogger.guide.

v1.3.8:
 - fixed audio track detection.
 - added FORCEAUDIO, in case the autodetection fails.
 - fixed writepixelarray() code. mpegs woth size not 32 dividable
   should be displayed correctly.
 - fixed AGA window display code (PPC version)
 - added tooltypes support (Przemyslaw Gruchala,only 68k version)
 - fixed AGA fullscreen display in 68k version (Przemyslaw Gruchala)

v1.3.9:
 - fixed enforcer hit in window display code.
 - fixed yuv->8bpp conversion in 68k version (Przemyslaw Gruchala)
 - fixed enforcer hit, which appears when end of stream has been
   reached.
 - fixed overlay support.
 - some functions has been written in ppc assembler,
   minor speed increase.
 - fixed bug in audio decoder (joint-stereo layerII was decoded
   wrong).
 - modeid can now be passed as $number (MODEID $21000, or MODEID 0x21000
   or MODEID 135168).
 - fixed tooltype support in PPC version.
 - BUFSIZE parameter now works.
 - Added Vlayer clear code. When frogger is started second time
   in a row, window should be cleared, and will not contains previous
   movie last frame. Also optimized a bit vlayer conversion routine.
 - Added ALLFRAMES switch.
 - optimized audio decoding a bit.

v1.4

 - Audio is now also readed by asyncio routines, which means that
   ASYNCIO is forced to true when audio is detected or forced.
   Also buffer size is set to 256000 when audio decoding is used.
   User can force it to bigger size, but smaller size will be ignored.
 - Changed FROCEMONO to FORCESTEREO. Mono is used by default, because
   it is much faster, and gaves smooth playback even on high bitrated
   mpegs.
 - Added BGR24 pixel format in cgx fullscreen mode.
 - Fixed audio problem: on some mpegs audio was not played, even if
   there was valid audio track. now it should be ok.
 - Fixed again audio detecting routine, now audio should be detected
   correct in every mpeg. If not - contact me ASAP.
 - Added BGR16PC and BGR24 pixel formats. Some pixel formats are available
   only in PPC version, I will make conversion routines for every CPU, and every
   pixel format one day...

- Fixed problems with opening new mpeg (menu->Open item).
- GUI!!! Only in windowed mode, but it is a good start ;)
- fixed problems with multiple video sequences.
- some other small changes and bug fixes.
- removed fps 0 feature.
- added RGB15 pixel format.
- fixed frame skipping. Frogger skipped too many frames - ok my fault.
  Now should be ok.
- optimized vlayer again. result? dead2intro.mpg (176x112 allframes):
  84,5 fps, previous version: 70fps. Not bad, huh?
- applied the same changes to cgx fullscreen and: 84 vs 78 (in 256 colors
  mode).
- optimized grey output in 8bpp fullscreen mode. (107 fps on the above
  mentioned mpg).
- next day: even faster grey output. 116 vs 107 (still the same mpg).
  Added this feature to AGA display as well as cgfx 8bpp display.
- fixed bug, which caused crash on exit in PPC version.
- fixed slider functions, It now works ok (you can seek to any position you want) ↩
     .
  but there are other problems I will fix later.
- Added FBlit support (Przemyslaw Gruchala).
- Added MODEBYNAME parameter. Can be used for specifying modeid by name.
  Sometimes fails to work (Przemyslaw Gruchala).
- fixed version string as requested by some people. also added version string
  to Frogger.guide.

v1.41

- At least fixed the bug that caused Frogger to exit in a middle of StarWars
  Episode I. Now I can watch the whole film ;)
- fixed bug with 'O' hotkey (open movie in fullscreen mode).
- added custom asyncio routines in 68k version. asyncio.library is not
  needed anymore.
- Added vlayer support in fullscreen mode!
- fixed MODEBYNAME parameter. (Przemyslaw Gruchala).
- scaling routines rewroten from scratch. Previous version caused
  a lot of problems. Should be stable now.
- fixed problems with mpegs without valid end of stream code.
- Loop option now works.
- Frogger does not exit at end of the movie now. It waits for user
  action. So you can select next movie. This can by turned off with
  AUTOEXIT parameter.
- Enabled overlayering in 8bpp mode again. It does not work on BVision/CVision.
  on other cards that supports overlayering it should work.
- Added FILE dither type. Instead of displaying frames are saved in iff 24bpp
  files.
- fixed audio synchronization routines. Introduced new bug in audio decoding:
  in small mpegs audio is skipped, and the whole synchronization stops working.
- fixed stats. no more '-3 frames skipped'.
- removed ASYNCIO parameter. ASYNCIO is now always used.
- optimized YUV->RGB conversion in 68k version (Przemyslaw Gruchala).
- Added sound decoding in 68k version.

v1.42

- I made a very stupid bug in 1.41, sorry for that. Asyncio routines
  should work now without problems.

- Optimized cache clearing in context switching. Replaced several
  CACHE_FLUSHALL with CACHE_FLUSHNO, which speeds PPC version a bit.
- recompiled 68k version. Due to the fact that sound causes a lot
  of problems it is disabled in 68k version. I know I promised to
  deliver Frogger with sound support in 68k version, but I just
  dont have time...

v1.43

- Optimized asyncio routines, by replacing memcopy routines with
  two buffers and simple buffer swap operation.
- fixed and optimized timer routines.
- AsyncIO task is now properly closed when new mpeg file is opened.
- Frame rate is now set to 29.970, if there is no valid frame
  rate information in stream.
- Asl requester now remember file path.
- Sound was played only once, when LOOP was used. Fixed.
- Added BGR16PC pixel format in 68k version.
- Optimized grey dithering. Only luminance channel is decoded
  if user requested grey output. This gives about twice faster decoding
  in grey. 68k users will benefit from that ;)
- changed default bufer sizes to: 16384 (when there is no audio track)
  and 32768 when audio track is detected. This gives much smoother
  playback.
- fixed Amiga+4 hot key, window is resized now to screen_height – 1.
- New parametter: AHIUNIT, let you specify your prefered AHI unit.
  default is still 0.
- Optimized video decoding a bit, by using a faster memset replacement.
- changed ALLFRAMES to NOSKIP. This is better name for that switch,
  I think. Also changed DITHER keyword to DISPLAY.
- Cleaned the code a bit. Removed unused functions, executable size is
  smaller.
- Optimized VLAYERGREY conversion routine (1–2%).
- BUFSIZE, FPS, and AHIUNIT parametters were wrong converted, when
  Frogger was started from icon. Fixed.
- New switch: NOVIDEO.
- Optimized IDCT in 68k version.
- Fixed PLL calculation in timer routines.
- Added P96 display.
- I have just discovered, that Frogger fails to find valid audio track
  in some movies. In that case try to increase BUFSIZE (65536 or even
  more). It will be fixed in next version. Also I had to disable audio
  preloading, so it may be not enough data to start audio in the same
  time as video is started. In this case use AUDIO16 and/or FORCESTEREO,
  so the audio buffer will be filled faster, and the sound will be less
  delayed.

v1.44
- fixed an enforcer hit in options parsing routine.
- fixed a bug in block decoding routine. Tt does not caused "bad things"
  but it is better to have it working as it should.
- IDCT is performed on blocks that really needs it. average 10 to 30% of
  blocks in movies does not requires IDCT calculation. Even more in
  grey mode.
- New Frogger icon, for OS3.5 by Patrick Beerhorst.
- New Frogger drawer icon, by Przemyslaw Gruchala.
- Fixed bug which caused recoverable alert at end of movie. I tried

   to free memory that was already free.
 - Added possibility to query for available display types.
   Frogger DISPLAY ? will print short info about available types.
 - added pattern filtering to asl requester. (mpg|mpeg|dat)
 - The files saved when using FILE display type is actually basename_x.iff
   not basename.x, as I wrote before. Sorry for that.

v1.45
 - Optimized yuv-rgb conversion in hi and true color mode.
 - CGFX fullscreen routines has been reworked. They are much faster
   now. The speed increase is noticable only in RGB15, RGB16 and ARGB32
   pixel formats, other may be slower. New conversion routines for other
   pixel formats soon.
 - Talking about the speed: there is new section in this guide, with
   speed tests. Take a look.
 - Fixed bug with too small BUFSIZE. Audio track should be now
   properly recognized in all streams. A minus: BUFSIZE parametter
   is not working anymore.
 - Merged STATS and VERBOSE options together.
 - Enabled audio preloading.
 - Asyncio routines has been optimized a bit.
 - Audio decoder has been optimized. AUDIO16 has been changed to AUDIO8
   and by default audio is decoded in 16 bits per sample. 16bps decoding
   is now almost as fast as 8bps.

v1.47
 - 68k version does not need FPU any more.
 - Fixed XING streams frame rate calculation.
 - FORCESTEREO tooltype did not worked. Fixed.
 - Fixed some enforcer hits.
 - Added audio decoding in 68k version. It is slow. Very slow.
 - Optimized video decoder. Video is decoded about 1-4% faster.
 - Reworked audio routines.
 - Frogger now works under wos, thanks to new ppc.library emulation.
   You will need 0.7a, which is available on Frank Wille home page.
   The one from aminet (0.7) can cause problems when audio is disabled.
   Bacause of some incompabillity with PLL calculation in original and
   emulated ppc.library, I also made a quick workaround to make timer
   routines works under emulation.
 - recompilled everything with gcc 2.95.2.
 - Reworked asyncio routines. New demultiplication routines.
 - There is new programm called Splitter. It splits mpeg system stream
   (system stream is an MPEG with audio and video tracks) into separated
   files.
 - New C2P in PPC version, that supports scaling. Much faster on AGA
   machines when scaling is enabled. Those C2P was made by Jacek
   Cybularczyk.
 - Frogger now looks for FBlit installed in your system (if you got AGA).
   FBlit support is enabled automagically if FBlit was found. If you
   got AGA, please install it, it will speed a lot of things.
 - A bit faster direct CGFX routines. But they may cause problems.
   Please contact me in case of wrong display on CGFX.
 - Two new icons (for os3.5) delivered by Pavel Narozny.
 - A lot of other small changes in both video and audio decoder.
 - Added support for Apple muxed MPEG Media. I found only 2 such a
   streams on net so far, but If you got such a files, you can now
   watch them using Frogger.

  – Temporary removed MPEG2 support. I will enable it again, when Ill be
    sure that it works correctly.

v1.48
  – The new C2P, that can perform image scaling, are now also used
    in windowed mode on AGA. the difference is HUGE.
  – 68k version available.

v1.5
  – Added direct VideoCD support!!! (only in PPC version).
  – There is new mailing list, dedicated to all our programs
    (including Frogger,VisionFX and SoftCinema). To subscribe
    send blank message to: tvision-subscribe@egroups.com and
    then follow the instructions.
  – Fixed an ugly bug in P96 dislay code.
  – Removed BUFSIZE,FORCEAUDIO and AUTOEXIT parametters.
  – New parameter: FASTDIRECTCGFX. It will speed direct video memory
    access routines, but may be dangerous. I have not got single crash
    when using this option, but who knows? If there will be no problems
    with it repoted by users, this option will be enabled by default.
  – Fixed (at least I hope so) bug which caused Frogger to lock at
    end of some movies.
  – Reworked main loop, simplified messages received code. Also I have
    added some new keyboard commands.
  – Fixed slider code. It now 'almost' works, with sound disabled. Also
    Pause/Play now works.
  – +/– keys can now be used also in windowed mode to scale display.
  – switched to faster IDCT code in 68k version. Applied the same
    changes in PPC version. IDCT code is about 10% faster now, But it
    gives only 2–5% overall speedup.
  – Replaced calls to WritePixelArray with my own fast direct routines.
    Also scaling is now done by CPU; ScalePixelArray calls has been
    removed. Windowed mode is now really fast.
  – Added support for every possible pixel format supported by cybergfx.
    However, I have tested only some of them. in case of problems, please
    use VERBOSE option, send me output and (if it is possible) make me a
    screenshot. Almost forgot – there is no conversion for 8bpp cgfx
    screens. But who needs it? However, 8bpp mode works in grey.
    Of course 8bpp mode works on AGA machines.
  – Updated Speed section.
  – Switched back to old pll calculation code. Frogger now needs latest
    ppc.library emulation (v0.7c) if you working under WOS.
  – version string is now y2k compatible ;)
  – It was impossible to exit (in some movies), when LOOP was used.
    Fixed.
  – Again I had to fix main loop, to be able to read multiple video sequences
    movies. It now works ok. Thanks must go to Miroslaw Bagrowski, for
    sending me CD with such a movie.
  – Changed filename format for saving iff images. it now looks like this:
    basename.x, where x is frame number (6 digits: 000001,000002,etc.).

1.51
  – Frogger failed to recognize the RIFF streams (a vcd ripped streams)
    Fixed.
  – Seeking with audio is now possible. May cause deadlocks, so be
    carefull.
  – Frogger crashed when new mpeg was opened. Fixed.

- 'DISPLAY FILE' caused crash. Fixed.
- 68k version available again. 030 version will not be supported
  anymore. Do not ask for that. Buy better CPU.
- 68k version does not need ixemul.library anymore.
- Audio in 68k version is now decoded using the same decoder
  as in PPC version. This is slower, but at least it works.
- Scaling routines in grey mode were broken. Fixed.
- The same bug was in color dithering routines (when image was scaled).
  Fixed.
- On some VideoCDs Frogger failed to decode correct stream resolution
  (it was always 0x0). Fixed.
- From now on, NOSKIP turns off audio decoding.

1.11 Overlay

What is overlay? It is a special feature of gfx card, which have got
a lot of adventages:

- colorspace conversion is done by the card (more cpu power can be
  used for audio or video decoding) mpeg video uses YUV color
  space, and it has to be converted to RGB before displaying.
  In overlay mode this conversion is done by graphic card.

- scaling is done by graphic card. It means ,that you can (in theory)
  scale small window to fit whole screen without speed decrasing.

- Also when output is scalled, graphics card uses bilinear filtering
  to eliminate zoomed pixels.

Frogger supports overlay using cgxvideo.library. This library was
designed to work with CV3D board, but it also works with BVISION/CVISION
cards!!! Remember that it can be used on BV/CV only on screen with depth
>= 15. On other cards (like CV3D) it works in 8bpp mode too.
To use Overlay feature on CV/BV card do the following things:

- install cgxvideo.library (libs: is a good place to hold this file ;)

- in your BVISION/CVISION monitor icon add tooltype:
  VLAYER=DESTRUCTIVE

- reboot.

Now you can enjoy the overlay feature. Remember that this is a hack
and it may cause problems (if running on other screen than WB, some
strange stripes may appears on WB).

1.12 Thanks

I should thanks several people for help, suggestions and bug reports:

- Jacek Cybularczyk, for GUI, and some cool optimizing suggestions.

Also for suggestion how to fix slider code, and the new C2P.

– Stephen Brookes (FBlit author) for suggestions about FBlit support.

– Luca 'Hexaae' Longone for Frogger icon (the new one).

– Patrick Beerhorst for the OS3.5 Frogger icon.

– Pavel Narozny for another 2 OS3.5 icons.

– Patrick Beerhorst for great Frogger home page.

– Miroslaw Bagrowski, for the Armageddon CDs.

– and others I dont remember right now... They know ;)

1.13 Speed

Recently I have made some test, comparing Frogger to 2 other PPC mpeg
players. All test were made on a1200 + 64Mb + 604/200 + 040/25 +
BVision. animations were played from RAM:, audio was disabled.
Here is what I got.

clip1.mpg, size 176x112 900 frames,stream rate 30fps.

```
            Frogger 1.5(1.48)  AMP  Isis

8bpp grey:  150.09 (134.71)    116.86 N/A

8bpp color: N/A (82.66)        76.95  49.04

15bpp:      93.18 (87.37)      75.13  62.68

16bpp:      93.05 (87.12)      75.11  62.99

24bpp:      74.23 (71.58)      67.17  46.05

Overlay:    67.15 (70.13)**   N/T*   55.12
```

* I was unable to run this program in Overlay mode.
** Yes, overlay in window mode is slower, this is due to the fact, that
I've changed the main loop, and there is 2 context switches more in
windowed mode now.

clip2.mpg 352x288 1500 frames,stream rate 25fps.

```
            Frogger 1.5(1.48)  AMP  Isis

8bpp grey:  28.35 (26.10)      21.79  N/A

8bpp color: N/A (15.86)        13.91 10.46

15bpp:      18.21 (17.12)      13.79 16.07
```

```
16bpp:      18.22 (17.12)      13.78 16.02

24bpp:      14.24 (13.85)      12.41 10.87

Overlay:    14.39 (14.56)      N/T*  13.21
```

* I was unable to run this program in Overlay mode.
** Yes, overlay in window mode is slower, this is due to the fact, that
I've changed the main loop, and there is 2 context switches more in
windowed mode now.

Options used:

Frogger: NOAUDIO FS FDC NOSKIP VERBOSE (+DISPLAY GREY in grey test, and
         DISPLAY VLAYER in overlay test).

Version used was 1.5

AMP: REQUESTER SPEEDHACK FRAMERATE 1 (+GRAY in grey test, and OVERLAY
     in overlay test).

Version used was 1.30

Isis: SKIP was set to zero, AUDIO to mute, FRAMERATE to maximum.
      FAST was set to on.

Version used was 2.12

1.14 VideoCD

<!!IMPORTANT!!>
Note that VideoCD support in Frogger is in beta stage. It means
it may crach your machine, or it may not work with your cd drive.
I am looking forward for some feedback, to be able to fix all
bugs related to this feature.
Note also, that only VideoCD is supported at the moment. Reading CDI disks
may not work.
</!!IMPORTANT!!>

 VideoCD is a special format of CD, a bit different than normal ISO CD.
The main difference is, that on VCD disks, block size is bigger that on
normal disks. On ISO cd's it is 2048, on vcd it is 2324 (error corection
block is not present, and it is used for storing data, which gives more
room for video & audio stream). Unfortunally there is no cd filesystem
available for Amiga, that is able to read such a cds. And that was the
reason to do a direct support for such a cds.

How you can get Frogger to work with such a cds?

1) instead of providing a file name to read, type VIDEOCD
(Frogger VIDEOCD other_options)

2) if you are using different device that atapi.device for accessing

CD-ROM add option VCDDEVICE your_device.device. Default is atapi.device.

3) if your cd drive is running on other unit than 1, add option
VCDUNIT <your_unit>. Default is 1.

After a while a small window will popup, with cd contents. you will see
all track available. Select the one you want to view, and click OK button.
Note that usually first track is normal ISO track, and the movie is on
the second track. You will see sizes (in minutes:seconds format), and you
should decide which track is videocd track:

Track1, length 00:08
Track2, length 65:21

For sure the videocd track is track number 2, because i can not imagine a
movie that is only 8 seconds long ;)
(As you can see, there is no track name listed in the window, as soon
as I get some information how to read track name, it will be added).

Note also that I have only tested this feature on ide CD-ROMs, and I can
not guarantee that it will work on CD-ROMs connected via scsi port.

And of course let me know if it works with your CD drive. I have tested
several drives, and it seems that there is no single problem, but shit
happens...

I remember seeing a text somewhere on the net, that it is impossible to
read videocd directly on Amiga, and also information that I should ask
author of filesystem I am using for VideoCD support.
What can I say? Someone was apparently too lazy to write a couple lines of code...

1.15 Mailing List

  We have just started new mailing list, dedicated to all TotalVision
products (Frogger,SoftCinema,VisionFX). To join, send a blank message to

tvision-subscribe@egroups.com

(no subject, or message body needed) then follow the instructions.

  You can also go to egroups.com, to read old articles:

  http://www.egroups.com/lists/tvision