ANES

Fredrik Schultz Johansson

	COLLABORATORS		
	TITLE : ANES		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Fredrik Schultz Johansson	August 26, 2022	

	REVISION HISTORY		
NUMBER	DATE	DESCRIPTION	NAME

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ANES

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```
                                 _     _     _      ____
              /.\      /.\      /.\___   / __/
          _ _/ |_\_ _/ | \_ _/ |___/_/__ \_ _
          |Y   _/  Y   |   Y   _/  Y   |   Y|
          :|   |   |   |   |   |   |   |   |:
           :...:..:..:..:...........:......:


           -$\div$-  Amiga Nintendo Emulator  -$\div$-
                    Version 0.99.98
                        GIFTWARE


                  Development started:
                   8:th of May 1997


                     Created by:


                  Morgan Johansson
                  Fredrik  Schultz


        NOTE: Giftware IS NOT the same as freeware,
            we would really like some support from YOU!



          Documentation
                  The authors cannot be held responsible for any possible
      damage caused by this program. You are using it at your
                      own risk!
```

1.2 -÷×÷- A/NES -÷×÷-

```
          Welcome to A/NES - Amiga Nintendo 8-bit emulator.
```

Introduction
A short introduction to A/NES...

Requirements
What do you need to run this..?

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Shouldn't be a problem...

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Read this if you're a registered user.

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1.3   -÷×÷- A/NES -÷×÷-

TECHNICAL INFORMATION

The following utilities was used during the
development of A/NES.

```
                    * ASM-ONE / ASM-PRO
                    * GADTOOLSBOX
```

```
A/NES consists of more than 17.000 lines of
pure assembly code. The source code (including gui)
is about 300 Kbyte in size.
```

```
The 6502 cpu emulation is NOT based on any existing
source and is written from scratch in assembly, making
special use of the 68020 processor or better.
```

1.4   -÷×÷- A/NES - GUI & Preferences -÷×÷-

```
                    GUI
Explaning about Load / Start ROM is not needed I guess. :)
The "continue" button will let you continue your game
when you have aborted it (by for example pressing the escape-key).
However this button is not entirely reliable yet so use
it with care.
The "Mem" button will bring you to the  Memory Monitor  window.
```

```
PREFERENCES
```

```
Features enabled at this time are:
```

```
        GENERAL

        EMULATION

        MISC

        CHEAT
                  -------------------------------------------------------
```

1.5   -÷×÷- A/NES -÷×÷-

```
    NESA

    NESA (which means "NES AUDIO") and is the new audio-format
    that is supported by A/NES.
    A/NES now allows the user to rip the audio played by the
    ROM and save it to a standard NESA-file.
```

```
Title             - Enter the title of the song in this
                    field (not required).

Comment           - Additional comments here (not required)

Buffer            - This cycle button allows you to change
                    the buffer that are used for ripping
                    audio. Choose between 64K, 128K & 256K.
                    Note! This setting is not activated until
                    A/NES is restarted.
                    When the buffer is filled the audio-
                    ripping will simply stop.
                    Some tunes requires a larger buffer than
                    others (depending on how complex the
                    song is!).

Grab               - Select "Never" if you don't want to rip
                    any audio. Or "Always" and A/NES will rip
                    audio all the time.
                    The F1/F2-mode allows you to press F1
                    for start ripping and F2 to stop.

The Save-button will save your audio to disk.

Note! NESA is a work-in-progress and more functions will
be added in the future.
```

1.6   -÷×÷- A/NES -÷×÷-

```
GENERAL WINDOW


LIMIT SPEED
This function disables all speed-limitation code. So,
if your favourite game always run at 50fps, it should
now run even faster (even if it will probably flicker
even more)....
On 68040/060 you can really enjoy FAAAST NES emulation.
About 2 - 3x NES speed is not unusual... :)
Default = checked


AUTOSAVE BATTERY
Turn this function off if you don't want to save the
battery.
Default = checked

USE BATTERY PATH
As default, all battery files (.sav) will be saved
in the same directory as the .NES file. But when this
box is checked you can have your battery files in
a different directory. Remember to set your default
battery-path by pressing the Battery-button.
```

AUTOSAVE PREFS
When this function is on, preferences-settings will be
saved when you quit A/NES. If turned off, no settings
will be automatically saved.

IGNORE LED
Here is a real usefull option! :D
When this button is cleared, A/NES automatically
takes care of switching on/off the hardware sound-
filter to improve sound quality.
Check this if you don't want A/NES to do that.
Default = cleared

USE COMMENT AS TITLE
When this function is active, the game title will be
grabbed from the file-comment instead of the game itself.
Could be usefull for XPK-packed ROMs.

JOYPAD 1
Selects if you want to use keyboard/CD32 pad for
emulating joypad 1. Support for more pads will be
added later.

JOYPAD 2
Selects between "Disable" or "CD32". You should choose
"disable" if you don't want to use joypad2 (will
save a few cycles) or if you haven't got a CD32
compatible joypad. :)

1.7   -÷×÷- A/NES -÷×÷-

EMULATION WINDOW

VLINES
This is the setting how many lines the NES screen
consists of. Default value is 240 on PAL screens.
Lowering this value can result in weird looking
screens.

VBL-time
How many lines that aren't "on" the screen but is
used for interrupts etc. NTSC-roms works okay
with a value of 25, PAL games often require higher
values (Asterix PAL works with 40).
To improve emulation-speed you can try and decrease
this value <25, some games works, some does not.
Some games require MUCH VBL-time, for example "Elite"
requires about 70(!) VBL-lines.
Correct emulation for NTSC/PAL should be 38/72 VBL-lines

however such high values are often not required and
they will slow down emulation.

HBLANK
Number of cycles / row. Only for advanced users.
Default value is 114.

DEFAULT NTSC/PAL
These button changes the timings to the appropriate
system. Please notice that these values are not
100% accurate.
Today there is nothing in the NES-header telling
if the game is PAL/NTSC (Tell Marat that he should
implement such a bit!), but most dumped ROMS are
for NTSC. However playing certain PAL roms on NTSC
may look weird or may does not work at all. If so
try use the DEFAULT PAL button if you suspect that your
ROM is for a PAL system.

Ignore bad opcodes?
Some ROMs floating around contain flaws (Adventure of
Lolo 1). Check this option if you don't want A/NES to
quit emulation when executing a bad opcode.

EMULATE SOUND
Turn sound emulation on / off. Saves a few cycles
but shouldn't be noticable.

FREQUENCY SWEEPS?
Enable this checkbox if you want to hear the sound
with frequency sweeps. This is VERY primitive so some
games may sound better and some may sound worse.

CHANNELS
There are four separate channels emulated yet by
A/NES. Here you can de-select any channel you don't
want to listen too.
The different channels are squarewave 1, square wave 2,
triangle wave and PCM.
The PCM channel isn't 100% emulated yet but you can
always turn it off if it doesn't sound too good.

VOLUME
Sets the master volume of the sound.

1.8   -÷×÷- A/NES -÷×÷-

CHEAT WINDOW

 ACTION REPLAY INFORMATION

If you look on the left side of this window, you will

```
discover several "string gadgets", they look something
like this:


action replay
.-----------. .-----------.   .-----------. .-----------.
|           | |           |   |           | |           |
`-----------' `-----------'   `-----------' `-----------'


game genie

.-----------. .-----------.   .-----------. .-----------.
|           | |           |   |           | |           |
`-----------' `-----------'   `-----------' `-----------'
```

```
In the Action Replay gadgets you can input Action Replay
codes (really!) :)
You can have four different codes activated at once.

Game Genie codes works just like the ActionReplay codes.
These codes will also be saved along with your saved patch
files.

Note that all values you type are default as HEX code, which
means you don't have to type $-signs or similar. Valid
characters are 0-F, any other characters will be ignored.
Also, be sure to "fill" the entire "string-fields", for example
if you want to "poke" at adress 10, be sure to write 010!


Cheat description - here you type a 64 character
long description of your cheat. This is only usefull if you
want to save your cheat into a special patch (.pat) file,
so you don't have to type your cheatcodes more than once.

Activate - Be sure this button is activated if you
want to use the current cheat codes.

Save - Press this and your current cheat will be
saved as a file.

Load - Loads a cheatfile.


Get filepath - Press this button to select a suitable
path for storing your cheatfiles.
There seems to be some kind of bug left in this code since
the ROM path & cheat files path are mixed sometimes. Nothing
serious though...
```

1.9   -÷×÷- A/NES - Registered Users -÷×÷-

Information for registered users

A/NES is not shareware anymore but it IS giftware (which
is NOT the same as freeware). If you want to support our
project, be sure to support us (read elsewhere in this
guide-file for details).
A keyfile is a nice thing to have since it gives you
certain benefits (like getting rid of the requester when
starting A/NES).

1.10   -÷×÷- A/NES What's new? -÷×÷-

Features

- Full 6502 emulation (incl. ALL timings!)
- Battery backup
- Nice looking gui! :)
- Action Replay/Game Genie code support!
- Sound support
- OCS/ECS support! (AGA recommended!)
- Splitscreen scrolling
- Two player support
- Horizontal/ Vertical / Panning mirroring modes
  supported!
- CD32 joypad support
- XPK support
- Supports the most common mappers (more or less).
- Written in 100% 680x0 assembler code

Note! A/NES only supports loading of XPK packed ROM
files, not battery save files (*.sav).

Compability

A/NES supports several file-formats. The most common
is the iNES-format. A/NES also supports the most usual
memory-mappers and more is added all the time. Even
some fwMapper numbers (non standard) are supported.

Note! fwNES mappers are no standard mappers and
may and probably will be replaced by iNES mapper-numbers
in the near future.

A/NES used to support the FAM4 format aswell, however
as this was very buggy, this is removed and we will
instead add support for the FDS-format in the future.

A/NES also emulates the basic hardware of the
Vs.Unisystem.

1.11   -÷×÷- A/NES Controls -÷×÷-

```
JOYSTICK 1
----------

        When selecting "keyboard" in the preferences window,
        the following keys will work:

ENTER       - Start
RIGHT SHIFT - Select
LEFT AMIGA  - A
LEFT ALT    - B
        ARROWKEYS   - Guess what? :)
        BACKSPACE   - Insert Coin (VS.Unisystem ROMS only!)

        ESCAPE      - Abort emulation


        ... or if you decide to use a CD32 compatible joypad:

        CD32
        ----

        YELLOW      - Start
        GREEN       - Select
        RED         - A
        BLUE        - B
        PAUSE       - Abort emulation


 JOYSTICK 2
 ----------
        Choose between "disabled" or "CD32", that suites you
        the best.
        The keyboard is always locked to joystick 1 and may
        not be used by player 2.
        Always set this to "disable" when not using joystick 2.

        Support for more pads will be added in the future.
```

1.12   -÷×÷- A/NES Bugs -÷×÷-

```
Reporting bugs

Please report bugs to us that causes your computer
to behave strangly. (See our addresses elsewhere
in this guide file).
BUT! Don't report about non-working ROMS!
Many things is NOT emulated properly / yet, so please
have patience...

        When reporting bugs to us, don't forget to mention:
        * Your complete machine setup! (cpu, ram, PAL/NTSC?, etc)
```

And anything else that may be usefull for us to know..

Known bugs/problems

* Games crash when pressing "continue"-button.
* Problems with some MMC's.
* Scrolling wrong / flickers.
* Graphics bugs.
* Sprite flickering.
* CPU emulation bugs.
* PCM sounds weird.

1.13 -÷×÷- A/NES Requires -÷×÷-

Requirements

- OCS/ECS/AGA chipset (AGA is recommended for best performance)
- 68020+
- ~2Mb of Memory
- reqtools.library
- lowlevel.library (if you want CD32 joypad support!)
- xpkmaster.library (for loading XPK files!)

A/NES sometimes have problems to run on unexpanded
A1200 machines, so a fastram expansion is a good
thing to have.
However a 68030/050 should be enough to play most
games at a decent framerate.

NOTE! You can not view the NES title if your ROM
files are packed with XPK.

1.14 -÷×÷- Register A/NES Today! -÷×÷-

If you like A/NES and use it, you may want to become
a registered user by sending us a gift.

By registering and sending us gifts, you will support
us in our effort to develop the *ultimate* NES-emulator
for Amiga.

Although this version of A/NES isn't crippled, we sure
would appreciate some support as it keeps us motivated
to continue further development.

Prefered gifts are of course money. 100 SEK is
a good amount but equal amount in other currency
is of course also appreciated.

```
NOTE: To be considered as a registered user, your
      gift should be worth atleast 100 SEK (US$15).
      In other words, you will not become a registered
      user by sending us a postcard or likewise.

All registered users will recieve a personal keyfile
that will come in handy in future versions of A/NES.

Even if you don't have the money to register or have
already registered, you're more than welcome to send
us an e-mail with some moral-support.


Send gifts to:

 FREDRIK SCHULTZ
 TORGVÄGEN 12b
 715 31 ODENSBACKEN
 SWEDEN

 Send Metallica related stuff to this guy and you've
 got a friend for life! :)

Or

 MORGAN JOHANSSON
 MÖRBY
 715 92 STORA MELLÖSA
 SWEDEN

 This dude is a total NES-Maniac. Send everything
 related to NES to him.
```

1.15   -÷×÷- A/NES Introduction-÷×÷-

```
Introduction

It all started a day in may in the year of 1997. I was
watching Nesticle on a PC machine and started to wonder
why there wasn't any decent NES emulator for Amiga...
So I (Morgan) and my friend Fredrik started this little
project.
We had never done anything like this before so it was
a challenge.
The CPU emulation (it's incredible fast) was written
from scratch in 68020 assembly language and everything
else concerning the emulation is also written in assembly.

Enjoy it, and remember, if you like it and use it,
send us gifts! :)
```

1.16   -÷×÷- A/NES -÷×÷-

The Legalities of Console Copying and Emulation
3-11-97, Copyright Anthony DiPasquale
http://www.pce.net/anthony, anthony@pce.net

   1. Is it legal to create an emulator?
     There has been some discussion on this. To create an emulator
   one must have a high level of knowledge of the source platform to
   be emulated, and the target platform the emulator runs on. To find
   out info about the source, usually takes reverse engineering, of
   the original console, which may be considered illigal.

   2. Is it illegal to run/use an emulator?
     This goes along with the above question. There is debate around
   this as well. The general rule to follow is: You are allowed to
   own/run an emulator, as long as you actually own a corresponding
   hardware device. Example, you own a game boy, so you are allowed
   to run a game boy emulator on your computer.

   3. Is downloading ROM images illegal?
     No, it is not, as long as you own a hardware copy of each rom image
   you download. If you download images you do not own a copy of, you
   are commimiting piracy. By now, I'm sure Nintendo has realized that
   all the game boy game roms have been being illigally copied, that
   being one of the most popular emulators, and they do not seem to care.
   Chances are if you copy a Coleco, Atari, Sega Master System, etc, it
   wouldn't matter too much. The general rule is: If the company is no
   longer collecting royalties, they probably won't mind. Who would pay
   $30 for a Coleco Vision ROM nowadays when you can go out and get the
   latest CD Rom game for about the same? Most people don't pirate roms
   because they are too cheap, they do it because they may miss an old
   game that you could no longer purchase even if you wanted to.

   4. Is storing/distributing ROM images illegal?
     It may not nessisarily be illegal, it is more up to the person who
   downloads the image then the person who provides it. It is a
   questionable practice, and I wouldn't recommend it. Even though you
   may see various web pages and FTP sites doing it, that doesn't make
   it legal.

1.17   -÷×÷- How 2 A/NES -÷×÷-

        Installation

        Use the installer script that is included in this
        archive to install A/NES.

        Thanks for the script, Lennart Johannesson!

1.18   -÷×÷- The future of A/NES -÷×÷-

```
The future

* Who knows....
```

1.19   -÷×÷- A/NES History-÷×÷-

```
History
-------------------------------------------------------
Version:   Released:

    0.99.98b  31/12-98      * Optimized CPU-emulation.
                            * Sound is somewhat improved.
                            * Primitive frequency-sweep
                              support.
                            * Timings can now be changed by
                              the user (PAL,NTSC...)
                            * Improved VS.Unisystem support.
                            * Tons of small fixes/changes.

    0.99.CSX  31/10-98      * Compusphere X release!
                            * NESA title/comments now available.
                            * Added a "ignore bad opcodes" option.
                            * Many small bugfixes/improvements.

    0.99.96b   4/10-98      * NESA-code bugfixed and improved.
                            * Manual NESA-rip mode available.
                            * Added partial fwMapper65 support.
                            * Minor GUI-changes.

    0.99.95b   2/8-98       * Prefs-enforcer hit fixed!
                            * Small prefs-changes.
                            * Improved iNES format supported
                              (Vs.Unisystem).
                            * Battery-files can now be saved
                              into a separate directory.
                            * Fixed an ugly CPU-emulation bug.
                            * Optimised the CPU emulation (+128Kb).
                            * Optimised the PPU code which
                              reduced memory-needs by 192Kb!
                            * NESA sound system added!
                            * Mapper 4 fixes (compability improved!)
                            * Mapper 19 finally works.
                            * Added fwMapper71.
                            * Added fwMapper79.

    0.99.11b  13/6-98       * Changed the memory-monitor.
                            * Optimised the graphics-engine.
                            * Small mapper 3 fixes.
```

```
                                          * Bugfixed mapper 22/23.
                                          * Primitive Vs.Unisystem support.
                                          * Added fwMapper66.


0.99.10a    31/5-98          * Many fixes concerning PCM.
                             * Big bugfix in Mapper1-code,
                               more games work.
                             * Small optimisation in scan-
                               line-counter code.

0.99.9a     7/5-98           * Added PCM sound.
                             * Many fixes in CPU-emulation.
                             * Added memory-monitor.
                             * Background-graphics engine
                               improved.
                             * Many small bugs fixed.


0.99.6b     1/4-98           * Game Genie support.
                             * "Continue"-button implemented.
                             * FAM-fileformat support.
                             * Added mapper 10.
                             * The usual bugfixes...

0.99.5b     22/3-98          * A/NES is now giftware! All
                               features enabled for everyone!
                             * Sound emulation rewritten.
                             * PPU-related bugs fixed.
                             * Other minor fixes.

0.99.1b     31/1-98          * Doesn't crash anymore if the
                               lowlevel.library isn't present.
                               (Thanks to Jesse Livengood for
                               reporting this ugly bug!)


0.99b       25/1-98          * Now supports iNES extended file-
                               format (>16 mappers).
                             * Mapper #34 support.
                             * Mapper #7 bugfixed (works again!)
                             * Partial Mapper #15 support.
                             * Shouldn't crash anymore on exit.
                             * Minor CPU emulation speedup.
                             * Some spritecode optimised.
                             * Interrupthandler (NES) optimised.
                             * Keyboard settings changed.
                             * Spritebugs fixed once again.
                             * Screenmode related code removed
                               since it only caused trouble
                               (for everyone but me? :-)
                             * Filerequester code improved.
                             * Small optimisations here and there.
                             * Minor GUI bugfixes.


0.98b       6/1-98           * Now supports 4 different
```

		ActionReplay codes at once.
		* Major MMC2 improvements. (Punch-Out looks alot better!)
		* MMC3 fixes (SMB3, StarTropics now partially works!)
		* Major spritebug fixed.
		* Small changes in GUI.
		* Minor fixes and optimisations.
0.97b	1/1-98	* Happy New Year edition!
		* Small GUI changes.
		* Minor MMC3 changes.
		* Finally, two player support!
		* ADC instruction optimised!
		* Other minor changes.
0.96b	24/12-97	* Christmas edition!
		* Filerequester code fixed.
		* Minor bugs in docs(!) fixed! :)
		* Small MMC2-fixes.
		* Cheatcodes can now be saved & loaded.
0.95b	14/12-97	* Minor sound improvements.
		* Major GUI bug fixed!
		* Cheat preferences window now implemented.
		* Action Replay codes supported!
0.94b	7/12-97	* Preferences is now available.
		* Nintendo MMC2 (Mapper 9) now finally works!
		* Sprite collision register fixed. Some games works / scrolls much better now.
		* Small changes in soundroutines.
		* Minor changes here and there.
0.93b	22/11-97	* CPU emulation partly rewritten to improve performance on MMC-based games.
		* Now less memory hungry (~1Mb!)
		* Mapper 4 improved.
0.92b	8/11-97	* Versionstring is now correct! (oops!) :)
0.91b	8/11-97	* GUI font-bug fixed (silly!).
		* Bugfixed mapper 1.
		* Lots of other small fixes.
0.90b	1/11-97	* Sprites rewritten (MUCH faster).
		* Splitscreen scrolling.
		* Sound code rewritten.
		* Now in theory works on ECS!
		* Bank switching code optimised.
		* Minor code cleanup.

```
                                    * GUI rewritten!
                                    * A/NES is STILL shareware, so
                                      register today!

0.36b        28/9-97               * Major CPU bugfix!
                                    * Small fixes (as usual!)

0.35b        21/9-97               * Now supports XPK packed files!
                                    * A/NES doesn't eat 1mb of fast
                                      memory anymore when started from
                                      an icon. ;)
                                    * Small changes here and there.
                                    * Small soundfixes.
                                    * Internal version for registered
                                      users only!

0.34b        13/9-97               * Small joypad bug fixed.
                                    * Keyfiles are now supported.
                                    * Minor speedup and fixes
                                      in the spriteroutines.
                                    * Bank-switching code optimized.
                                    * Triangle Wave soundchannel
                                      implemented.
                                    * Minor optimisation in PPU
                                      code.

0.33b         3/9-97               * A small (but major) CPU-bug
                                      fixed!
                                    * CD32 joypad support!

0.32b        31/8-97               * Sound support! (partial)
                                    * A spriteregister wasn't
                                      properly emulated. Fixed now!

0.31b        23/8-97               * FAST version included!
                                    * Mapper #11 supported.
                                    * Small fixes.
                                    * A/NES is SHAREWARE! Support us!

0.30b         5/8-97               * Mapper #4 is now partly supported!
                                    * Mapper #7 supported.
                                    * Mapper #9 now fully supported.
                                    * Minor changes and bugfixes.

0.29b         3/8-97               * Major improvements in the
                                      graphic routines, resulting
                                      in an incredible speedup in
                                      some games.
                                    * Minor fixes.

0.28b        27/7-97               * A register wasn't properly
                                      emulated. Fixed now! (some
                                      games works alot better!)
                                    * Battery backup functions
                                      added!
                                    * Mapper #1 emulation improved
                                      and bugfixed (ALOT)!
```

```
                                  * The filerequester now remembers
                                    where you "left it" the last
                                    time (saved in S:ANES.prefs).
                                  * Small CPU emulation bugs fixed.

        0.27b      19/7-97        * Mappper #1 emulation improved
                                    but not yet perfect.
                                  * 8x16 sprites supported.
                                  * Some emulation bugs fixed.
                                  * GUI changes/fixes.
                                  * File requester routines bug-
                                    fixed once again.
                                  * And some other changes...

        0.26b      13/7-97        * Keyboard handler a little bit
                                    improved.
                                  * File requester should now
                                    work properly (phew!)
                                  * ESCAPE is now used to abort
                                    the emulation.

        0.25b      12/7-97        * Damn! Bugfixing the previous
                                    version resulted in another
                                    bug. The "cannot click any
                                    button" bug should now have
                                    been removed

        0.24b      12/7-97        * Major improvements in the
                                    keyboard handler!
                                  * Mapper #1 partly supported!
                                  * Minor GUI fixes.
                                  * Small CPU bugs fixed.

        0.23b       8/7-97        * Minor fixes.
                                  * Some GUI-NTSC problems fixed.

        0.22b       8/7-97        * Shouldn't crash anymore if
                                    started from an icon.

        0.21b       6/7-97        * Fixed some minor stupid bugs!
                                  * 50 FPS speed limit for fast
                                    computers. (Could cause very
                                    annoying flickering if framerate
                                    was more than 50FPS).
                                  * We're still at SCC'97 and we have
                                    just found out that we won the
                                    democompo! :)

        0.20b       6/7-97        * Released at the SCC '97 party
                                    held in Köping, Sweden.
                                  * Mapper 2 and Mapper 3 supported.
                                  * Many bugfixes.
                                  * Sprite routines optimised.
                                  * Colours now look better.

  0.10a      30/6-97  * First official beta release!
```

1.20   -÷×÷- A/NES -÷×÷-

Authors of A/NES:

MORGAN JOHANSSON
MÖRBY
715 92 ST.MELLÖSA
SWEDEN

computer : A1200T, Blizzard PPC 603e/200 & 040/25,
           64Mb Fast, 6.4Gb HD, CD-R 2/8.
e-mail   : morgan.johansson@mbox301.swipnet.se

guilty of: 6502 CPU emulation
           Sound
           Mapper support
           ROM-handler
           Gfx in general
           Bugtesting (and finding most of them)

FREDRIK SCHULTZ
TORGVÄGEN 12b
715 31 ODENSBACKEN
SWEDEN

computer : A1200, Blizzard 68030/50,
           32Mb Fast, 4.3Gb HD.
e-mail   : fredrik.schultz@swipnet.se

guilty of: 6502 CPU emulation
           GUI
           Gfx in general
           Sprite & Scrolling
           Some bugfixing

Also big thanks to
  Dew / Limited Edition - for fixing the keyboard handler!

1.21   -÷×÷- Frequently Asked Questions -÷×÷-

Frequently Asked Questions

Q: When will A/NES PPC be released?

A: Dunno!

Q: Why is not Mapper5 supported?

A: Mapper 5 (or MMC5) is an incredible device that almost
   turns your NES into a new machine. It's VERY complex
   and the question is if it's ever going to be emulated
   properly.

Q: Why is there graphics errors in Punch Out using
        mapper 9?

A: Mapper 9 isn't entirely supported yet. Some of it's
   code has been removed (for now) in this version (0.99.9a)
   since it wasn't 100% correct anyway.

Q: My action replay codes doesn't work. Why?

A: Could be due to several reasons:
   1) Check your spelling. Is it 8 characters long?
   2) The code may be ROM based, and this does not
      work yet in A/NES
   3) The action replay code may be for a different
      version of the game and may not work with yours.
   4) Is the "activate" switch on? :)
   5) Bugs in our code? :) :)

Q: A/NES just quits when I try to start it. Why?

A: Check that you have installed the included font in
   your FONTS: directory properly.
   Do you have enough memory available?
   Also, do you have the required 68020 processor?

Q: Why do I get an 'XPK ERROR' message?

A: You are trying to load an XPK packed file, that is
   either corrupt or simply, you don't have the
   xpkmaster.library and it sub-libraries installed in
   your LIBS: drawer.

Q: Why is A/NES written in assembler and not C?

A: There is enough slow c-ports out there, don't you think?

Q: I keep getting a "FAILED" message what does that mean?

A: Well, the game has tried to execute an invalid assembler
   instruction. This is probably not caused by the game itself,

```
it is just caused by bugs in our emulator. :)
Or it can also happen if you have an incorrect keyfile
available.
```

Q: It doesn't work correctly on my NTSC system.

A: Hopefully most of those problems will be fixed in the future.

Q: In some games, the graphics looks very strange.

A: Yes. This could be the result of an unsupported (or not
   an entirely supported) Mapper chip.

1.22   -÷×÷- A/NES Greetings to: -÷×÷-

```
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Lennart Johannesson, Leo Flavum, Marat Fayzullin, Nate_DAC,
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+ everyone that has supported us this far in our project.
Especially thanks to those which have registered / sent us
gifts! Thanks guys! We won't forget you!
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