

gsplus



Modern cross-platform Apple IIgs emulator and tools based on KEGS

Manual Version: Initial Draft

Date: 2016-05-01

Overview & Purpose

This is an early release of an experimental project to modernize the KEGS/GSport emulator platform and eventually extend it.

The first steps are represented here. This release features a new SDL2 driver. SDL or "Simple DirectMedia Layer" enables the writing of one cross-platform driver to handle input and output (video, mouse, keyboard, audio, joystick). The hope is that I can leverage the multi-platform nature of SDL to provide first-class support for the major platforms supported by SDL, which includes Mac OSX, Windows and Linux.

Currently, five builds are being supported:

- OSX (SDL2 driver)
- Ubuntu (SDL2 driver)
- Ubuntu (SDL driver)
- Ubuntu (X11 driver)
- Window (Win32 driver)

There are more platforms still in the codebase, and some, like Raspberry Pi will probably be added to official support. But I may drop some of the older platforms like OS/2.

Getting started

1. Download the emulator and put it in a folder
2. Download the Apple IIgs Firmware ROMs, for either a ROM01 or ROM03 machine. (If you have a real IIgs, there are ways to save it from your machine as well.)
3. Download some Apple IIgs software. (I recommend the excellent Apple IIgs dedicated site, <http://www.whatisthe2gs.apple2.org.za/>)
(If you have a real IIgs, you can transfer your disks using ADTPro <http://adtpro.sourceforge.net/>)
4. Edit your config:
 - a. By hand... edit the config file (config.txt, config.gsplus, or .gsplus)
 - b. While the emulator is running... hit F4 to enter config menu.
5. Boot the Apple IIgs by running the emulator
 - a. Windows: `gsplus.exe`
 - b. Mac/Ubuntu: `./gsplus`

Emulator Hot-Keys

There are several keys used to interact with the emulator while it is running. Here's a quick list of the main hot-keys and what they do.

- F4** - Configuration menu
- F5** - Config menu
- F6** - Toggle System Speed (1, 2.8, 8, ∞ MHz)
- F7** - Toggle Fast Disk Emulation
- F9** - Invert Paddles
- F10** - Toggle a2vid_palette (?)
- F11** - Toggle Fullscreen Mode
- F12** - RESET Key (i.e. - "Ctrl-F12" = "Ctrl-Reset" on an Apple II)

Other Input/Output

1. Mouse and keyboard should automatically work

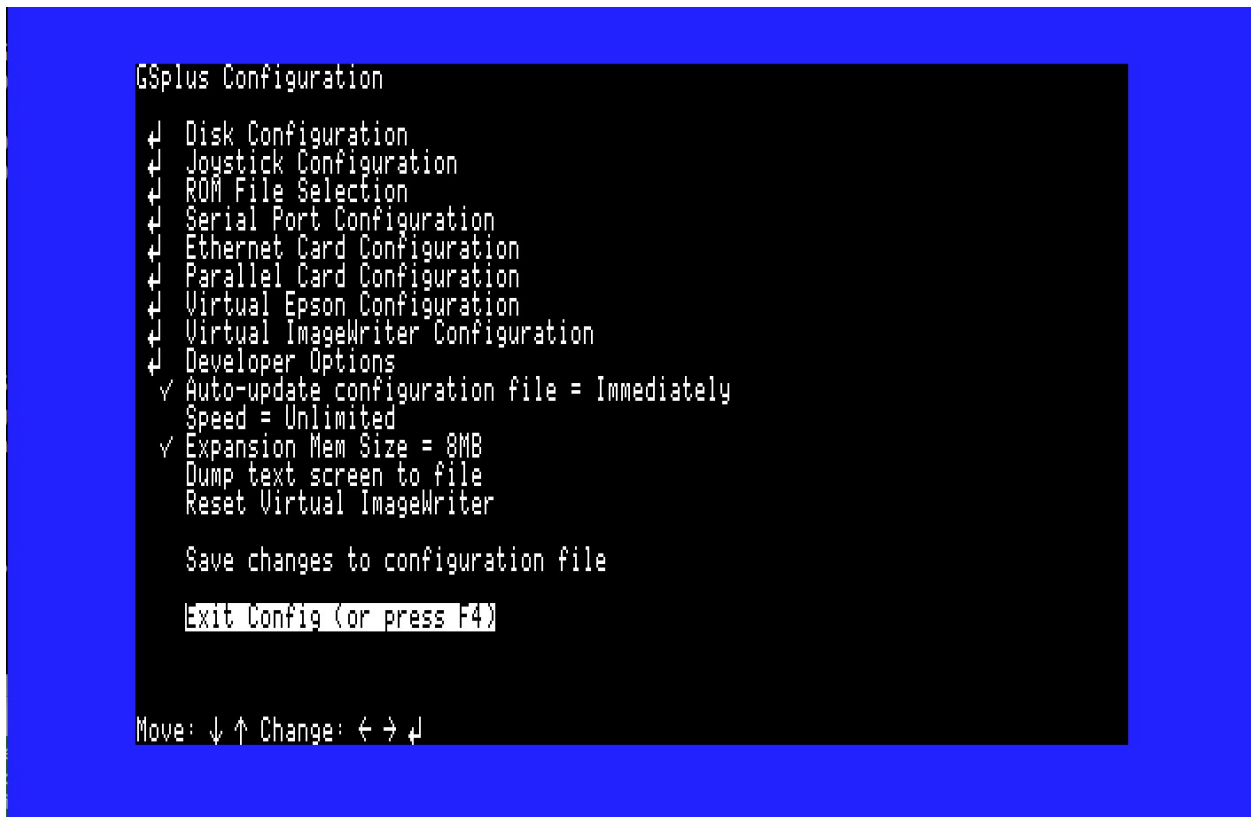
- Joystick with SDL2 driver is known to be working. The axes and buttons are not yet configurable. Better info forthcoming.
- There are drivers for serial controller, ImageWriter (II?) printer, and networking. I'm not currently familiar with the state of these drivers or their usage. More info will be added as I take time to research more of the modules.

Configuration Menu

Enter the configuration menu at any time while running gsport by hitting <F4>.

The configuration options are loaded from, and saved to, a configuration text file. The file can be named one of the following: *config.txt*, *config.gsplus*, or *.gsplus*.

If you are just starting out, it's recommended to use the configuration menu versus editing the file yourself.



Most important, you can use the Disk Configuration menu option to "mount" and "eject" disks.

Command-line Options

This is from source, some are experimental and not all may be built on your system.

-badrd	Halt on bad reads
-noignbadacc	Don't ignore bad memory accesses
-noignhalt	Don't ignore code red halts
-test	Allow testing
-hpdev	Use /dev/audio (HP/UX?)
-alib	Use Aserver audio server
-24	Use 24-bit display depth
-16	Use 16-bit display depth
-15	Use 15-bit display depth
-bw	Force B/W modes
-joystick	Ignore joystick option
-noshm	Don't use X shared memory
-dhr140	Use simple double-hires color map
-mem <i>value</i>	Set memory size to <i>value</i>
-skip <i>value</i>	Set skip_amt to <i>value</i>
-audio <i>value</i>	Set audio enable to <i>value</i>
-arate <i>value</i>	Set preferred audio rate to <i>value</i>
-v <i>value</i>	Set verbose flags to <i>value</i>
-display <i>value</i>	Set X-Windows DISPLAY= <i>value</i>
-enet <i>value</i>	Set ethernet to <i>value</i>
-config <i>value</i>	Set config file to <i>value</i>

Note: The final argument, if not a flag, will be tried as a mountable device.

Debugger Commands

Enter from the debugger prompt (Shift-F6)

GSport Debugger help (courtesy Fredric Devernay)

General command syntax: [bank]/[address][command]

e.g. 'e1/0010B' to set a breakpoint at the interrupt jump pt

Enter all addresses using lower-case. As with the ligs monitor, you can omit the bank number after having set it: 'e1/0010B' followed by '14B' will set breakpoints at e1/0010 and e1/0014

g	Go
[bank]/[addr]g	Go from [bank]/[address]
s	Step one instruction
[bank]/[addr]s	Step one instr at [bank]/[address]
[bank]/[addr]B	Set breakpoint at [bank]/[address]
B	Show all breakpoints
[bank]/[addr]D	Delete breakpoint at [bank]/[address]
[bank]/[addr1].[addr2]	View memory
[bank]/[addr]L	Disassemble memory
P	Dump the trace to 'pc_log_out'
Z	Dump SCC state
I	Dump IWM state
[drive].[track]I	Dump IWM state
E	Dump Ensoniq state
[osc]E	Dump oscillator [osc] state
R	Dump dtime array and events
T	Show toolbox log
[bank]/[addr]T	Dump tools using ptr [bank]/[addr] as 'tool_set_info'
[mode]V	XOR verbose with 1=DISK, 2=IRQ,4=CLK,8=SHADOW,10=IWM,20=DOC, 40=ABD,80=SCC, 100=TEST, 200=VIDEO
[mode]H	XOR halt_on with 1=SCAN_INT,2=IRQ, 4=SHADOW_REG, 8=C70D_WRITES
r	Reset
[0/1]=m	Changes m bit for I listings
[0/1]=x	Changes x bit for I listings
[t]=z	Stops at absolute time t (obsolete)

S	show_bankptr_bank0 & smartport errs
P	show_pmhz
A	show_a2_line_stuff show_adb_log
Ctrl-e	Dump registers
[bank]/[addr1].[addr2]us[file]	Save mem area to [file]
[bank]/[addr1].[addr2]ul[file]	Load mem area from [file]
v	Show video information
q	Exit Debugger (and GSport)

Project Info

Developers inquire within :P

Main page and full source code repository: <https://github.com/digarok/gsplus>

This project has an ugly unmaintained homed at <http://apple2.gs/plus/>

