RetroArch Android (v0.9.8)

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January 24, 2013

Contents

1   Introduction

RetroArch Android is an app that has been designed to run and play:

- Games

- Emulators

Emulators and games that can be run on RetroArch come in the form of pluggable 'engines' which are called 'libretro ports'. The version that you just installed already has most of the full library of 'cores' preinstalled.

2   Disclaimer

RetroArch Android is released for free and will always be free. There are no ads (push or otherwise), there is no 'spying' going on in the form of analytics or collecting stats, there is no 'paid DLC', and on and on - all the unsavory and bad aspects of this 'new generation of computing' are not to be found here. It will never be sold with a pricetag - not even disguised as a 'donationware version'. If you happen to have 'paid' for RetroArch Android or a derivative of it, you have been scammed and you should probably demand your money back from the scam artist in question (and scam artists they are).

Just because the GPL allows people to make derivative copies of RetroArch for commercial purposes does not mean that we support it or even approve of it. If you sell RetroArch or a derivative copy of it for any commercial purpose, you are part of the problem and you need to be learnt a quick lesson in etiquette. Note to any 'entrepeneurs' out there that might be tempted by this 'easy route to makin' some money' - I honestly wouldn't bother - we will undercut you by offering this all for free and doing a better job at it to boot. That and I severely doubt you can come up with many trinkets that will persuade people to throw away their money on a derivative version when they can have it all for free to begin with - just saying - save yourself the time and the effort, because it isn't going to work out.
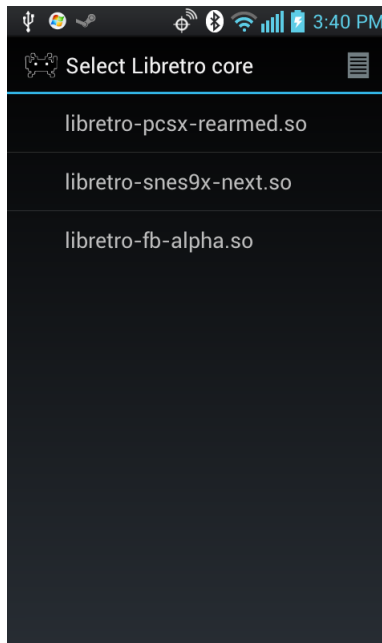
Figure 1: Select a core from this menu.

3 How to run

3.1 Select a core

A 'libretro core' supports games with certain extensions. Below you will find the list of cores that came preinstalled with this app and what file extensions they support.

- SNES9x Next
  Used for: playing SNES games (Super Nintendo Entertainment System)
  Author(s): SNES9x team, OV2, Bearoso, zones, Squarepusher (fork)
  Recommended system requirements: ARM Cortex A9 multi-core device (and up)
  Extensions: "smc|fig|sfc|gd3|gd7|dx2|bsx|swc|zip|SMC|FIG|SFC|BSX|GD3|GD7|DX2|SWC|ZIP"

- VBA Next
  Used for: playing Game Boy Advance games
  Recommended system requirements: ARM Cortex A9 multi-core based device (and up)
  Author(s): Forgotten, VBA-M team, Squarepusher (fork)
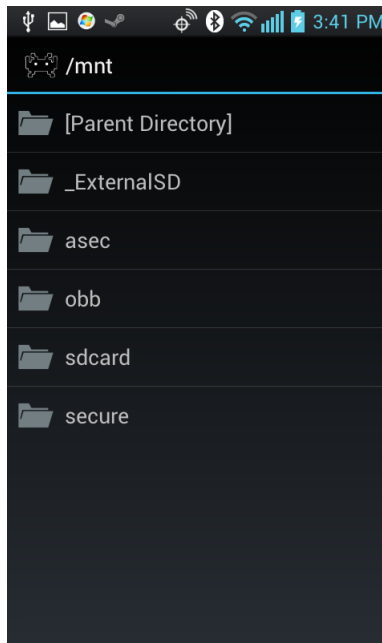 Extensions: "gba|GBA|zip|ZIP"

- FCEUmm

Figure 2: After selecting the core, you will need to load a game.

Used for: playing NES games (Nintendo Entertainment System)
Author(s): CaH4e3, original FCEU authors
Extensions: "fds|FDS|zip|ZIP|nes|NES|unif|UNIF"

- NEStopia
  Used for: playing NES games (Nintendo Entertainment System)
  Author(s): Marty
  Extensions supported: "nes|NES|zip|ZIP|fds|FDS"

- Gambatte
  Used for: playing GameBoy / GameBoy Color games
  Author(s): Sinamas
  Extensions supported: "gb|gbc|dmg|zip|GB|GBC|DMG|ZIP"

- Final Burn Alpha
  Used for: playing arcade games
  Author(s): Dave, FBA Team (Barry Harris & co)
  Extensions supported: "zip|ZIP"

- Genesis Plus GX
  Used for: playing Sega Genesis / Master System / Game Gear / Sega CD
  games
  Author(s): Charles McDonald, ekeeke

Extensions supported: "md|smd|bin|cue|gen|zip|MD|SMD|bin|iso|
ISO|CUE|GEN|ZIP|sms|SMS|gg|GG|sg|SG"

- NX Engine
  Used for: playing Cave Story / Doukutsu Monogatari
  Author(s): Caitlin Shaw (rogueeve)
  Extensions supported: "exe|EXE|zip|ZIP"

- PCSX ReARMed
  Used for: playing PlayStation1 games
  Author(s): PCSX Team, Notaz, Exophase (GPU plugin)
  Extensions supported: "bin|cue|img|mdf|pbp|cbn"

- Prboom
  Used for: playing Doom, Doom 2, Ultimate Doom, Final Doom, and mods
  Author(s): Various
  Extensions supported: "WAD|wad|IWAD|iwad"

- Mednafen NGP
  Used for: playing Neo Geo Pocket Color games
  Author(s): Original Neopop authors, Ryphecha
  Extensions supported: "ngp|NGP|ngc|NGC|zip|ZIP"

- Mednafen WonderSwan
  Used for: playing WonderSwan / WonderSwan Color / WonderSwan Crystal games
  Author(s): Original Cygne authors, Ryphecha
  Extensions supported: "ws|WS|wsc|WSC|zip|ZIP"

- Mednafen Virtual Boy
  Used for: playing Virtual Boy games
  Author: Ryphecha
  Extensions supported: "vb|VB|vboy|VBOY|bin|BIN|zip|ZIP"

- Mednafen PC Engine
  Used for: playing PC Engine / Supergrafx 16 / PC Engine CD games
  Author: Ryphecha
  Extensions supported: "pce|PCE|sgx|SGX|cue|CUE|zip|ZIP"

Select one of these cores in the menu.

3.2   Select a game

After you have selected a core, you will need to select a compatible game from
the filebrowser. It will then attempt to load the core with that specific game.

Figure 3: 'Gamepad overlay' screen.

4 Controls

4.1 Touchscreen overlay

RetroArch Android uses an overlay as a 'mock' gamepad to play with. The 'overlay' controls will always be bound to Player 1.

4.2 Touchscreen menu navigation

Each touchscreen overlay has a couple of screens that can be navigated to. To go to the next screen of the overlay, you press the 'circle' icon at the bottom.

Most of the overlays that come bundled with RetroArch Android have the same screen order.

4.2.1 Gamepad screen

You can control the game with this screen. Illustrated is a controller called 'RetroPad'. It is laid out like a SNES pad with PlayStation-style shoulder buttons.

4.2.2 Quick Menu screen

The actions on this screen have various effects on the game currently running.

Figure 4: 'Quick Menu' screen.

- LOAD STATE - Load a save state from the currently selected save state slot.

- SAVE STATE - Save state to the currently selected save state slot.

- STATE MINUS - Go back one save state slot.

- STATE PLUS - Go forward one state slot.

- REWIND - Rewind the game in real-time. Note - the 'Rewind' option needs to be enabled at the Settings menu or else this option won't work.

- SLOWMOTION - Press and hold this button to let the game run in slow-motion.

- RESET - Resets the game/system.

- FAST FORWARD - Fast forward the game in real-time.

- NEXT SHADER - Load the next shader in the folder (NOTE: only if shaders are enabled)

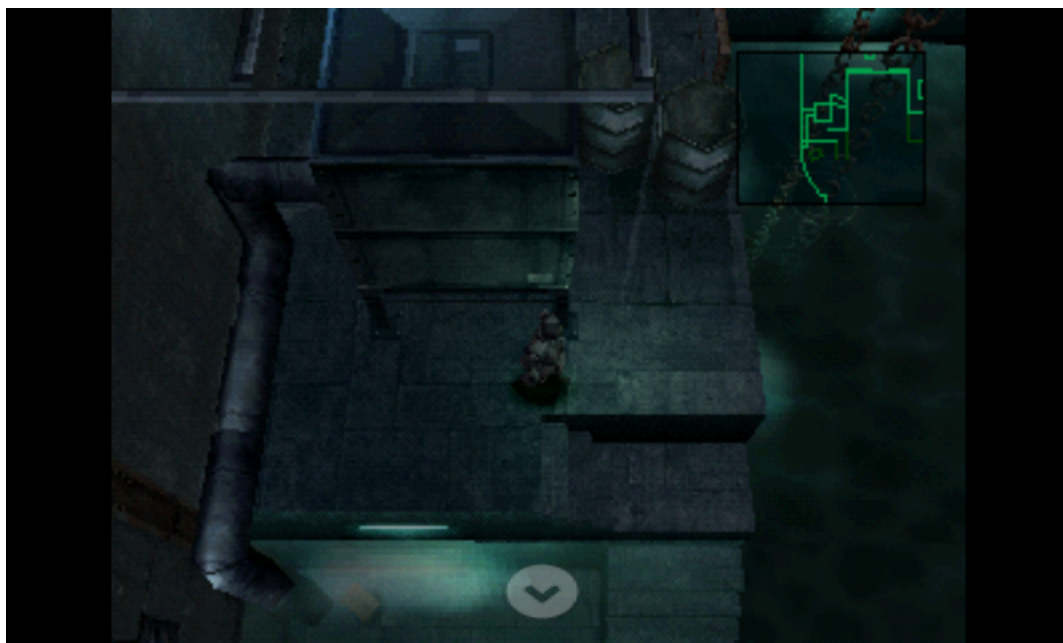- PREVIOUS SHADER - Load the previous shader in the folder (NOTE: only if shaders are enabled)

Figure 5: 'Gameplay' screen.

4.2.3 Gameplay screen

This screen is useful for when you are playing with an USB or Bluetooth gamepad but you would still like to have access to the Quick Menu or Gamepad screen without outright disabling overlays. If you press the 'icon' at the bottom of this screen, you will go back to the 'Gamepad' screen'.

4.3 Variations

RetroArch Android comes packaged with a number of different-looking overlays. You can select from a number of different overlays in the Settings menu. Below is a list of different overlays:

4.3.1 Making your own custom overlays

You can make your own custom overlays for use with RetroArch Android. If you want to learn how to do this, you should read the 'Overlay Guide'.

4.4 USB gamepads

Next to the standard touchscreen input, RetroArch Android autodetects and autoconfigures various input devices automatically. Most of these are USB joysticks/gamepads.
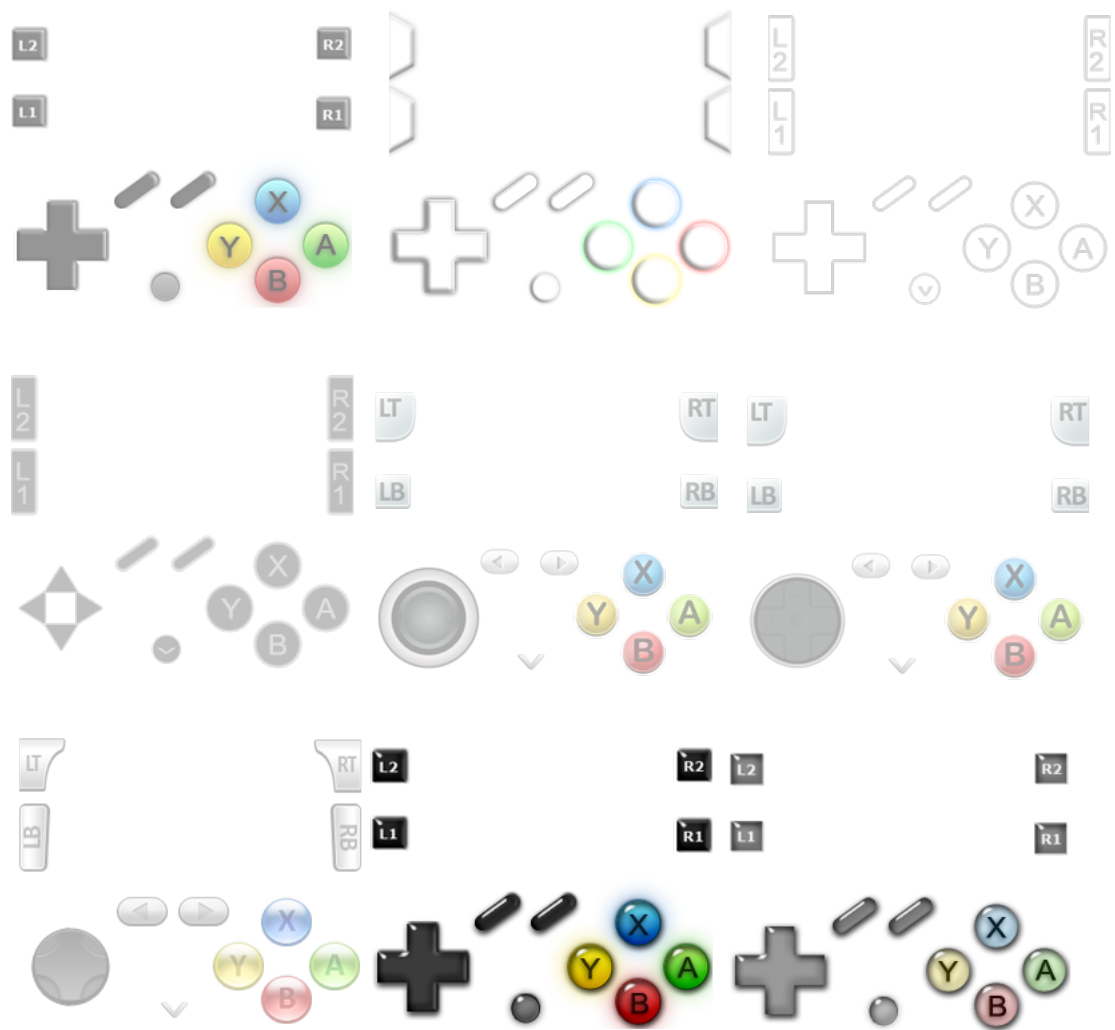
Figure 6: All the default overlays packaged with RetroArch Android.

Here is a list of the gamepads that are supported (plug-and-play style):

- PS3 DualShock3

- MOGA

- Logitech Rumblepad 2

- Microsoft Sidewinder

- PS2 to USB converter (WiseGroup)

- SNES to USB converter (HuiJia USB)

- Sega Saturn USB pad

- Toodles 2008 ChImp

- Sony Xperia Play (Zeus)

- Mayflash Wii Classic to USB converter

You connect the device to your tablet/phone. You press a button while ingame. If your pad is supported, it should bring up a message saying: "RetroPad #? detected: " and then the name of the device it found. Buttons and control layout will then be autoconfigured and mapped to the RetroPad layout.

4.4.1 Unsupported gamepads

If your pad is unsupported, it will likely show "Unknown HID" instead. If you want this pad supported, contact us.

4.4.2 Notes

If a USB gamepad that is listed above does not work immediately, your controller may require a powered USB hub or perhaps a HID driver may be missing of sorts.

4.5 Bluetooth

RetroArch supports Bluetooth right now only through the use of IME apps. A couple of IME apps are supported by RetroArch Android - if you use the default key layouts with the IME apps listed below, your pads will be automatically configured:

- Dancing Pixel Studios SixAxis Controller `https://play.google.com/store/apps/details?id=com.dancingpixelstudios.sixaxiscontroller&hl=en`

- `https://play.google.com/store/apps/details?id=com.ccpcreations.android.WiiUseAndroid`ccpcreations.Wiiuse.Android
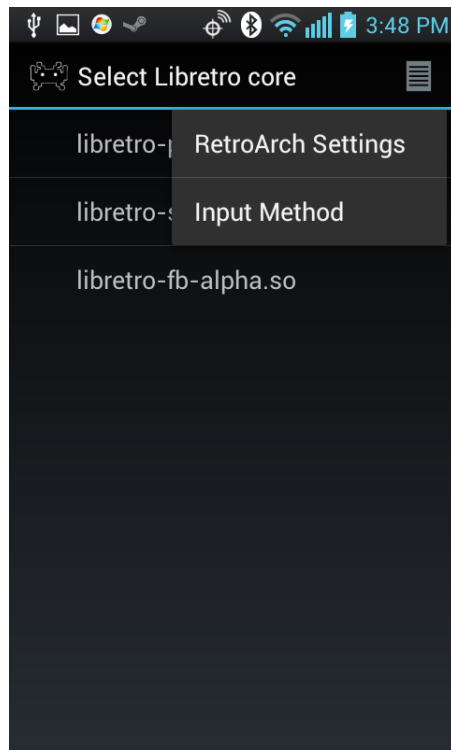
Figure 7: Setting an IME app from the RetroArch menu by clicking on the 'Settings' icon.
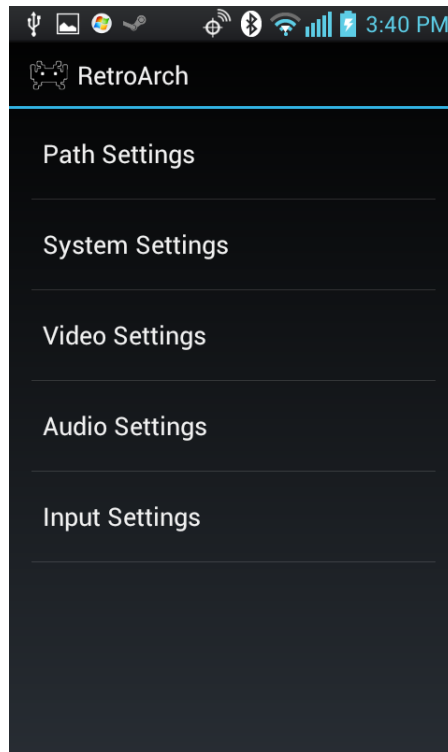
Figure 8: 'Settings' menu.

Remember that you will have to change your Input Method to the needed IME first before starting RetroArch. This can also be done from the menu by clicking on the top righthand side 'Settings' icon and then selecting 'Input Method' (see image).

4.6 Notes

When using PS3 controller via Bluetooth, use SixAxis adapter app and after you've got the controller setup, make sure to go to menu then preferences and then Game pad settings, and enable Gamepad. This turns it into a native android controller and no IME switch is needed. Same for the MOGA controller via bluetooth, make sure to use the MOGA Universal Driver and not the one that MOGA recommends. In the app, make sure 'Enable left analog input' is checked, and that it's in System Mode to make it a native gamepad for android and no need to switch IMEs.
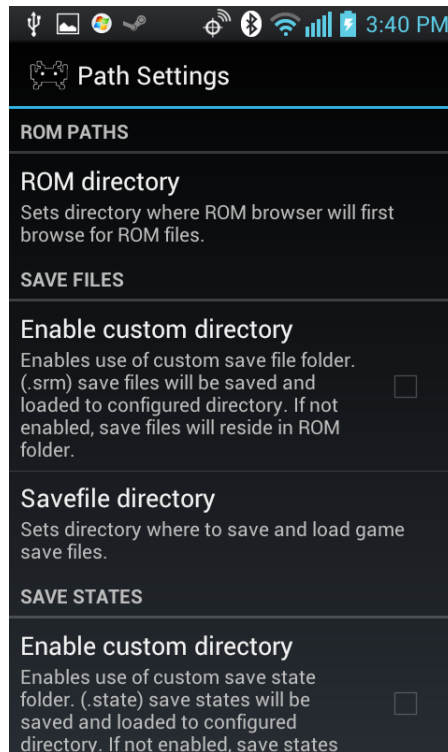
Figure 9: 'Path Settings' screen.

5 Settings

You can configure many aspects of RetroArch. To go to the Settings menu, click on the 'Settings' icon at the top righthand side of the screen and then select 'Settings'.

5.1 Path Settings

- ROM Directory
  Set the directory that will be used as a default starting point for the filebrowser.

- Save Files - Enable custom directory
  Enables use of custom save file folder. (.srm) save files will be saved and loaded to the configured directory. if not enabled, save files will reside in ROM folder.

- Save Files - Savefile directory
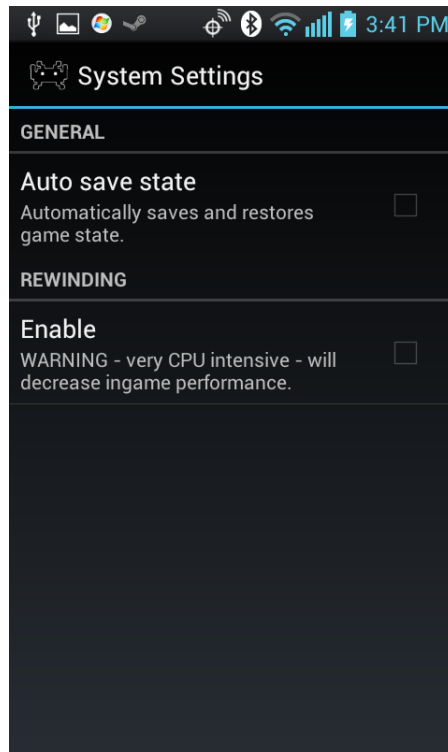 Sets directory where to save and load game save files.

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Figure 10: 'System Settings' screen.

- Save States - Enable custom directory
  Enables use of custom save statefolder. (.state) save states will be saved
  and loaded to configured directory. If not enabled, save states will reside
  in ROM folder.

- Save state directory
  Sets directory where to save and load game save states.

5.2   System Settings

- Auto save state
  This will make a save state when you exit the game. This auto savestate
  will be automatically loaded the next time you start up the
  game. Useful for on-the-go gaming.

- Rewinding Enable
  This allows you to rewind the game in real-time to undo 'mistakes' you
  made while playing the game. (NOTE - this is very CPU intensive - you
  should only enable this if the core is running at least 2x realtime on your
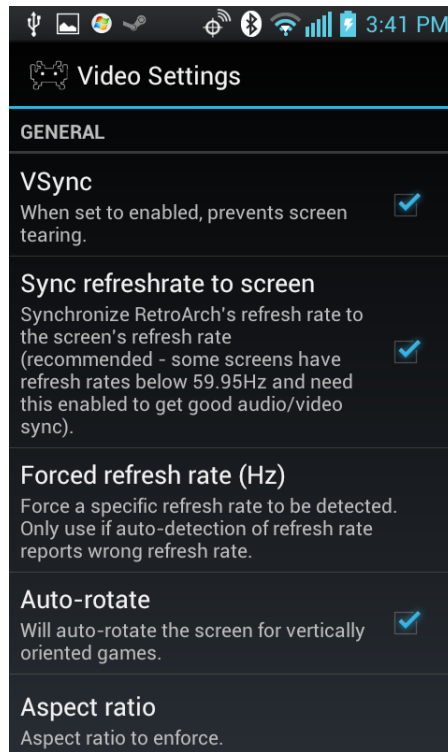 system).

Figure 11: 'Video Settings' screen.

5.3   Video Settings

- Vsync
  Unchecking this will cause screen tearing but faster performance.

- Sync refreshrate to screen
  Synchronize RetroArch's refresh rate to the screen's refresh rate (recommended - some screens have refresh rates below 59.95Hz and need this enabled to get good audio/video sync).

- Forced refresh rate (Hz)
  Force a specific refresh rate to be detected. Only use this if auto-detection of refresh rate reports wrong refresh rate.

- Auto-rotate
  Will auto-rotate the screen for vertically oriented games.

- Aspect ratio
  Select the aspect ratio to enforce.

- Shaders (1st pass) Bilinear filter
  Applies bilinear filtering, smooths out edges (setting still apply even if no shader is selected).

- Shaders (1st pass) Enable
  Enable the currently selected shader.

- Shaders (1st pass) XML Shader
  Select this option to select a shader from the filesystem. RetroArch comes prepackaged with a collection of shaders.

- Shaders (Multi-pass) Render-to-texture
  Render first pass to a texture (FBO). Stretch to screen with second shader.

- Shaders (Multi-pass) Enable shader #2
  Enable custom shader or use after rendering to FBO.

- Shaders (Multi-pass) XML shder (2nd pass)
  Sets shader to use for second-pass.

- Shaders (Multi-pass) FBO Scale
  Scale to use when rendering to FBO.

- Shaders (Multi-pass) Second-pass bilinear filtering
  Use bilinear filtering on FBO texture on second pass.

- Enable on-screen fonts
  Enable rendering of on-screen fonts for system messages.

5.3.1   Notes on shaders

The shaders that come prepackaged with RetroArch Android come from the PS3 and Xbox 360 ports of RetroArch. Unfortunately, most Android GPUs are very weak compared to the ones inside the PS3 and 360 - so most of these shaders will run extemely slow on nearly all Android devices right now. To make these shaders usable we will have to wait until GPUs on Android-powered devices catch up with PS3 and 360.

They will make for good GPU benchmarks in the meantime - these shaders are far more intensive on the GPU than the trivial 'shaders' used in commercial games - which are mostly used for menial tasks instead of applying an expensive image-enhancing algorithm to the entire screen like the 'shader filters' seen here.

5.4   Audio Settings

- Audio Enable
  Uncheck this to disable sound.

- Dynamic Rate Control
  Dynamic rate control tries to prevent sound pops by dynamically adjusting samplerate. It is recommended that you leave this on for RetroArch Android.
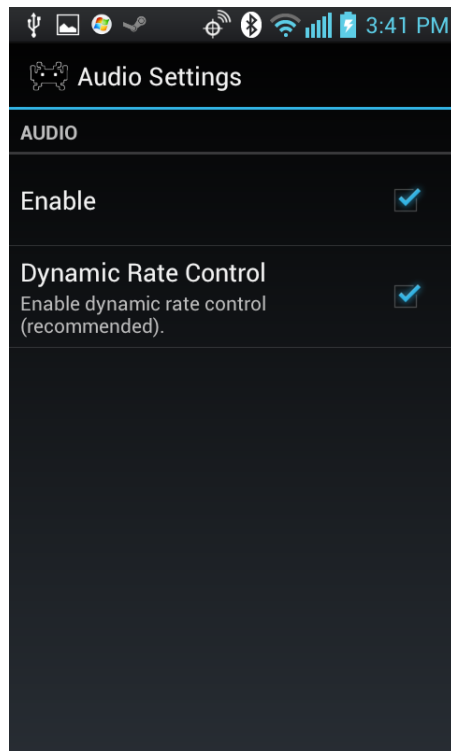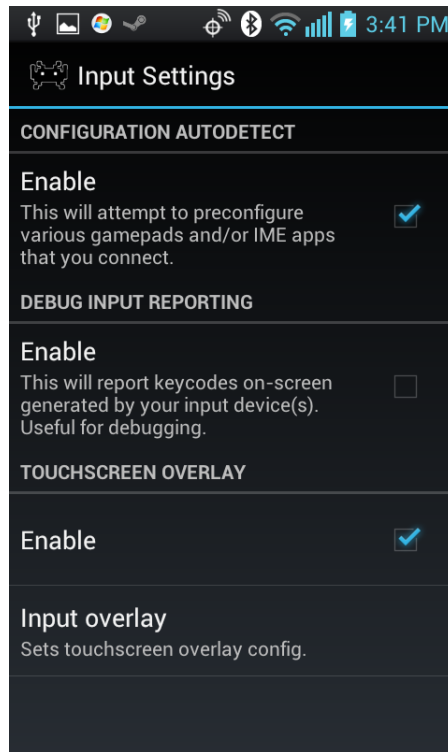
Figure 12: 'Audio Settings' screen.

Figure 13: 'Input Settings' screen.

5.5   Input Settings

- Configuration Autodetect Enable
  This will attempt to preconfigure various gamepads and/or IME apps that you connect.

- Debug Input Reporting Enable
  This will report keycodes onscreen generated by your input device(s). You should use this option when you want us to support a gamepad that you use. You should use this option then to see which keycodes are generated by all the buttons on your gamepad/input device and then report this back to us.

- Touchscreen Overlay Enable
  You can disable the overlay system entirely by disabling this.

- Input overlay
  You can select a different overlay by choosing this option.

6 RetroArch on other platforms

RetroArch isn't only available for Android. It is available on other platforms as well, including:

- PlayStation3

- Xbox 1

- Xbox 360

- Wii/Gamecube

- Raspberry Pi

- PC (Mac/Linux/Windows)

And it will be ported to even more platforms in the future. You might even see the libretro cores running in XBMC shortly.

7 About Us

Homepage: http://www.libretro.org
IRC: #retroarch at freenode
Github (libretro organization): https://github.com/libretro
RetroArch @ Github: https://github.com/Themaister/RetroArch
Libretro @ Twitter: https://twitter.com/libretro
Libretro @ Facebook: https://www.facebook.com/libretro.retroarch

8 Credits

RetroArch Android
   Hans-Kristian Arntzen (Themaister)
   Daniel De Matteis (Squarepusher2/Twinaphex)
   Michael Lelli (ToadKing)
RetroArch Android contributions
   Meancoot
   Opium2k (overlay images)
Thanks to
   Notaz (PCSX ReARMed libretro port - RetroArch ARM Linux patches)
   FBA Team (for adopting libretro upstream - FBA)
   Ekeeke (for adopting libretro upstream - Genesis Plus GX)
   CaH4e3 (for adopting libretro upstream - FCEUmm)
   Rdanbrook (for adopting libretro upstream - NEStopia Undead)
   XBMC devs (for adopting libretro vis a vis RetroPlayer)
   Zeromus