

Sony PlayStation

The PlayStation (frequently referred to in shorthand as the PS1 or PSX) is a fifth generation console released by  [Sony Computer Entertainment](#) on December 3, 1994 in Japan and September 9, 1995 in the US. It was retailed for \$299.99. It had a R3000 CPU (which was used by NASA for a space craft to take pictures of Mars because of its reliability) at 33.8688 MHz with 2MB of RAM and 1MB of VRAM. It used a proprietary MDEC video compression unit, which is integrated into the CPU, allowing for playback of full motion video at a higher quality than other consoles of its generation. It also had a superior digital-to-analog converter than most CD players at the time.

It was a commercial success, partly due to Sony encouraging third-party developers with affordable dev-kits, being relatively easy to program for (compared to others at the time) and because its CD-based media was cheaper than the competition.

shortname	psx
emulator/core(s)	duckstation libretro/mednafen_psx libretro/pcsx_rearmed libretro/swanstation
rom format(s)	.cue .img .mdf .pbp .toc .cbn .m3u .ccd .chd .iso

Emulators

Duckstation

[DuckStation](#) is focused on playability, speed, and long-term maintainability. The goal of the emulator is to be as accurate as possible while maintaining performance on a broad range of devices. “Hack” options are discouraged, and the default configuration should support all playable games with only some of the enhancements having compatibility issues. 64-bit CPUs are required for recompiler support for maximum performance.

Batocera uses the latest standalone version of Duckstation. Runs also very fast on lower end x86_64 systems.

Configuration

setting	description	recommendation
psx.duckstation_threadedpresentation	Turns on threaded rendering for Vulkan. Presents frames on a background thread when fast-forward or V-sync is disabled. Considerably improves performance.	1
psx.duckstation_vsync	Turns on V-sync to avoid screen tearing. Introduces a negligible amount of input delay. Has a heavy performance impact.	1

setting	description	recommendation
psx.duckstation_frameskip	Skips frames to improve performance. Values: 0 for off, 1 for on.	0
psx.duckstation_PatchFastBoot	Enhancement. Skips the BIOS boot animation. Some games require the animation to function correctly, most can skip it fine. 1 to skip, to show.	0
psx.duckstation_resolution_scale	Enhancement. Multiplies the internal rendering resolution. Extreme performance cost. Values: 1 through 16.	1
psx.duckstation_antialiasing	Enhancement. Applies MSAA or SSAA to smooth out jagged edges on 3D object polygons. Most noticeable at lower resolutions. Does not affect textures. The sharp edges of polygons are usually masked by the blurry video output of the PSX, but digital displays may feature them more prominently. This can alleviate that. The PSX does not have any native anti-aliasing. Enabling this can cause rendering errors. Cheaper than multiplying the rendering resolution, but not by much. Values: 1 for native, 2 for 2x MSAA, 4 for 4x MSAA, 8 for 8x MSAA up to 32 for 32x MSAA. Then, 2-ssaa for 2x SSAA, 4-ssaa for 4x SSAA up to 32-ssaa for 32x SSAA.	1
psx.duckstation_texture_filtering	Enhancement. Applies texture filtering to textures on 3D objects. Minimal performance cost. Values: Nearest for native, Bilinear, BilinearBinAlpha for bilinear (no edge blending), Jinc2, Jinc2BinAlpha, xBR or xBRBinAlpha.	Nearest
psx.duckstation_CropMode	Zooms in the display to hide black borders. Not all PSX games have the same sized black borders. Values: None, Overscan, Borders.	Overscan, unless you know the game has thicker borders than usual.

setting	description	recommendation
psx.duckstation_widescreen_hack	Enhancement. Widescreen hack. Very glitchy. Only works when using a 16:9 video mode and with bezels (decorations) disabled. 0 for disabled, 1 for enabled.	0 Recommended to use game patches instead. Some games natively support 16:9 in their in-game options.
psx.duckstation_region	Changes the region of the emulated console. Region-locking is disabled so setting this isn't necessary, but some games will run at weird framerates if using out-of-region consoles. Values: PAL, NTSC-U or NTSC-J.	Auto, as in delete the line.
psx.duckstation_60hz	Enhancement. Forces 50Hz PAL games to run at 60Hz. Has issues with certain games that tie framerate to logic, but most games (ones that use a variable FPS) should be fine.	0
psx.duckstation_custom_textures	Enhancement. Uses the hires texture pack for the game, if any. 0 for off, normal to load from disk as needed, preload to load textures into RAM first (increases boot time).	0
psx.duckstation_rumble	Activates rumble on supported controllers. Requires the Dualshock controller, Namco GunCon or NeGcon and a compatible game.	1 Safe to leave enabled.
psx.duckstation_digitalmode	Activates Joystick to D-pad, allowing the Joystick to function as a virtual D-pad. Useful for games that only support the digital controller. 1 to enable.	0
psx.duckstation_multitap	Enables multitap for the specified port(s). Values: Disabled, Port1Only, Port2Only or BothPorts.	Disabled, not all games utilized it.
psx.duckstation_Controller1	Values: None, DigitalController, AnalogController, AnalogJoystick, NamcoGunCon, PlayStationMouse or NeGcon.	DigitalController

setting	description	recommendation
psx.duckstation_Controller2	Same as above but for port 2.	Same as above.

Other configuration settings must be configured from within Duckstation's standalone emu-config (F1 on the systems menu > Applications).

libretro/mednafen_psx

[Beetle PSX](#) is a standalone fork of Mednafen PSX to the Libretro API. Offers a lot of options to enhance graphics and geometry. Highly recommended for x86_64 systems with a decent GPU.

Configuration

setting	description	recommendation
psx.beetle_psx_skip_bios	Show BIOS animation when starting content.	Can be disabled for the most games but should be enabled for copy protected PAL games .
psx.beetle_psx_cpu_freq_scale	Enable overclocking (or underclocking) of the emulated PSX's CPU. The default frequency of the MIPS R3000A-compatible 32-bit RISC CPU is 33.8688 MHz; running at higher frequencies can eliminate slowdown and improve frame rates in certain games at the expense of increased performance requirements.	Can lead to audio and video desynchronization on certain games. Leave at default for most games.
psx.beetle_psx_internal_resolution	Resolutions higher than 1x (native) improve the fidelity of 3D models at the expense of increased performance requirements. 2D elements are generally unaffected by this setting from the core's perspective.	Set to 4x for near 1080p resolution, depending on your hardware specs and personal preferences.
psx.beetle_psx_widescreen_hack	Forces content to be rendered with an aspect ratio of 16:9. Produces best results with fully 3D games. Can cause graphical glitches or alignment/stretching issues in games that mix 3D and 2D elements.	Leave off for most games. You must use a 16/9 ratio and disable bezels.

setting	description	recommendation
psx.beetle_psx_frame_duping	When enabled, provides a small performance increase by redrawing/reusing the last rendered frame (instead of presenting a new one) if the content of the current frame is unchanged based on the internal fps heuristic.	May cause inaccurate behavior or lost animation frames, so it is not recommended to use this unless necessary.
psx.beetle_psx_cpu_dynarec	Dynamically recompile CPU instructions to native instructions. Much faster than interpreter, but CPU timing is less accurate, and may have bugs.	Disable it if you have a powerful system. Enable it if you experience slowdowns.
psx.beetle_psx_dynarec_invalidate	Some games require Full invalidation, some require DMA Only. This option has no effect when CPU Dynarec is not enabled.	Enable it if you experience problems.
psx.multitap_mednafen	Enables/Disables multitap functionality and allows up to 8 players.	Only enable when needed.
psx.beetle_psx_controller1	Enable rumble support for games that support DualShock.	Enable it by default and disable it for games not supporting analogue controls by choosing 'Digital Controller'.
psx.beetle_psx_controller2	Same as above but for port 2.	Enable.

libretro/pcsx_rearmed

[PCSX ReARMed](#) is an optimized PCSX fork for ARM based systems like the Raspberry Pi, but also works on x86.

Configuration

setting	description	recommendation
psx.show_bios_bootlogo	Shows the BIOS boot animation when starting the game. In PCSX ReARMed, this can cause some games to break when turned on.	disabled
psx.frameskip_pcsx	Skip frames to improve performance. Can cause motion sickness if set to high values. Values: 0, 1, 2 or 3.	0
psx.neon_enhancement	Enhancement. Doubles the internal rendering resolution. Values: disabled, enabled or enabled_with_speedhack.	disabled
psx.multitap_pcsx	Enables multitap on the selected port. Values: disabled, port1, port2 or port12 for both ports.	disabled, most games don't utilize multitap.

setting	description	recommendation
psx.game_fixes_pcsx	Enables a per-game fix. Values: Capcom_fighting, Chrono_Chross, Dark_Forces, Diablo_Music, Lunar, InuYasha_Sengoku, Pandemonium or Parasite_Eve.	Auto, as in erase the line. This shouldn't need to be changed if the game has been successfully scraped.
psx.controller1_pcsx	Select what type of controller is connected to port 1. Values: 1 for digital, 261 for analog, 517 for dualshock, 260 for Namco Guncon, 773 for Negcon, 258 for Playstation Mouse .	1 Other controllers may not be compatible with certain (usually older) games, especially dualshock.
psx.controller2_pcsx	Same as above but for port 2.	1 As above.

libretro/swanstation

[swanstation](#) is the libretro version of the standalone emulator [DuckStation](#).

Swanstation shares its configuration with Duckstation, but omits `threaded_presentation`, `vsync`, `frameskip`, `region`, `custom_textures`, `rumble`, `digital_mode` and `multitap` (correct as of v31). These settings can still be adjusted with RetroArch's Quick Menu (Hotkey+)

ROMs

Place your Sony PlayStation ROMs in `/userdata/roms/psx/`.

The recommended format to save space while maintaining full compatibility is [CHD](#).

Playing PAL copy protected games

PAL copy protected games need a SBI Subchannel file next to the bin/cue/chd files in order to get past the copy protection:

```
Game (Europe).bin
Game (Europe).cue
Game (Europe).sbi
```

For proper PAL game compatibility, the 'Skip BIOS' core option needs to be set to off.

Multi disc games

To automatically load the next disc of a game, you can use a .m3u playlist file. To make one, simply create a text file with the same filename as your intended game name (it could be anything, really). Within that text file, write the names of the .cue sheets or .chd files for your game discs. For instance, if your game's .cue sheets were structured like

```
roms/  
-psx/  
--Final Fantasy VII (Disc 1).cue  
--Final Fantasy VII (Disc 1) data.bin  
--Final Fantasy VII (Disc 2).cue  
--Final Fantasy VII (Disc 2) data.bin  
--Final Fantasy VII (Disc 3).cue  
--Final Fantasy VII (Disc 3) data.bin
```

you would put the following as text into the Final Fantasy VII.m3u text file:

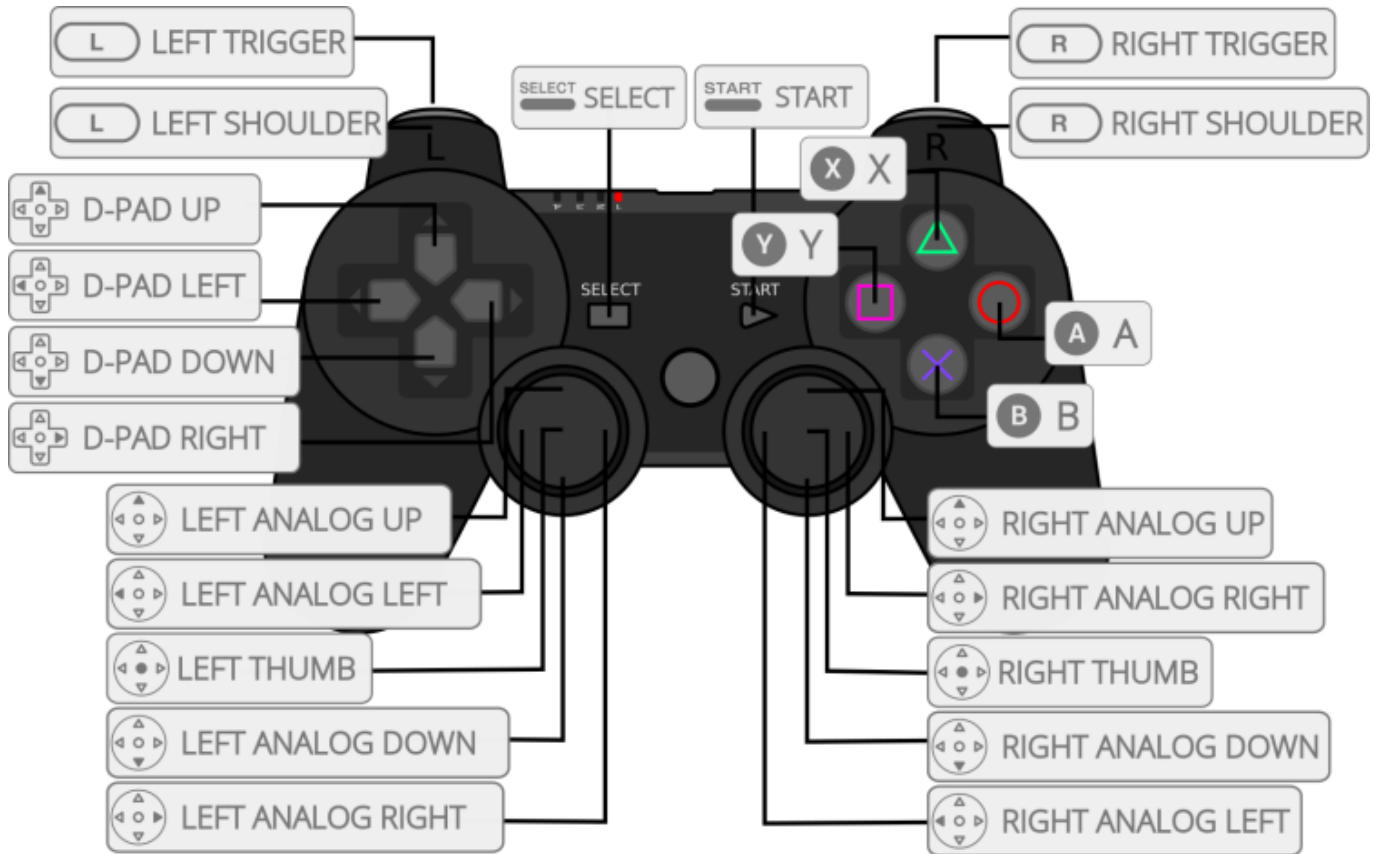
```
Final Fantasy VII (Disc 1).cue  
Final Fantasy VII (Disc 2).cue  
Final Fantasy VII (Disc 3).cue
```

Save the text file with the file extension .m3u and place it in the psx folder along with the game's discs. When you get to the end of that disc, the next disc will be automatically loaded. If this fails, you can utilize Retroarch's 'Disc Control' menu in the Quick Menu (Hotkey+South button in-game) to eject a disc and insert another (Swap Disc is for legacy purposes and should not be used).

Controls

The PlayStation had many types of controllers throughout its life, starting with the digital controller which only had a D-pad, face buttons and shoulder buttons, then the Analog controller which added two joysticks to the center and finally the Dualshock which added vibration. A game needs to explicitly support a controller to function with it. The Analog and Dualshock controller had an "Analog" button to switch between being its native self or a virtual digital controller so it could function with older games; this is generally not emulated yet so the best recommendation is to stick with digital controllers unless you know your game explicitly supports a later one. By default, Batocera will enable Joystick to D-pad so that the joystick will function as a virtual D-pad.

The default button mapping to the PSX controller is as follows:



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