



# Twister OS

Version 1.7

Presented by Pi Labs

The best of Raspbian X, iRaspbian, Raspbian 95, and Raspbian XP, all in one place!

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## INTRODUCTION

Twister OS is built upon the 32-bit version of Raspberry Pi OS.

Requirements:

- Raspberry Pi 4: 1, 2, 4, or 8 GB model
- A 16 GB or larger micro SD card
- 1080p capable display (recommended)
- Mouse and keyboard

A Raspberry Pi 3 will boot with Twister OS, but you may need to enable the OpenGL driver from `rpi-config` and remove PulseAudio if audio quality is bad. PulseAudio is used because it uses the best OSS wrapper for gaming, but using ALSA for audio control may be necessary on the Raspberry Pi 3 if audio quality suffers when the OpenGL driver is enabled. If needed, this can be accomplished by entering `sudo apt remove pulseaudio` in a terminal window.

The theme elements are composed from various themes and other projects on GitHub. Some of these elements have been modified to varying degrees, and some were created from scratch.

Twister OS is the successor to Raspbian X Nighthawk Edition and iRaspbian.

The main motivation for this image is to have our favorite emulator, Box86, and RetroPie installed at the same time. Box86 may be integrated into RetroPie in the future, but who knows if or when that may happen?

There is no overclock enabled by default, but we recommend overclocking if you have sufficient cooling, especially overclocking the GPU. The version of RetroPie installed was designed for the Raspberry Pi 4. You will need to reinstall it if you want to use it with a Raspberry Pi 3.

## FIRST STEPS

1. The default password for the pi and root accounts is `raspberrypi`. We strongly recommend changing both the user (pi) and root passwords.
  - The user (pi) password can be changed via the "Raspberry Pi Configuration" app, or by typing `passwd` in a terminal window.
  - The root password can be changed in the Terminal by entering `sudo passwd`. You can use the same password for both accounts, if you wish.

2. We also suggest using the "Raspberry Pi Configuration" app (or go to the terminal and type `raspi-config`) to set your location, time, and wi-fi location.
3. Run `sudo apt update` in Terminal to update the software repository packages database, and check for available software updates. If updates are available, you can use `sudo apt upgrade` to install them and keep your Raspberry Pi OS up-to-date.
4. Since the May 2020 release of Raspberry Pi OS, the Raspberry Pi audio outputs (HDMI and 3.5mm audio jack) are now treated as separate hardware devices in the OS. Creative workarounds are no longer necessary to switch between audio outputs. To switch between them, left-click once on the "speaker" icon in the system tray, select "Audio mixer," and click the checkmark icon to the right of the output you wish to use; "Analog Output" for HDMI, or "Headphones" for the 3.5mm audio jack.
5. For the games included, set your display resolution to 720p or run them windowed.
6. To enable auto-login and eliminate the need to enter a password upon boot, use the "Raspberry Pi Configuration" app found in the application menu.

**Note:** The governor on the taskbar is just to show which CPU governor is currently in use. To change it, use the shortcuts found in the applications menu; type `performance` in the applications menu and it will appear. You can do the same for the `ondemand` and `powersave` modes.

## THEMETWISTER

This is what gives "Twister OS" its name!

- The "ThemeTwister" app allows you to quickly and easily change between Raspbian X, Raspbian X Nighthawk Edition, iRaspbian, iRaspbian Dark, Raspbian 95, Raspbian XP, and Twister OS desktop theme styles.
- Change the look and feel of your Raspberry Pi as often as you like, and customize it to your taste!
- And if your tweaking gets out of hand, don't worry, you can always restore the original theme settings via the "Restore Twister Theme Config" app, found in the Settings menu.
- The GUI for ThemeTwister was developed by kreal. More information on kreal's projects can be found on his GitHub page: <https://github.com/krishenriksen>

## LIGHTPAD

LightPad (formerly slingscoid) is the main application launcher used in the iRaspbian theme. It can be launched by clicking on the "rocket" icon in the dock. If you are using the full Twister OS v1.2 or newer operating system image (not a patched previous version), you can launch LightPad by simply pressing the "F4" key as well.

We would like to extend a big "thank you" to Juan Pablo for his previous work on slingscoid, and especially for the custom development work that he did to develop LightPad for Twister OS.

Please support Juan Pablo's continued work by visiting his GitHub site: <https://github.com/libredeb/lightpad>

## CHROMIUM MEDIA EDITION

Chromium Media Edition is included for playing DRM-enabled content from video streaming services (Netflix, Disney+, Hulu, etc.), however, be sure to use the normal Chromium Web Browser for regular web browsing, as it is more stable.

## BOX86

Box86 is a Linux x86 emulator for armhf platforms developed by Ptitseb (and it's under heavy development). Box86 will allow you to run Linux x86 (not x86\_64) games that use OpenGL 2.1 and below on your Raspberry Pi 4.

After refining support for Steam/Unity/Mono applications, Wine x86 is on the ToDo list for enabling the running of Windows x86 apps. Additionally, Box86\_64 is also planned for ARM64 (to emulate x86\_64 apps).

Box86 has its own dynarec (under heavy development), and provides i386 (AKA x86) library wrappers for native armhf use, boosting performance, and also making it easier to set up apps & games.

For many games you will need to set your desktop display resolution to 720p to get 60 fps (like the included games), but also remember to set the CPU governor to “performance” just to avoid unnecessary problems. Overclocking doesn’t fix the need for resolution adjustments. The Raspberry Pi 4 GPU is just simply not that fast, but Mesa and Box86 development will improve this performance over time.

For some reasons related to the CPU governor, some lightweight games may require the use of the “performance” CPU governor. This is not because Box86 is demanding, but because the dynarec is working too hard on low end titles, and the Raspberry Pi 4 “ondemand” CPU governor interprets Box86 as a light task, and gives it background priority. This has an impact on gameplay and can be fixed by setting the CPU governor to “performance.”

To set the CPU governor to “performance,” use the shortcut found in the application menu (you can just type `performance`, `powersave`, or `ondemand` in the application menu search field, and click the desired option). Alternatively, you can disable the dynarec to wake the CPU on lower-end games by running `BOX86_DYNAREC=0 box86 <yourgame.x86>` from the terminal in the game’s folder.

For games that use S3TC texture compression, this feature is supported in the newer Mesa drivers included in /home/pi/mesa. These drivers are preloaded by default in Twister OS. Alternatively, gl4es can be used instead. If you wish to force the use of gl4es for a particular game, you can do so by adding the following text to the game’s execution line: `LD_LIBRARY_PATH=/home/pi/gl4es box86 <yourgame.x86>`

You can measure the framerate of any OpenGL app using Mesa and/or Box86 by adding the following text to the game’s execution line: `GALLIUM_HUD=simple,fps box86 <yourgame.x86>`

You can create scripts for that or edit the start.sh of your games and place `export GALLIUM_HUD=simple,fps` anywhere before the game execution lines in the script. That way you can use the shortcuts on your desktop that GoG and Humble installers place out of the box with the environments you like.

“Update Box86” and “Restore Box86” application shortcuts have been included in order to avoid possible regressions of Box86 development that may impact the ability to enjoy your games normally.

Because it is under continual development, update Box86 regularly. You always have the option to restore from backup if a nuclear disaster happens with Box86 development!

## WINE X86 (BETA)

Wine x86 is included for running 32-bit Windows applications through Box86. This functionality is currently in beta, and not all 32-bit Windows applications are supported. As this functionality is being actively developed, application support will improve on a daily basis. Be sure to update Box86 frequently!

Upon launching a Windows app through Wine for the first time, you may be prompted to install additional Mono and Gecko components. Please go ahead and do so if this occurs.

Some great older Windows games to try can be found at: <https://archive.org> and <https://www.myabandonware.com>.

## DISCORD “APP”

A Discord web “app” has been added to the application menu under “Internet.” Please note that this is not the official Discord app (which is presently incompatible with Raspberry Pi OS), but rather, a custom Chromium launcher. You can use Discord to get support for Twister OS from its creators and channel members via Pi Labs’ Discord channel. You can join our channel by visiting the following URL: <https://discord.gg/Y7WFeC5>

## STEAM

As Valve has officially announced that they will soon cease support for the 32-bit Steam client software for Linux, Steam on Twister OS has been transitioned to “unsupported” status. The Steam client is still included in Twister OS, but if you experience problems with it, it is unlikely that a fix will become available for this reason. As an alternative, consider getting DRM-free games from GOG or Humble, as these will enjoy continued support under Box86.

If you would like to continue to use Steam on Twister OS until Valve “pulls the plug,” here are some tips for using it:

- While Steam is included in Twister OS, it only shows your library in “small” or compact view.
- Remember, only Linux x86 games can be run with the included Steam client software, and even then, not all of them (very few right now). Try to install them on your Steam PC and then install them in Steam on your Raspberry Pi (because then they will appear in your library when you use small view).
- Steam is very experimental in this OS. Additionally, Steam may not allow you to shut it down. If this happens, you can close Steam via the “Exit Steam” shortcut found in the application menu under “Games.”

## RETROPIE

The only issue that’s been identified with RetroPie is that the EmulationStation UI seems a bit slow (because it runs like that on x11), but the actual game emulation is fine, because RetroPie bypasses x11 when going in-game.

If you’re trying to configure something in RetroPie and receive a permission warning (because it’s running as a standard user account), just open a terminal and execute it as the root user with `sudo emulationstation`.

The RetroPie setup scripts are located in: `/home/pi/.retroPie`

Remember, you can also use `ALT + F4` to quit any Box86 game, RetroPie game, or whatever.

## ANDROID MIRRORING

In order to use Android Mirroring (My Android), you need to enable USB/ADB debugging on your phone and connect it to one of the USB 3.0 ports of the Raspberry Pi. Then launch the “My Android” shortcut.

If your phone doesn't present a window prompting you to allow access, use the other USB 3.0 port and relaunch "My Android."

You can visit the [scrcpy GitHub page](#) for more information, but it should run. You can also check if the device is connected by typing `adb devices`.

You can play around with options and learn the shortcuts that scrcpy has by opening a terminal and entering `scrcpy --help`.

## GLOBAL MENU

A "global menu" feature has been included in the iRaspbian and iRaspbian Dark themes. This causes application menus to appear in the top panel, rather than in the application window. This can be disabled if you don't like it.

## PHOTOGIMP

PhotoGIMP is essentially a "patch" for GIMP that changes its interface layout to resemble the interface found in Adobe Photoshop. Additionally, PhotoGIMP includes the following features:

- Adds hundreds of new fonts
- Installs new Python filters such as "heal selection"
- Adds a new splash screen
- Adds new default settings to maximize space on the canvas
- Adds keyboard shortcuts similar to Adobe Photoshop

If you find that you prefer the traditional GIMP interface and layout, you can remove the PhotoGIMP patch by entering the following command in a terminal window:

```
rm -r /home/pi/.config/GIMP && rm /home/pi/.local/share/applications/gimp.desktop
```

After running this command, GIMP will restore its default configuration the next time you launch it.

Further information about PhotoGIMP can be found at: <https://github.com/Diolinux/PhotoGIMP>

## COMMANDERPI

CommanderPi is an application developed by Jack477 that allows you to easily view real-time performance information for your CPU and other hardware.

Additionally, it provides a very easy interface that can be used to overclock your Raspberry Pi, if you so desire.

## DYNAMIC WALLPAPER

CommanderPi is another application developed by Jack477 that allows you to choose from three different wallpaper scene packs that will change based on the time of day. Give it a try to spruce up your desktop!

You can find more information about Jack477's projects here: <https://github.com/Jack477>

## PIKISS

PiKISS is an application developed by Jose Cerrejon that provides an easy menu-driven interface to compile/install a variety of useful applications and tools for the Raspberry Pi. It can be a huge help. KISS = Keep It Simple, Stupid!

You can find more information about PiKISS here: <https://github.com/jmcerrejon/PiKISS>

## NOTIFICATION CENTER, SPOTLIGHT, AND ONBOARDING

The Notification Center, Spotlight, and Twister OS Onboarding apps were developed by kreal for Twister OS. Notification Center and Spotlight provided an enhanced user experience in the iRaspbian and iRaspbian Dark themes. These apps can be accessed by clicking on the notification and magnifying glass icons in the upper-right corner of the panel in the iRaspbian-style themes. Twister OS Onboarding provides an easy out-of-the-box interface for getting Twister OS set up for the first time.

More information on kreal's projects can be found on his GitHub page: <https://github.com/krishenriksen>

## TWISTER OS PATCHER

Twister OS Patcher provides an easy way to keep your Twister OS installation up-to-date. A notification will appear when updates are available, or you can manually check for updates at any time by clicking on the "Twister OS Patcher" shortcut, found in the "System" menu. Twister OS Patcher was developed by FlameKat53 and MobileGamesMotionYT, among others. More information on this project can be found here: <https://github.com/FlameKat53/Twister-OS-Patcher>

## TWISTER OS NEOFETCH THEME

A custom Neofetch theme is included in Twister OS, and was created by Natsurii. If you prefer the original-styled theme, you can simply type:

```
mv -f ~/.config/neofetch/config.conf.bak ~/.config/neofetch/config.conf
```

in a terminal window. More information on Natsurii's projects can be found here:

<https://gitlab.com/Natsurii/twisteros-neofetch>

## FINAL WORDS

This was made just for fun and out of admiration for Box86, as well as to bring more users to ARM Linux.

The skins/themes are provided for aesthetic value only, and does not significantly impact the performance or usability of your Raspberry Pi. If you don't like it, you don't have to use it.

This project is not exclusively our work, as many of the theme elements and included software are based upon tons of other peoples' work on GitHub.

With open source love, Salvador and grayduck.

<https://twisteros.com>