Installing PiOS on Raspberry Pi 3-4

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2. Requirements

I checked this with Pi 3+ and Pi 400 models.

Requirements:

- A Raspberry Pi computer with Internet connection.
- A PC to flash the image to the SD card.
- A monitor with HDMI connector, keyboard and mouse.
- The Raspberry Pi Imager program.
- A Micro SD card of no less than 16GB storage space.
- An SD card reader (onboard on many laptops, or to plug in).
- An Internet connection to update software.

3. Flashing the OS image to the boot device

1. Check if [Raspberry Pi Imager](#) is installed on your system.
2. Push Micro SD card in the SD card holder.
3. Push SD card holder in the SD card reader.
4. Connect SD card reader to your PC.[1]
5. Open Raspberry Pi Imager.
6. Choose Raspberry Pi device (3 or 4)
7. Choose the Legacy PiOS (32-bit) (Bullseye)
8. Choose storage: there should be only one choice (the SD card)
9. Click 'Next' and say 'No' to customization settings.
10. Say 'Yes' to erasing all existing data on the SD card.

11. Wait until data are written and verified (ca. 5-15 min).
12. Remove the micro SD card from the SD card holder.

4. Installing the OS on the Raspberry Pi

1. Make sure the Pi is not connected, then put the card into the micro SD card slot on the Raspberry Pi.
2. Power up the Pi and follow the installation instructions.
3. In the following ## is the number of the Raspberry Pi:
   - User: 'lyon##', and password: 'ly0Np1_##'[2]
   - Country: United States. Keyboard: US. Time-zone: Chicago
   - WiFi: skip
   - On Pi400, choose the `Chromium` browser and uninstall `Firefox`
   - Wait until the system update is finished (ca. 10 min)
   - Reboot system
4. At the prompt, enter `startx` to start the GUI.x

5. Customize OS configuration

1. In the terminal, enter `sudo raspi-config`
2. In the menu, enter `1 System Options`
3. In `System Options`, select `Boot / Auto Login`
4. In `Boot / Auto Login`, select `B2 Console AutoLogin` and Enter
5. Go back to the start screen and select `3 Interface Options`
6. Select `I2 SSH` (Secure SHell) and `enable` it
7. Choose `Finish` and `Reboot now`
8. If reboot successful, open GUI with `startx` at the prompt
9. If GUI opens, open terminal and shutdown: `sudo shutdown now`

6. Installing, customizing and testing applications

1. Install applications: Emacs, R, SQLite,
   1. `sudo apt install emacs -y`
   2. `sudo apt install r-base -y`
   3. `sudo apt install sqlite3 -y`
2. Customize and check applications:
   1. Configure Emacs:
      - Open Emacs on terminal with `emacs &`
      - `M-x eww RET tinyurl.com/EmacsLyonPi`
      - Save buffer as `~/.emacs` with `C-x C-w`
      - Kill eww buffer with `C-x k`
      - Shut Emacs with `C-x C-c`
   2. Check Emacs configuration:
      - Open Emacs from terminal with `emacs &`
      - Download `tinyurl.com/babelorg`
      - Save buffer as `~/babel.org`
      - Kill eww buffer and open file
      - Run all code blocks with `M-x org-babel-execute-buffer`

7. Installation list

Pi	Model	Date	OS	Emacs	R	ESS	SQlite
01							
02							
03							
04							
05							
06							
07	3	3-Feb-2024	Bullseye (32-bit)	x	x		x
08							
09	3	3-Feb-2024	Bullsexe (32-bit)	x	x		x
10							
11							
12							
13							
14	400	3-Feb-2024	Bookworm (64-bit)	x	x		x
15							
16	400	3-Feb-2024	Bookworm (64-bit)	x	x	x	x
17							
18							
19	400	3-Feb-2024	Bullseye (32-bit)	x	x		x
20	400	7-Feb-2024	Bookworm (64-bit)				

Footnotes:

[1] On Windows, you may have to confirm that the reader is allowed to plug in. On Linux, you can see all contents of the image file.

[2] Don't mess this up: if the password entry was wrong, the only recourse is to re-install the system.

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