

User Manual

How to configure Raspberry Pi OS “Read-Only” mode by using “manual-preparation” package.

Detailed instructions.

- Get pre-generated onboard configuration scripts packaged in “**manual-preparation.zip**” by one of the following methods:
 - Method #1 (load directly into your Raspberry Pi system):
 - If your Raspberry Pi system is already setup, running and connected to the Internet you may download the package directly into it.
 - Then the package can be unpacked (preferably into **/usr/local/sbin/** directory) and used as described below.
 - Method #2 (copy files using other computer and a USB storage device):
 - Download and unpack the package somewhere locally into your computer.
 - Copy the unpacked files to your USB storage device.
 - Unmount the USB storage device from your computer.
 - Connect the USB storage device to your Raspberry Pi and mount it there.
 - Copy the files from the USB storage device to your Raspberry Pi, preferably into **/usr/local/sbin/** directory.
 - Run the configuration scripts as described below.
 - Method #3 (copy files using other computer by mounting the SD card image using a USB card reader):
 - Download and unpack the package somewhere locally into your computer.
 - Insert the inserted SD card with Raspberry Pi system into a USB card reader and connect it to your computer. Make sure to mount it for read-write operations.
 - Copy the unpacked files from your computer onto the SD card with Raspberry Pi system, preferably into **/usr/local/sbin/** directory.
 - Unmount the SD card.
 - Insert the card back into the Raspberry Pi board and turn the board on.
 - Run the configuration scripts as described below.
- At this point it is assumed that your Raspberry Pi is running and booted either to GUI (that we assume in the text below) or to CLI (then ignore “GUI/Desktop” related remarks).
 - It is assumed that the system previously has been properly initialized (so, things like Welcome Dialog can be omitted).
 - Also it is assumed that the system is connected to the Internet.
 - If it is not or/and you do not have such intention, the steps “conf-0-2-” and “conf-0-3-” should be skipped since they should fail anyway.
- Notes.
 - If you do not need or want to install UFW skip the step “conf-0-2-”.
 - If you do not need or want to update the system at the moment skip steps “conf-0-3-” and “conf-0-4-”.
- Let’s get started with the read-only configuration of the Raspberry Pi system.
- If the system is booted to GUI, open a Terminal.

- Run script
 - **sudo conf-0-1[-...]** <TAB> <ENTER>
 - (to collect Initial reports)
 - Full script name: “**conf-0-1-collect-initial-boot-reports.sh**”.
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- [Optional] Run script to install UFW.
 - *Can be skipped if you do not need or want to install UFW. Or if your Raspberry Pi is not connected to the Internet.*
 - **sudo conf-0-2[-...]** <TAB> <ENTER>
 - (Install UFW and reboot in 10 sec)
 - Full script name: “**conf-0-2-ufw-install-enable-and-reboot.sh**”.
 - If succeeds, automatically reboots in 10 sec...
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- ... Booting to GUI...
- Wait for Desktop.
- Open a Terminal.
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- [Optional] Run script to make full system update/upgrade.
 - *Can be skipped if you do not need or want to update the system. Or if your Raspberry Pi is not connected to the Internet.*
 - **sudo conf-0-3[-...]** <TAB> <ENTER>
 - (Apt Update/Upgrade)
 - Full script name: “**conf-0-3-update-system-software-and-reboot.sh**”.
 - Loads and installs about 77+ packages of about 191+ MB as on Jun 29, 2021.
 - Wait up to 10-20 min observing progress...
 - When done, it will automatically reboot in 10 sec.
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- ... Booting to GUI...
- Wait for Desktop.
- Open a Terminal.
- [Optional] Run script
 - *Can be skipped if you do not need or want to update the system. Or if your Raspberry Pi is not connected to the Internet.*
 - *Skip it if the “conf-0-3-” was skipped.*
 - **sudo conf-0-4[-...]** <TAB> <ENTER>
 - (to collect reports after system update)
 - Full script name: “**conf-0-4-collect-reports-after-system-upgrade.sh**”.
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- Run script
 - **sudo conf-0-5[-...]** <TAB> <ENTER>
 - (to prepare for read-only mode)
 - Full script name: “**conf-0-5-prepare-system-read-only-mode.sh**”.
 - For the question “**Do you want to switch the system to 'Boot to CLI' mode right now?**” answer “**Y**” (recommended).
 - By this command the following changes in the system are expected:
 - system command “**raspi-config nonint do_boot_behaviour B2**” will be called and among other things (if any) the following changes will be done in the /etc/systemd/system directory:
 - existing systemd default.target symlink will be deleted;
 - new systemd default.target symlink will be created pointing to multi-user.target;
 - Alternatively, you can skip this for now and make it later, on the next step.
 - If succeeds, automatically reboots in 10 sec...
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 - ... Booting to CLI (or, to GUI, depending on what you have chosen)...

- Wait for CLI prompt (or Desktop; open a Terminal if in desktop).
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- Run script
 - **sudo conf-0-6[-...] <TAB> <ENTER>**
 - (to permanently switch the system to boot in read-only mode)
 - Full script name: “**conf-0-6-switch-permanently-to-read-only-mode-and-reboot.sh**”.
 - If succeeds, automatically reboots in 10 sec...
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- ... Booting to CLI in read-only mode...
- Wait for CLI prompt.
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- Run script
 - **sudo conf-0-7[-...] <TAB> <ENTER>**
 - (to collect reports in read-only mode)
 - Full script name: “**conf-0-7-collect-reports-after-switching-to-read-only-mode-and-reboot.sh**”.
 - If succeeds, automatically reboots in 10 sec...
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- The above steps take about 40-60 minutes.
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- Now, **your RPi is configured to run in read-only mode.**
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License.

This library is supplementary material to the article "How to configure Raspberry Pi OS to run in read-only mode".

The article and this library can be found at <https://altomaxtech.com/rpi-ro/>.

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