

# Architectures/ARM /PinePhone


This page was last edited on 6 March 2022, at 23:13.

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## Introduction

The PinePhone (<https://www.pine64.org/pinephone/>) is a Linux-native mobile phone. It is based on an AllWinner CPU. Fedora does not (yet) support the PinePhone, but it is possible to get it running with a custom kernel. (Update: 03/30/2020 - It should now be possible to boot regular Fedora Rawhide, provided you can get u-boot to cooperate. This has not been tested, so you should still follow the custom kernel guide for now.) This documentation describes how to install Fedora on a PinePhone, and links to useful resources.

## Installation Guide

You can install to one of two locations; either you install Fedora to the  $\mu$ SD card (expect about 23MiB/s read speed) or the eMMC (expect more than twice the read speed). Depending on your PinePhone model, you can get up to 3.5 times faster than  $\mu$ SD) (source, section Storage (<https://xnux.eu/devices/pine64-pinephone.html#toc-feature-driver-support-matrix>)).

Installing to  $\mu$ SD is risk free, if something break you remove it and the phone boots whatever is present on the eMMC. But your experience will be hampered by the comparatively slow speed of the SD card controller.

Installing to eMMC allows you to have a fair comparison against the OS your PinePhone was shipped with.

The Pine64 wiki has instructions on how to set up your PinePhone as shipped from the

factory ([https://wiki.pine64.org/wiki/PinePhone\\_Software\\_Releases#Factory\\_Test\\_OS](https://wiki.pine64.org/wiki/PinePhone_Software_Releases#Factory_Test_OS)), so the risk of flashing to eMMC is still low.

## Install to µSD card

An unofficial script that generates a flashable image can be found here (<https://github.com/nikhiljha/pp-fedora-sdsetup>), and unofficial prebuilt images can be found here (<https://github.com/nikhiljha/pp-fedora-sdsetup/releases>). The images support both booting from the internal eMMC and booting from an SD card.

## Install to eMMC

1. Fetch the unofficial prebuilt Fedora image from the section above
2. Fetch (and write to µSD card) the tool *JumpDrive*. It allows you to write to eMMC. Please see the instructions in the Pine64 wiki ([https://wiki.pine64.org/wiki/PinePhone\\_Installation\\_Instructions#Installation\\_to\\_the\\_eMMC](https://wiki.pine64.org/wiki/PinePhone_Installation_Instructions#Installation_to_the_eMMC))
3. Boot the phone with JumpDrive and then write the eMMC from your PC
4. Writing to the eMMC of a PinePhone that booted *JumpDrive* uses the same commands as writing to a µSD card
5. Do not forget to resize the 2nd partition on the eMMC **and** the f2fs file system in that partition

## Recommended Packages

The default GNOME install doesn't work very well on such a small touch screen. Instead, Purism's Phosh and various other related software have been packaged in the njha/mobile COPR (<https://copr.fedorainfracloud.org/coprs/njha/mobile/packages/>), and are slowly moving over to the main package repository.

Plasma Mobile is another option, and all Gear apps for Plasma Mobile is also available.

Nightly images for both Phosh and Plasma-Mobile are built every night in The Nightlies FTP (<ftp://pine.warpspeed.dk/nightly/pinephone/>) and are available for both a stable Fedora version and for Rawhide. Use of Rawhide version is recommended for now.

## njha/mobile packages

- *carbons* - XMPP Message sync for libpurple. Used by chatty.
- *rtl8723cs-firmware* - Firmware needed for Bluetooth on the PinePhone.
- *pinephone-helpers* - Runs some scripts to initialize the modem, also ucm2 profiles for HiFi and VoiceCalls, etc. Ideally all these tweaks will be built into the respective software eventually.

## Main repository

*italic* packages are new and previously from the njha/mobile copr repo.

- *NetworkManager* - Connect to the modem, needed for data, sms, calls.
- *gnome-terminal* - Self explanatory
- *gnome-contacts* - Self explanatory
- *purple-matrix* - Matrix plugin for libpurple.
- *purple-telegram* - Telegram plugin for libpurple.
- *gdm* - Self explanatory. Ideally this would be switched out for lightdm but I (njha)

haven't been able to get that to work.

- *squeekboard* - A touchscreen mobile keyboard, integrated with Phosh.
- *feedbackd* - Physical feedback daemon (LED, vibration, sound) integrated with Phosh.
- *calls* - A phone dialer and call handler.
- *callaudiod* - A call audio routing daemon used in Calls.
- *phoc* - A wayland compositor, needed to run phosh.
- *phosh* - A mobile version of the GNOME shell.
- *chatty* - An libpurple client (alternative to Pidgin) optimized for Phosh. For SMS and Matrix.
- *purple-mm-sms* - A libpurple plugin for SMS- integrates with ModemManager. Chatty is planned to handle this natively ([https://source.puri.sm/Librem5/chatty/-/merge\\_requests/687](https://source.puri.sm/Librem5/chatty/-/merge_requests/687)) at some point.

## Contributing

We need help with everything! Please help :)

## Chat

If you're interested in improving Fedora on PinePhone, there is a bridged chatroom for Telegram, Matrix, and IRC.

- Telegram: <https://t.me/fedoraphone>
- IRC: #fedora-mobility (<https://web.libera.chat/?channels=#fedora-mobility>)<sup>[?] on Libera.chat</sup>
- Matrix: #fedora-mobile:matrix.org

## Other Resources

- Pine64's Wiki: <https://wiki.pine64.org/index.php/PinePhone>
- Megi' Website + Kernel: <https://xnux.eu/devices/pine64-pinephone.html>
- Pine64's Kernel: <https://gitlab.com/pine64-org/linux/>
- PostmarketOS Wiki: [https://wiki.postmarketos.org/wiki/PINE64\\_PinePhone\\_\(pine64-pinephone\)](https://wiki.postmarketos.org/wiki/PINE64_PinePhone_(pine64-pinephone))
- Pine64 Forum: <https://forum.pine64.org/forumdisplay.php?fid=120>

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