

Bringing Debian to mobile phones

One package at a time



COLLABORA

Open First



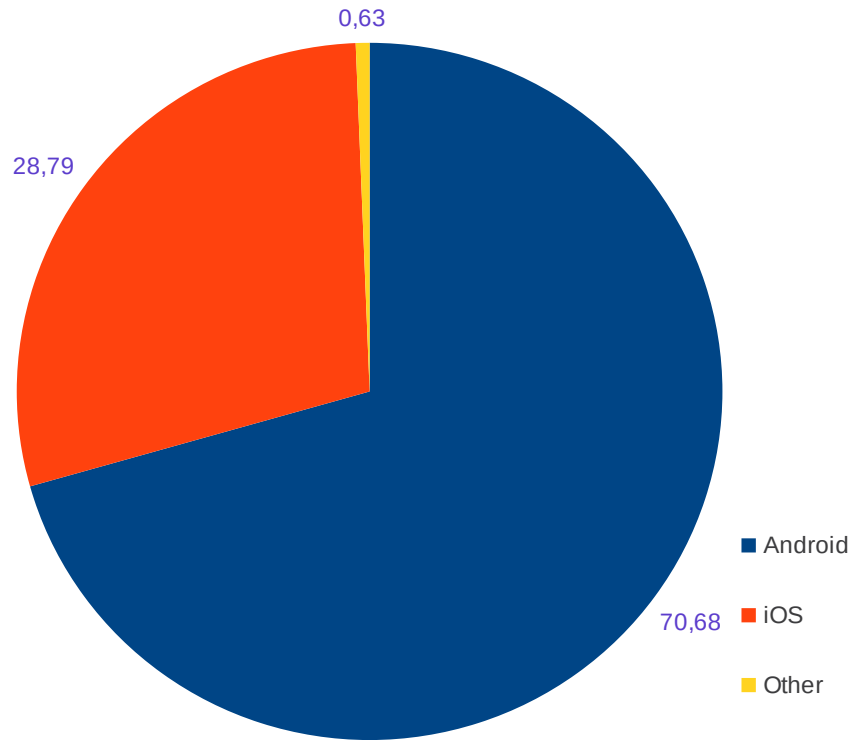
Summary

- Introduction
- A short history of Linux on mobile
- Packaging mobile-friendly software for Debian
- Using Debian on mobile phones, right now!
- Recap

About me

- Embedded Linux engineer
- Long-time FOSS enthusiast
- Using Linux for 20 years
- Debian user since the “Woody” release
- Recently became a Debian contributor
- a-wai on IRC

Mobile phones OS



Android - iOS Duopoly

Technically Android uses Linux

Lack of fully FOSS options





A short history of Linux on mobile devices

Linux on mobile devices across time



2001:
Sharp Zaurus



2007:
Neo Freerunner

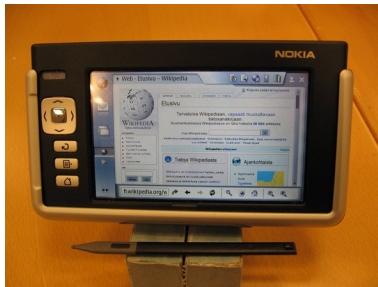


2009:
Palm Pre



2013:
Jolla

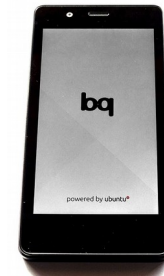
2005:
Nokia N770



2009:
Nokia N900



2014:
BQ Aquaris Ubuntu edition



FOSS Linux-based mobile projects

- UBports (Ubuntu Touch)
- PostmarketOS
- Maemo Leste
- Nemo Mobile (MeeGo)
- LuneOS (WebOS)



COLLABORA

Open First

Hardware support

- So far, mostly Android phones using Halium
 - No mainline support
 - Often outdated vendor kernels
- New players: Purism's Librem 5 & Pine64's PinePhone/PineTab
 - Mainline Linux kernel
 - Development in the open
 - Accepting and encouraging contributions
 - Upstreaming is a goal!



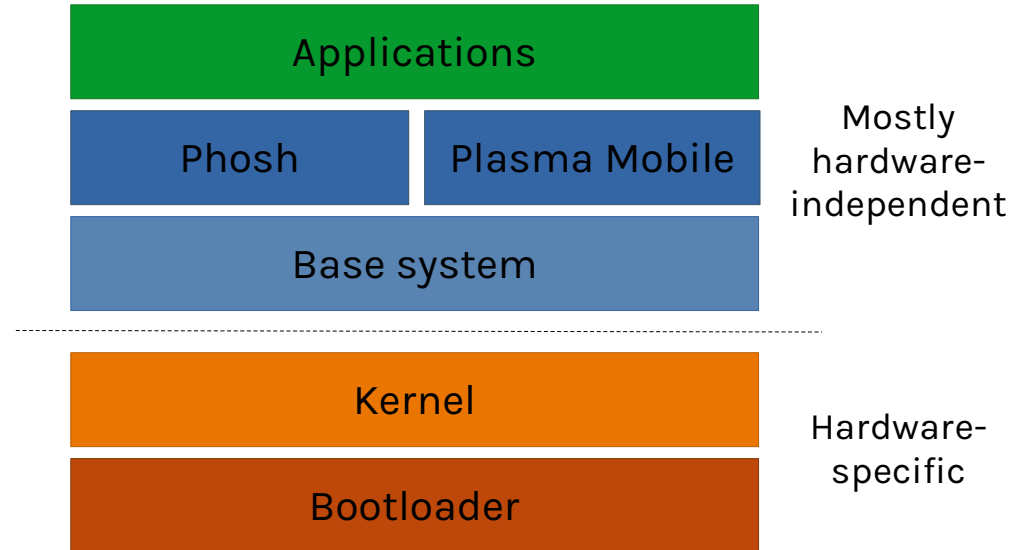


COLLABORA

Packaging mobile-friendly software for Debian

Mobile software stack

- Kernel and bootloader
- Base userspace libraries & utilities
 - ARMv7 → armhf
 - ARMv8 (64 bits) → arm64
- Graphical environment
 - Phosh (GNOME-based)
 - Plasma Mobile (KDE)
- Mobile-friendly apps



DebianOnMobile

- Team dedicated to packaging software useful for owners of mobile devices
- Focusing on Phosh graphical environment and GNOME mobile-friendly apps
- Base packages already uploaded
 - Base libraries & utilities (libhandy, feedbackd)
 - Graphical environment (phoc, phosh)
- Many more in progress
 - libpurple plugins
 - On-screen keyboard (squeekboard)



DebianOnMobile

- Some GNOME apps already have an adaptive UI (Contacts, Clocks, Sound Recorder...)
- Lots of applications not designed for use on small screens
- Need to work with upstream developers to improve that
- Salsa group:
 - <https://salsa.debian.org/DebianOnMobile-team>
- Matrix channel:
 - <https://matrix.to/#/#mobile-debian:matrix.org>





COLLABORA

Using Debian on mobile phones, right now!

The Mobian project

- Independent project, started from the will to create a Debian image for the PinePhone
- Not all packages can go into Debian / We need packages right now
- Growing into a more generic project:
 - Basic infrastructure to target various mobile devices
 - Provide every package needed to run Debian on supported devices
- Project goals:
 - Minimize changes and contribute back to Debian as much as possible
 - Collaborate with upstream to improve software and/or packaging
 - Make Debian a popular platform for mobile devices



Mobian: under the hood

- Based on bullseye
- Use the main Debian archive as the primary package source
- Provide an minimal overlay package archive (amd64, armhf & arm64)
 - ~20 packages patched from Debian
 - ~10 packages uploaded to Debian but waiting in NEW
 - ~10 custom packages, including PinePhone kernel and bootloader
- Images generated using debos on a daily basis
- Currently only one package feed, plans for a staging/unstable repo



Mobian: what's next?

- Target more devices
 - Plans to support Librem 5 and PineTab by the end of 2020
 - More devices may be added in the future, depending on availability to devs
- Provide more UI options (Plasma Mobile, GNOME?)
- Integrate more closely with Debian
- Keep working on new packages
- Improve the infrastructure, implement CI





Recap

- DebianOnMobile is a long-term effort to bring every needed package into Debian
- Mobian allows quick testing and building images for the PinePhone (and more soon)
- More mobile-friendly apps are needed!
 - Calendar
 - IM clients
 - ...
- Join us!



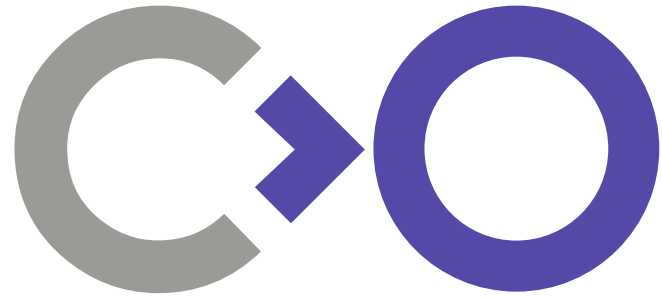
Useful links

- DebianOnMobile
 - <https://salsa.debian.org/DebianOnMobile-team>
 - <https://matrix.to/#/#mobile-debian:matrix.org>
 - <https://lists.debian.org/debian-mobile/>
- Mobian
 - <https://mobian-project.org>
 - <https://gitlab.com/mobian1>
 - <https://matrix.to/#/#mobian:matrix.org>



Photo credits:

- Sharp Zaurus: By Wapcaplet, CC BY-SA 3.0, <https://commons.wikimedia.org/w/?curid=76777>
- Nokia N770: By Miia Ranta, CC BY-SA 2.5, <https://commons.wikimedia.org/w/?curid=731703>
- Neo Freerunner: By FIC/OpenMoko project, CC BY-SA 3.0, <https://commons.wikimedia.org/w/?curid=1749181>
- Nokia N900: By Ilya Voyager, CC BY-SA 3.0, <https://commons.wikimedia.org/w/?curid=8460602>
- Palm Pre: By James Whatley, CC BY 2.0, <https://commons.wikimedia.org/w/?curid=7037179>
- Jolla: By Jolla Ltd, Copyrighted free use, <https://commons.wikimedia.org/w/?curid=26412535>
- BQ Aquaris: By Moks2, CC BY-SA 4.0, <https://commons.wikimedia.org/w/?curid=40259038>



Thank you!



COLLABORA

Open First