

Genode on the PinePhone
on track to real-world usability
FOSDEM 2024



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Outline

1. What happened so far?
2. Enjoyable user-developer interplay
3. Power management via pluggable drivers
4. Goa SDK
5. What's next?



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Background

2003 Vision of a truly trustworthy operating system

least privilege ★ capability-based ★ microkernel ★ virtualization

2006 First prototype

2008 Bootstrapped company Genode Labs in Dresden/Germany

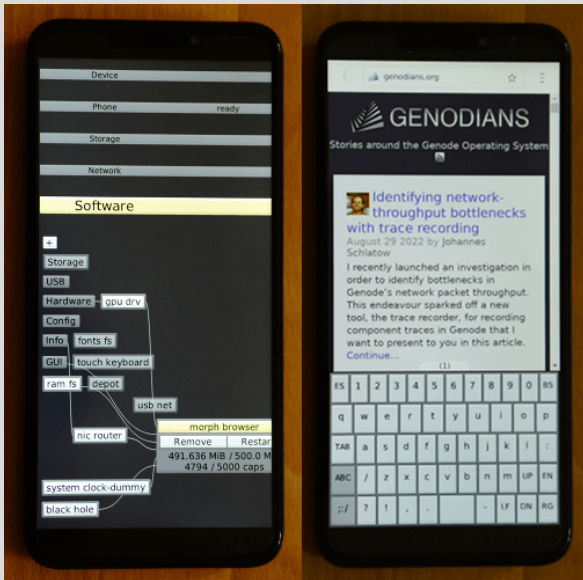
contract work ★ dual licensing ★ support

2018 First version of Genode-based Sculpt OS for PCs

2021 First baby steps of Sculpt OS on the PinePhone



FOSS-on-mobile devroom one year ago





Recap of last year

Quick walk through the UI

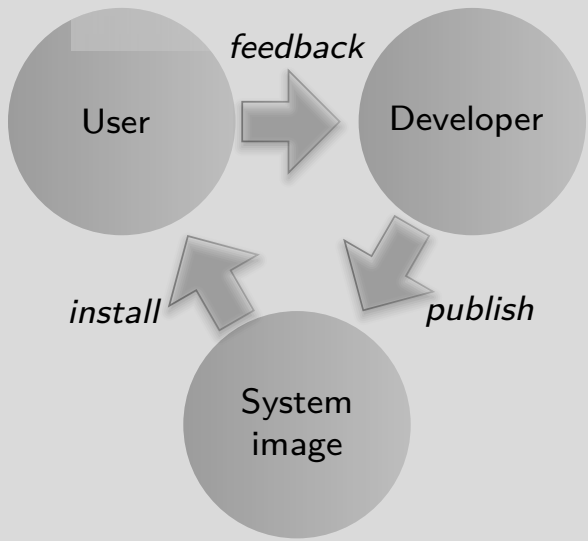


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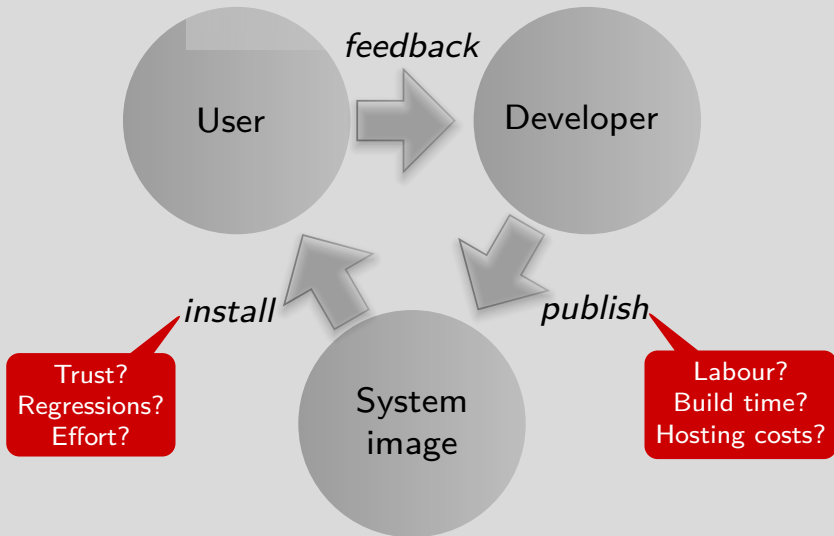


Interplay between user and OS developer



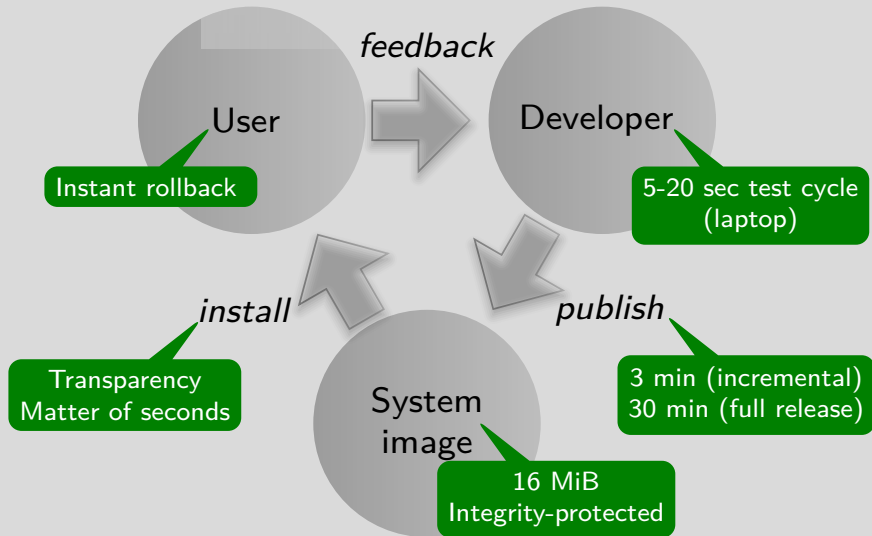


Interplay between user and OS developer





Interplay between user and OS developer





System update live demo

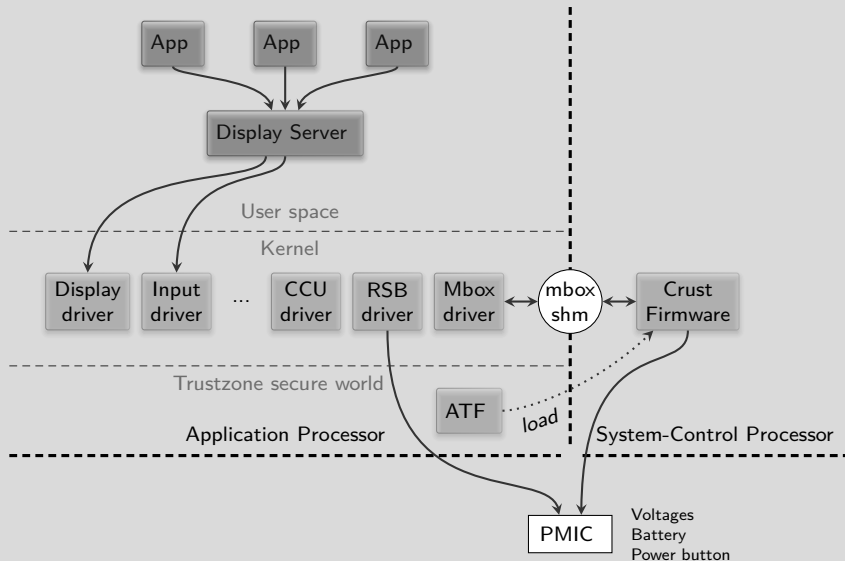


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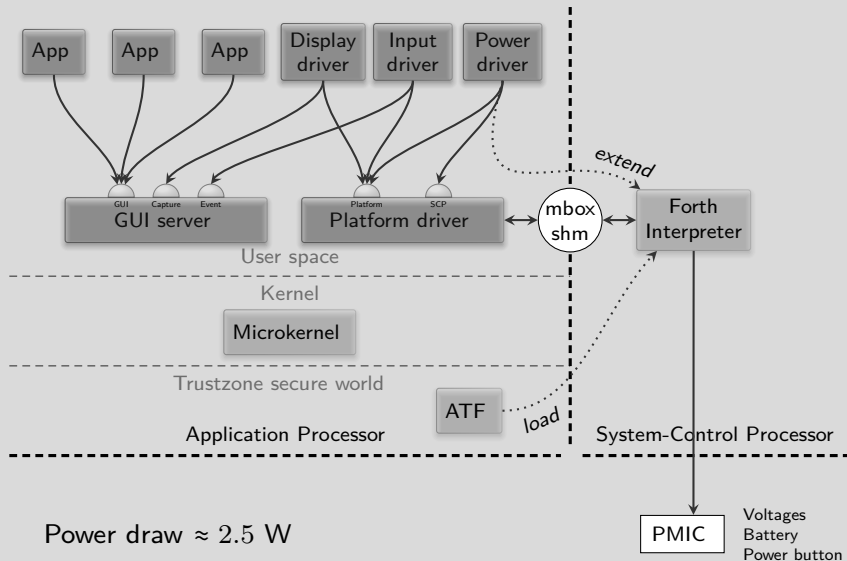


Traditional layered architecture



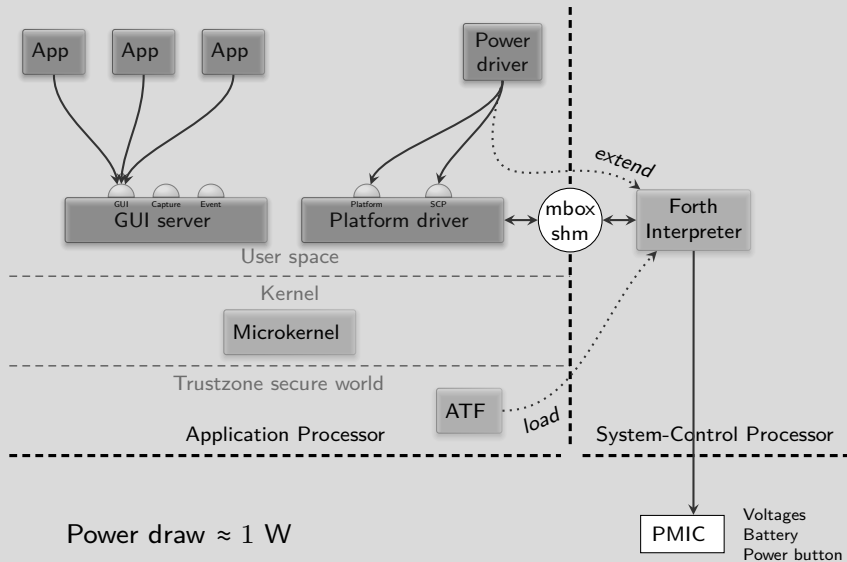


Genode's component architecture





Genode's component architecture





Live sleeping demo

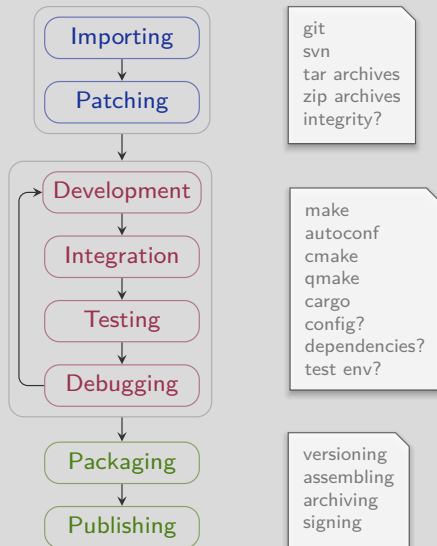


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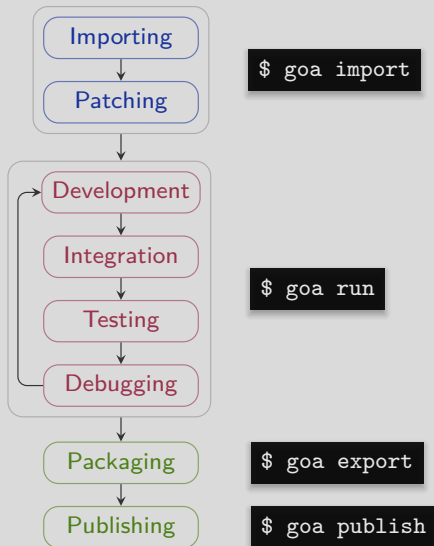


Developer concerns





Goa - goal, but reached a little bit sooner

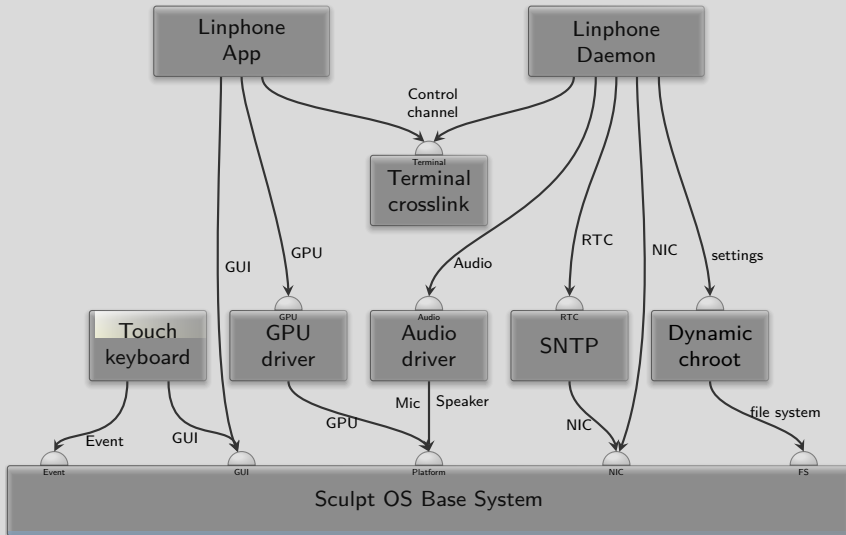




Goa live demo



Linphone as a sophisticated showcase





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What's next?

Today

- Telephony, VoiP
- Mobile data, Wifi
- Package management, system update
- Web browser
- SDK

Qt5, Lomiri, SDL, OpenGL, C++, Rust



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Road map 2024

- Focus on usability
- SMS
- Pluggable audio driver
- Encrypted user profiles



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Road map 2024

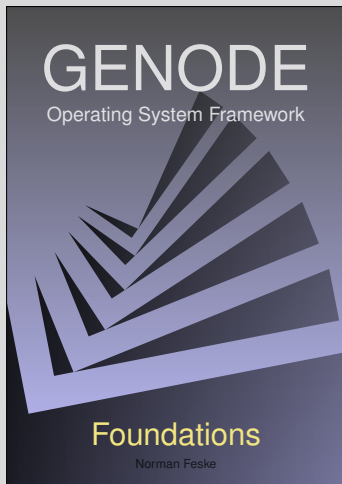
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Worthwhile directions?

Community interests?



The Book “Genode Foundations”



<https://genode.org/documentation/genode-foundations-23-05.pdf>



Thank you

Genode OS Framework

<https://genode.org>

Sculpt OS download and manual

<https://genode.org/download/sculpt>

Genodians.org community blog

<https://genodians.org>

Goa software development kit

<https://github.com/genodelabs/goa>

Genode Labs GmbH

<https://www.genode-labs.com>