

# ProteanOS<sup>P</sup>

## Liberating Embedded Systems

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## A Fully Free Distribution

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- Software Inclusion Policy: no non-free applications, libraries, drivers, firmware, documentation, etc.
- Some packages repacked to remove non-compliant files
- Intended to follow GNU's Guidelines for Free System Distributions and aiming to be listed by GNU as a free distribution



## A Binary Distribution

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- System is comprised entirely of binary packages
- Package manager, *opkg*, is used to install, remove, and upgrade all packages, including the base system
- Easy to install
- Like Debian, Trisquel, Maemo, Tizen, Parabola, etc.

## As Configurable as a Source Distribution

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- Binary packages configured at build time for “platforms”, usually with a `config-<platform>` package providing configuration files
- Binaries built for different platforms coexist in a package archive
- Debian is implementing something similar but a bit less flexible: “build profiles”
- As flexible as source or hybrid source/binary distributions or build tools such as OpenEmbedded, Ångström, Buildroot, OpenWrt, LibreWRT, and Gentoo



## Small and Fast BusyBox/Linux-libre System

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- Small utilities and applications like BusyBox and opkg are used to keep storage requirements low
- Packages are finely split and stripped of unneeded parts
- Boot time is reduced with a simple and lightweight boot process
- Portable to any UNIX-like kernel (currently supported is Linux-libre) and system libraries (currently supported is EGLIBC – merged into the GNU C Library)



## Self Hosting

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- GNU toolchain is packaged
- ProteanOS can build itself from source
- Cross compilation is to be well supported
  - Cross Binutils packages exist and work
  - Cross GCC packaging exists but isn't tested
  - Partial multiarch implementation (file system hierarchy)



## Quick Facts and Statistics

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- Development started on 2011-12-09
- Independently developed (not based on another distribution) with inspiration from other distributions
- 3275 commits in all repositories on [git.proteanos.com](https://git.proteanos.com)
- 34 source packages that build 137 binary packages
- All project infrastructure (wiki, Git repositories, master package archive, mailing list, etc.) is self hosted



## Overall Goals

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- Provide a high quality fully free operating system distribution for embedded applications
- Make compliance with free software licenses easy for hardware vendors
- Someday use as OS for personal electronics (e.g. alarm clocks or video game consoles) and other embedded systems (e.g. digital signage or point-of-sale systems) that Respect Your Freedom





## ProteanOS Needs You!

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- 6 developers over time
- Current bus factor: **1**
- Many types of contributions are welcome:
  - Preparation and maintenance of software packages
  - Design and development of utilities
  - Drafting of documentation
  - Etc.



## Web Site and Contact Information

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- Web site: `<http://www.proteanos.com/>`
- Development mailing list:  
`<mailto:proteanos-dev@lists.proteanos.com>`
  - Subscription and archives:  
`<http://lists.proteanos.com/proteanos-dev/>`
- IRC channel: `#proteanos-dev` on freenode
  - I'm "pehjota" on freenode



Slide sources: <<http://files.proteanos.com/pub/presentations/lp2014.odp>>

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