

Debian: 19 years of Free Software, “*do-ocracy*,” and democracy

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6 October 2012

ACM Reflections | Projections 2012
University of Illinois at Urbana-Champaign

Free Software & your [digital] life

Lester picked up a screwdriver. “You see this? It’s a tool. You can pick it up and you can unscrew stuff or screw stuff in. You can use the handle for a hammer. You can use the blade to open paint cans. You can throw it away, loan it out, or paint it purple and frame it.” He thumped the printer. “This [Disney in a Box] thing is a tool, too, but it’s not your tool. It belongs to someone else — Disney. It isn’t interested in listening to you or obeying you. It doesn’t want to give you more control over your life.” [...]

*“If you don’t control your life, you’re miserable. Think of the people who don’t get to run their own lives: prisoners, reform-school kids, mental patients. There’s something inherently awful about living like that. **Autonomy makes us happy.**”*

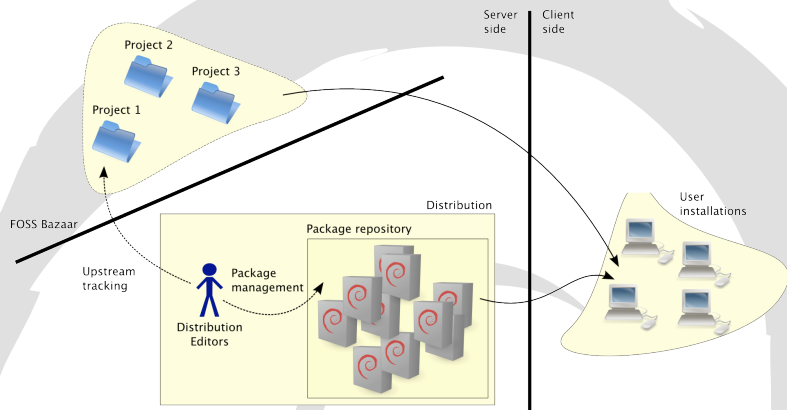
— Cory Doctorow, Makers
<http://craphound.com/makers/>

foo is cool, let's install it!

- 1 download `foo-1.0.tar.gz`
 - ▶ checksum mismatch, missing public key, etc.
- 2 `./configure`
 - ▶ error: missing bar, baz, ...
- 3 `foreach (bar, baz, ...)` go to 1 until (recursive) success
- 4 `make`
 - ▶ error: symbol not found
- 5 `make install`
 - ▶ error: `cp: cannot create regular file /some/weird/path`

now try scale that up to 17'000 sources releasing **3'000 new versions/month**

Free Software, à point: distributions



- ease software management
- key notion: the package abstraction
- offer coherent software collections
- killer application: package managers (& installers)

Outline

1 Debian and Wheezy

2 Specialties

3 Derivatives

4 Contribute

Debian: once upon a time

Fellow Linuxers,

*This is just to announce the **imminent completion** of a **brand-new Linux release**, which I'm calling the **Debian Linux Release**. [...]*

*Ian A Murdock, 16/08/1993
comp.os.linux.development*

- make GNU/Linux **competitive** with commercial OS
- **easy** to install
- built **collaboratively** by software **experts**
- 1st major distro developed “**openly in the spirit of GNU**”
FSF-supported for a while

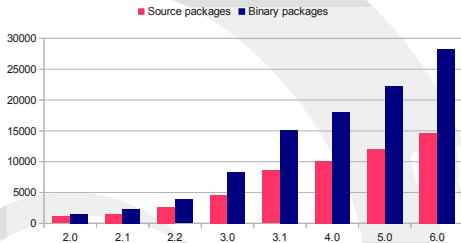
$\frac{1}{3}$ of Debian: the operating system

flagship product: **Debian stable**

- binary distribution
- completely Free (DFSG)
- released every 24 months (\approx)
- a dozen architectures
 - ▶ with several kernels(!)
- archive-wide security support (3-3.5 years)

renowned for

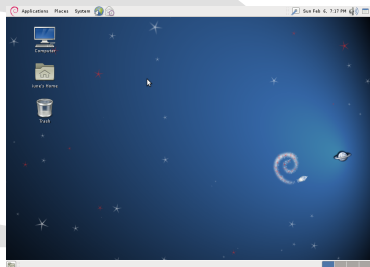
ports, stability, packaging system, old hw support, documentation, smooth upgrades, i18n/l10n, the testing suite, runs anywhere, technical policy, package choice, ...



one of the largest Free Software
porting platforms

Debian 6.0 “Squeeze” — looking back

- release: February 2011
- dependency-based boot system (faster, more robust)
 - ▶ completely **Free Linux kernel**, firmware included
- **GNU/kFreeBSD**
- improved **debian-installer**
 - ▶ ext4, btrfs
 - ▶ ZFS (on kFreeBSD)
 - ▶ ease complex setups e.g. LVM + RAID + encryption
- **Debian Pure Blends**
 - ▶ Debian Edu, Debian Med, Debian GIS, DebiChem, ...
 - ▶ blends.alioth.debian.org



new services:

- snapshot.debian.org
- backports.debian.org
- stable-updates
- screenshots.d.net
- ask.debian.net

Debian 7.0 “Wheezy” — looking forward

- **multiarch**
proper technical way of sharing packages across archs
 - ▶ 3rd party software, easily
 - ▶ cross-compilation
- **private cloud** deployment
 - ▶ OpenStack, Xen/XCP, ...
- new archs: **armhf, s390x**
- **desktop**: GNOME 3.4, KDE Plasma 4.8, XFCE, ...
- upgrades throughout the archive



Timeline

- freeze: June 30th, 2012
- release: *when it's ready*TM
ETA: Q4 2012 - Jan 2013

Contribute, today

- install or upgrade to Wheezy
- report bugs (+ patches)

$\frac{1}{3}$ of Debian: the Project

Common goal:

Create the best, Free operating system.

Debian Social Contract

(1997)

- 100% Free Software
- don't hide problems
- give back
- priorities: users & Free Software

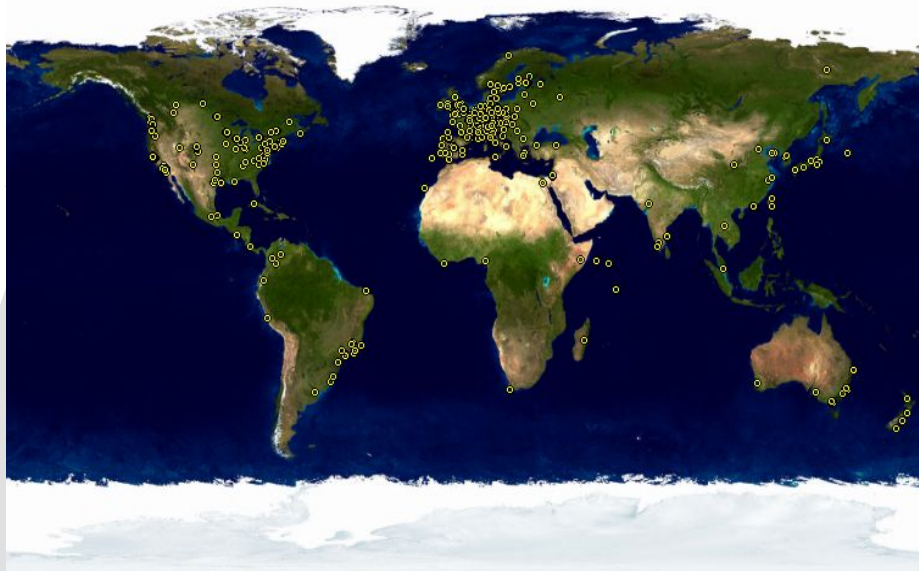
Debian Constitution

(1998)

Structures and rules of a Free-Software-compatible democracy

Strong motive to join: \approx 1'000 **project members, world-wide**

$\frac{1}{3}$ of Debian: the Project (cont.)



$\frac{1}{3}$ of Debian: the community

Open development

- we don't hide problem
- easy to have an impact (just “show me the code!”)

Large amounts of communication

- mailing lists
- IRC
- (a few) Web services(, growing)
 - ▶ social: @debian, !debian on identi.ca

Large number of tech-savvy users

- users help each other, contribute patches, get involved

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Debian: one of a kind?

1993 — not many distros back then

19 years later — *lots* of other distros

openSUSE, Linux Mint, PCLinuxOS, Slackware, Gentoo Linux, CentOS, FreeBSD, Arch, Sabayon, Puppy, Lubuntu, MEPIS, Ultimate, NetBSD, Tiny Core, Zenwalk, CrunchBang, Dreamlinux, Vector, Kubuntu, Maemo, Red Hat, aptosid, Peppermint, PC-BSD, Chakra, Salix, ClearOS, KNOPPIX, Xubuntu, Super OS, BackTrack, gOS, TinyMe, Zentyal, EasyPeasy, Frugalware, Clonezilla, Pardus, Meego, OpenBSD, Quirky, PC/OS, Zorin, **Debian**, SystemRescue, Element, Unity, SliTaz, Macpup, wattOS, Scientific, Mythbuntu, Slax, DragonFLY, Elive, linux-gamers, 64 Studio, Ubuntu, mageia, Nexenta, Parisx, NuTyX, GhostBSD, Kongoni, moonOS, LFS, Lunar, Imagineos, Untangle, Fedora, Yellow Dog, aLinux, Yoper, IPFire, BlankOn, Mandriva, PureOS, FreeNAS, Moblin, Linpus, TurboLinux, blackPanther, ...

with many **differences**:

- technical choices
- release management
- release schedule
- target user
- community
- support
- packaging system
- user base
- look & feel
- ...

How is Debian different?

Debian's special #1: package quality

“ Culture of technical excellence ”

- package **design**: Policy
i.e. “how a package should look like”
- package **testing**: lintian, piuparts,
archive rebuilds (FTBFS), ...
- package maintainers are **software experts**
- **no 2nd class packages**, all are equal

Debian release mantra

we release when it's ready

Debian's special #2: freedom

Firm principles: developers and users bound by the *Social Contract*

- 1 promoting the “culture of Free Software” since 1993
- 2 **Free the bottom up**
 - ▶ in its software
firmware included !
 - ▶ in its infrastructure
no non-free web services (for users)
no non-free services (for developers)

Community awareness

- users know
- users trust Debian not to betray Free Software principles
- **high bar for software freedom** advocates

Debian's special #3: independence

Debian is an **independent** project

- no (single) company babysitting us
- living up on:
 - 1 donations (money & hardware)
 - 2 gift-economy

... truly remarkable in today “big” distro world

people trust Debian choices not to be “profit-driven”

Debian's special #4: decision making

1 do-ocracy

An individual Developer may make any technical or nontechnical decision with regard to their own work;

— Debian Constitution, §3.3.1.1

2 democracy

Each decision in the Project is made by one or more of the following:

1. The Developers, by way of General Resolution [...]

— Debian Constitution, §2

that means:

- reputation follows work
- no benevolent dictator, no oligarchy
- **no imposed decisions**
by who has money, infrastructure, people, ...

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Interlude — derivatives how to

Free Software 101

Freedom #0, to **run** the program, for any purpose

Freedom #1, to **study** how the program works, and change it

Freedom #2, to **redistribute** copies

Freedom #3, to **improve** the program, and **release** improvements

When applied to distros: derived distributions, AKA **derivatives**

- How?
- 1 take existing packages and add your extras
 - 2 patch & rebuild packages as needed
 - 3 sync periodically

Derivatives are game changers

Derivatives have changed the way in which distros are made

- derivatives' focus is on **customization**
- people power is needed “only” for that

everybody wins (if done properly)

- derivative: massive reuse of packaging work
- “mother” distro: reach out to new public
 - ▶ users *and* contributors

Debian derivatives

Debian: a base for ≈ 140 active derivatives — distrowatch.com

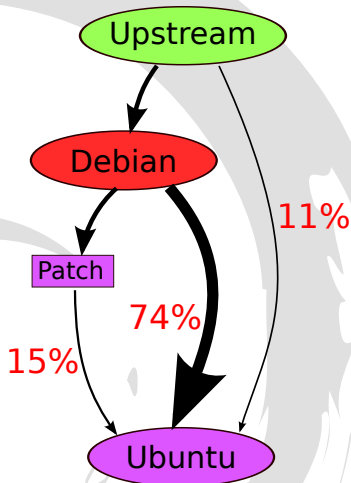
- Tucunare, LinEx, Inquisitor, Grml, UniventionCorporateServer, Vanillux, Emdebian, Crunchbang, PureOS, StormOS, Ubuntu, GNUSTEP, gNewSense, Debathena, Maemo, LMDE, SPACEflight, BCCD, Bayanihan, semplice, ArchivistaBox, Knoppix, Tails, BlankOn, AlienVault-OSSIM, DoudouLinux, Vyatta, Symbiosis, VoyageLinux, Lihuen, LinuxAdvanced, Aptosid, Canaima, siduction, ZevenOS-Neptune, BOSSlinux, Parsix, AstraLinux, ProgressLinux, Finnix, SprezzOS, CoreBiz, Epidemic-Linux, MetamorphoseLinux , ...

Why?

- quality & licensing assurances
- solid base system
- huge package base
- the “*universal OS*”, perfect for customizations

A Debian derivative example: Ubuntu

- started in 2004 by Canonical
target: desktop
- **Debian derivative**
- very popular (15–20x Debian?)
- historical/past correlations
 - main ↔ corporate
 - universe ↔ community
 - ▶ heavily customized/forked in main
 - ▶ very close to Debian elsewhere
- sprouting its own derivatives (≈80)
 - ▶ ... as Debian *transitive derivatives*



Data for Oneiric Ocelot, main + universe

Do you Debian?

- Ubuntu appears to be the most customized Debian derivative
- other derivs. ⇒ much larger amount of *pristine Debian packages*

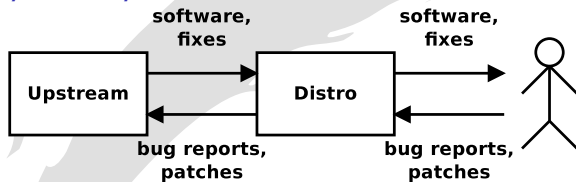
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if you are running a Debian (transitive) derivative, chances are **you heavily depend on Debian** and on its well-being

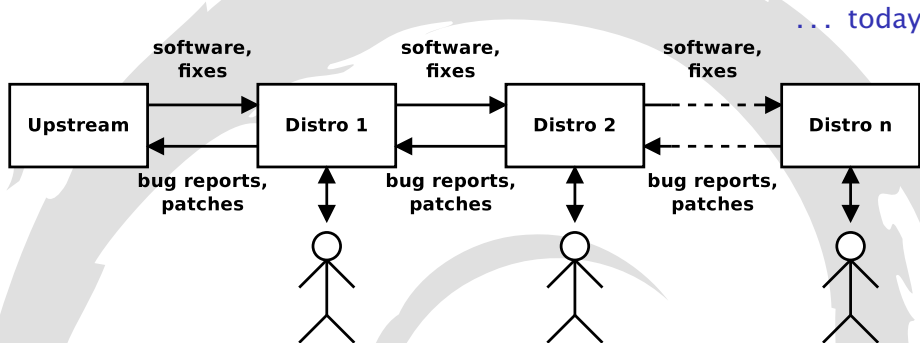
even if your distro hasn't told you

The distribution pipeline

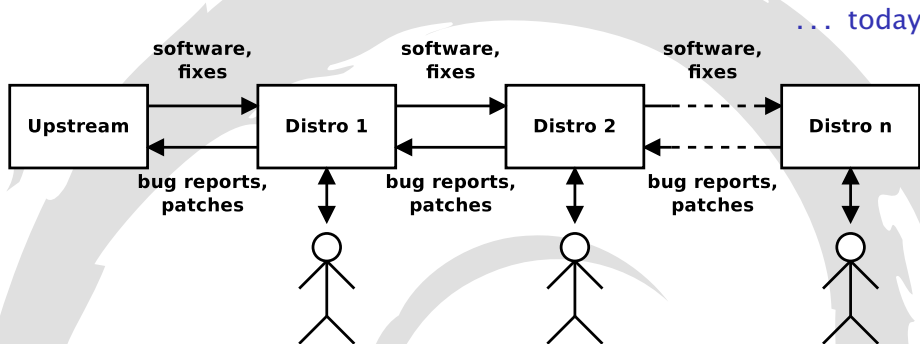
yesterday ...



The *new* distribution pipeline



The *new* distribution pipeline



That's wonderful!

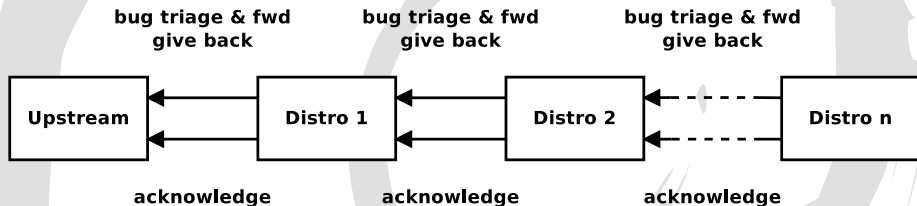
But.

- freedom spreads
- more eyeballs swallow more bugs
- more potential contributors
- should be sustainable
- to everybody's benefit

Free Software 101 — redux

Free Software is bigger and more important than Debian and any other distro or project

- 1 **give back**, i.e. reduce patch flow viscosity
- 2 **give credit** where credit is due



Outline

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Contributing — donate to Debian

even if completely volunteer-driven, Debian needs **resources**

- **hardware** for essential services
 - ▶ archive, build servers, devel. machines, ...
- money for **hardware-related services**
 - ▶ guarantees, shipments, hosting, ...
- money to **sponsor developer meetings**
 - ▶ strengthen the community
 - ▶ get work done

Donations

- donations: <http://www.debian.org/donations>
- partners program: <http://www.debian.org/partners>

Contributing — work with Debian

- test, report, triage, fix **bugs**
 - ▶ reportbug on your Debian
 - ▶ <http://bugs.debian.org>
- **translation**
 - ▶ <http://www.debian.org/intl/>
 - ▶ <http://wiki.debian.org/L10n>
 - ▶ http://lists.debian.org/debian-l10n-*/
- **documentation**
- help with **packaging**

<http://wiki.debian.org/HelpDebian>

Contributing — join Debian

choose your commitment:

package maintainer: maintain packages, via **sponsoring Debian Maintainer (DM):** upload your own packages

- ▶ advocacies required

Debian Project Member (DD): become a Debian “citizen”

- ▶ <http://nm.debian.org>
- ▶ voting right
- ▶ upload access to the whole archive
- ▶ **all kinds of contributions equally welcome!**

for packagers

Zack's tips for wannabe Debianers

- 1 pick a team: <http://wiki.debian.org/Teams>
- 2 stay on their mailing list and IRC channel
- 3 triage bugs, test patches, etc.
- 4 ... the rest will come!

for packagers

Want to know more?

- on the **web**
 - ▶ <http://www.debian.org>
 - ▶ <http://wiki.debian.org>
- **social media**: <http://identi.ca/debian>
- **mailing lists**: <http://lists.debian.org>
- **IRC**: #debian-* channels on irc.debian.org

- **ask me!**

Thanks!

Questions?

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