

Debian: 20 years of Free Software, “*do-ocracy*,” and democracy

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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.**”*

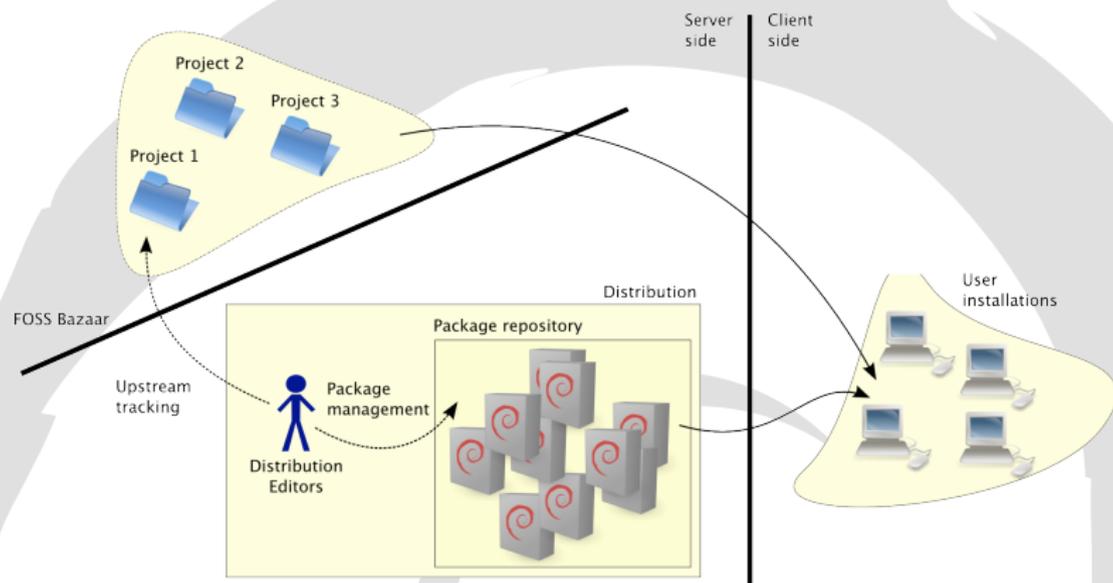
— Cory Doctorow, Makers
<http://craphound.com/makers/>

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

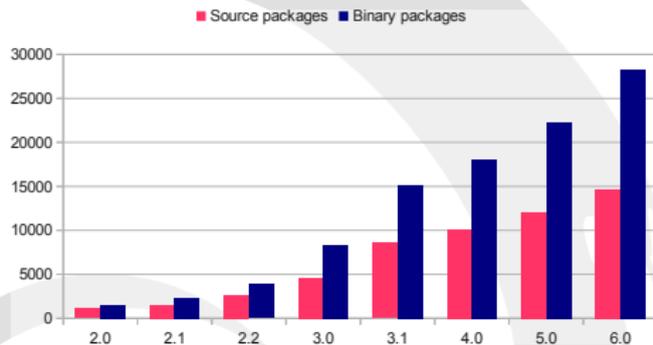
$\frac{1}{3}$ of Debian: the operating system

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

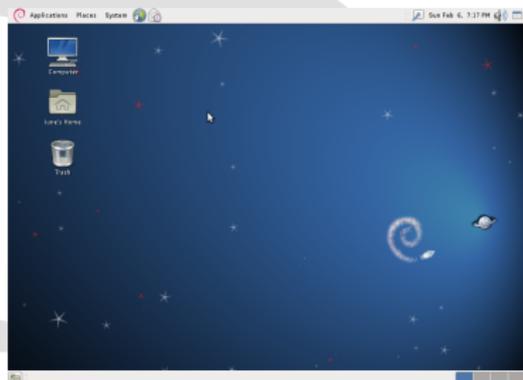
ports, stability, packaging system, old hw support, documentation, smooth upgrades, i18n/l10n, the testing suite, runs anywhere, technical policy, package choice, ...



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: Feb/Mar 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

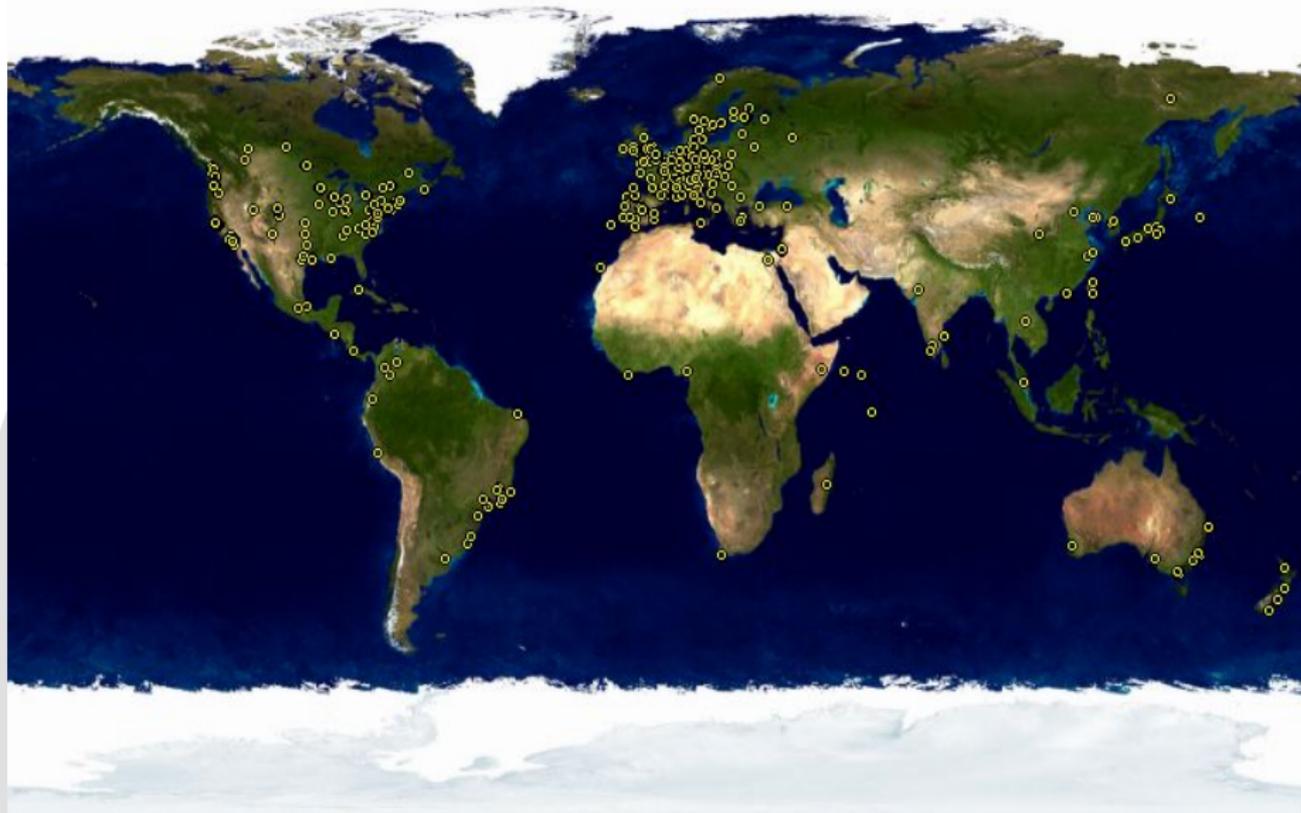
Debian Constitution

(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.)



Demography

Developer's per country

2012 statistics:

www.perrier.eu.org/weblog/2012/06/06#devel-countries-201206

Take a guess: France's position?

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Developer's per country

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www.perrier.eu.org/weblog/2012/06/06#devel-countries-201206

Take a guess: France's position?

in terms of...

- n. of (active) project members: **#3**
(ranking: us, de, **fr**, uk, ca, au, es)
- n. of (active) project members *pro capite*: **#12**
(after: most northern EU countries)

$\frac{1}{3}$ 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

Outline

- 1 Debian and Wheezy
- 2 Specialties**
- 3 Derivatives
- 4 Contribute

Debian: one of a kind?

1993 — not many distros back then

20 years later — *lots* of other distros

(\approx 300 — DistroWatch)

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

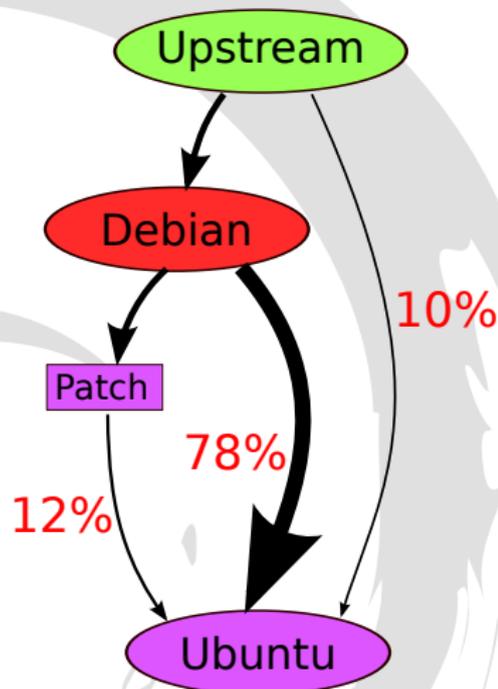
- Tucunare, LinEx, Inquisitor, Grml, UniventionCorporateServer, Vanillux, Emdebian, Crunchbang, PureOS, StormOS, Ubuntu, GNUSTEP, gNewSense, Debathena, Maemo, LMDE, SPACEflight, BCCD, Bayanihan, semplice, ArchivistaBox, Knoppix, Tails, BlankOn, AlienVault-OSSIM, DoudouLinux, Vyatta, Symbiosis, VoyageLinux, 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 Raring Ringtail, 01/2013,
main + universe

Do you Debian?

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

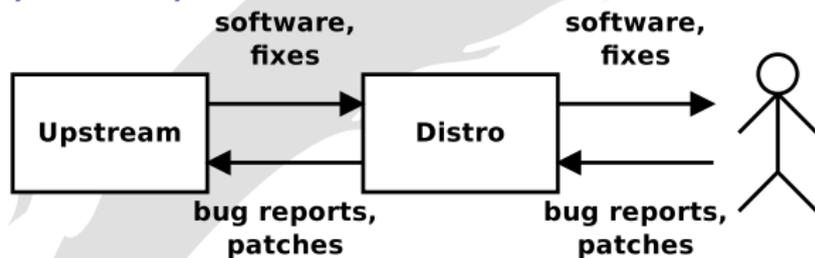
Tucunare, LinEx, Inquisitor, Grml, UniventionCorporateServer, Vanillux, Emdebian, Crunchbang, PureOS, StormOS, Ubuntu, GNUSTEP, gNewSense, Debathena, Maemo, LMDE, SPACEflight, BCCD, Bayanihan, semplice, ArchivistaBox, Knoppix, Tails, BlankOn, AlienVault-OSSIM, DoudouLinux, Vyatta, Symbiosis, VoyageLinux, Lihuen, LinuxAdvanced, Aptosid, Canaima, siduction, ZevenOS-Neptune, BOSSlinux, Parsix, AstraLinux, ProgressLinux, Finnix, SprezzOS, CoreBiz, Epidemic-Linux, MetamorphoseLinux, Debian, Xubuntu, Linux Mint, Ubuntu Studio, Mythbuntu, ArtistX, Asturix, Peppermint OS, TurnKey Linux, Kubuntu, Caixa Mágica, Lubuntu, ...

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

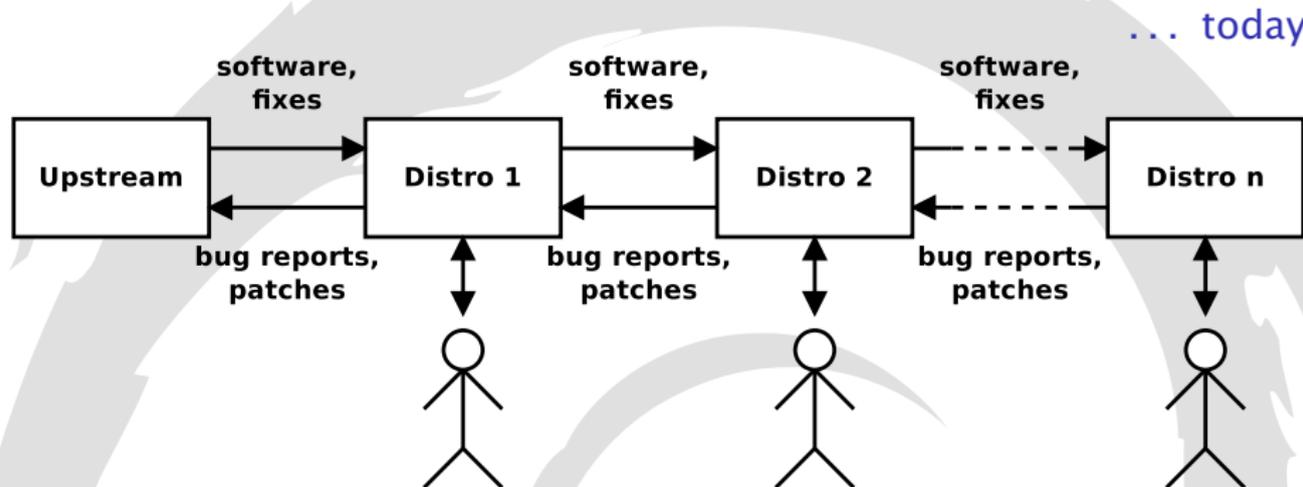
even if your distro hasn't told you

The distribution pipeline

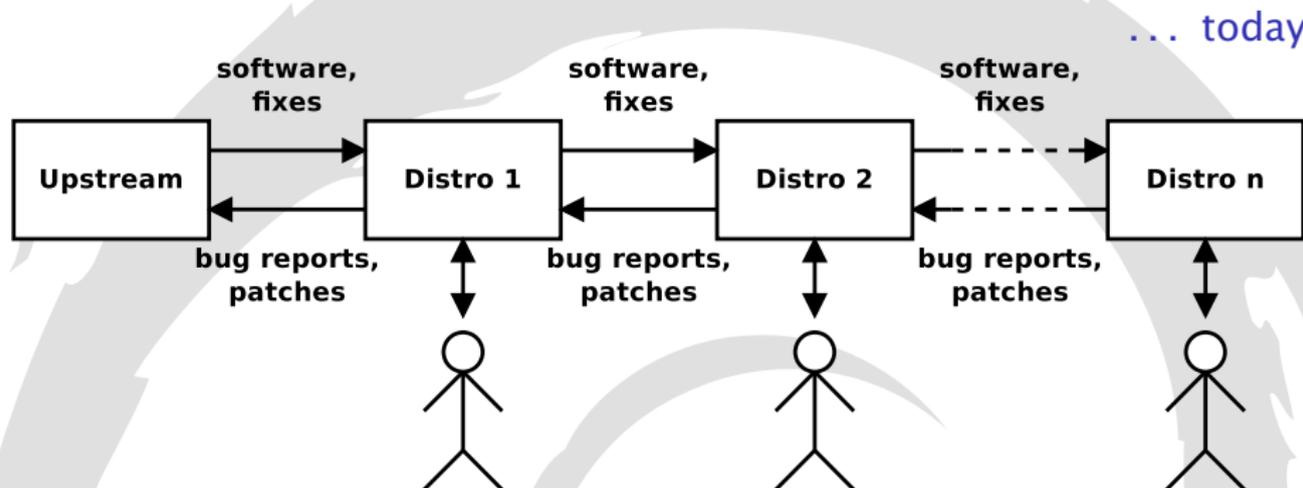
yesterday ...



The *new* distribution pipeline



The *new* distribution pipeline



That's wonderful!

- freedom spreads
- more eyeballs swallow more bugs
- more potential contributors

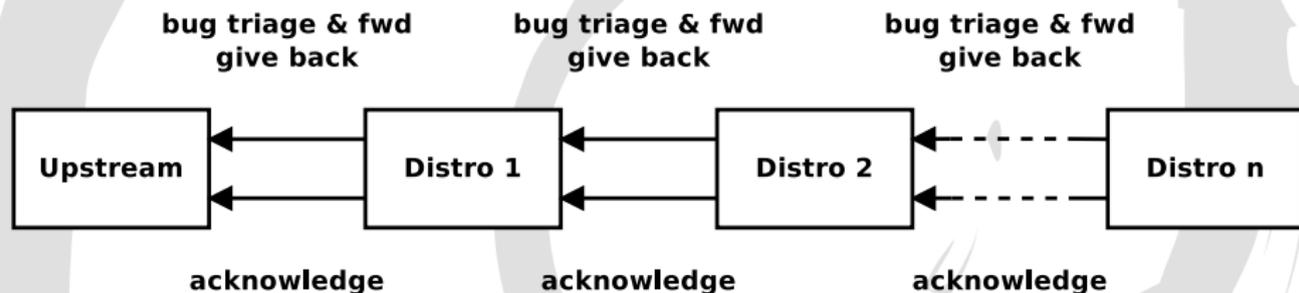
But.

- 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



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Donate to Debian

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

- **hardware** for essential services
 - ▶ archive, buildbots, 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 #1 — using Debian

- 1 test, report, triage, fix **bugs**
 - ▶ reportbug on your Debian, <http://bugs.debian.org>
- 2 monitor packages you care about
 - ▶ subscribe on <http://packages.qa.debian.org>

The screenshot shows the Debian package page for **dpkg**. The page is organized into several sections:

- general**: source: [dpkg](#) (source, admin), version: 1.16.9, maint: [Dpkg Developers](#), [Guillem Jover](#) (u), [Raphael Hertzog](#) (u), arch: any all, std-ver: 3.9.3, VCS: [Git](#) (browse)
- versions**: oldestable: 1.14.31, stable: 1.15.8.13, stable-bpo: 1.16.9~bpo604, testing: 1.16.9, unstable: 1.16.9
- binaries**:
 - [dpkg](#) (595 bugs: 0, 134, 198, 31)
 - [dpkg-dev](#) (102 bugs: 0, 17, 84, 11)
 - [dselect](#) (99 bugs: 0, 34, 65, 0)
 - [libdpkg-dev](#) (1 bugs: 0, 0, 1, 0)
 - [libdpkg-perl](#) (4 bugs: 0, 1, 3, 0)
- todo**:
 - [Lintian](#) reports 2 warnings about this package. You should make the package [lintian](#) clean getting rid of them.
 - [Build log checks](#) report 1 warning about this package.
 - The BTS contains [patches fixing 16 bugs](#) (29 if counting merged bugs), consider including or untagging them.
- news**:
 - [2012-10-31] [dpkg 1.16.9 MIGRATED to testing](#) (Britney)
 - [2012-10-20] [Accepted 1.16.9 in unstable \(low\)](#) (Guillem Jover)
 - [2012-09-19] [Accepted 1.15.8.13 in stable \(low\)](#) (Guillem Jover)
 - [2012-08-20] [dpkg 1.16.8 MIGRATED to testing](#) (Britney)
 - [2012-07-21] [Accepted 1.16.8 in unstable \(low\)](#) (Guillem Jover)
 - [2012-07-02] [Accepted 1.16.7 in unstable \(low\)](#) (Raphaël Hertzog)
 - [2012-06-30] [Accepted 1.16.6 in unstable \(low\)](#) (Guillem Jover)
 - [2012-06-30] [Accepted 1.16.5 in unstable \(low\)](#) (Guillem Jover)
 - [2012-06-28] [dpkg 1.16.4.3 MIGRATED to testing](#) (Britney)
 - [2012-06-17] [Accepted 1.16.4.3 in unstable \(low\)](#) (Guillem Jover)
 - [2012-06-10] [Accepted 1.16.4.2 in unstable \(low\)](#) (Guillem Jover)
 - [2012-06-08] [Accepted 1.16.4.1 in unstable \(low\)](#) (Guillem Jover)
 - [2012-06-08] [Accepted 1.16.4 in unstable \(low\)](#) (Guillem Jover)
 - [2012-05-08] [dpkg 1.16.3 MIGRATED to testing](#) (Britney)
 - [2012-04-27] [Accepted 1.16.3 in unstable \(low\)](#) (Guillem Jover)
 - [2012-03-30] [dpkg 1.16.2 MIGRATED to testing](#) (Britney)
- bugs**: all: 412 (542), RC: 0, I&N: 143 (187), M&W: 265 (351), F&P: 4
- links**:
 - [homepage](#)
 - [changelog / copyright](#)
 - [build: logs, ports](#)
 - [build log checks](#)
 - [debcheck: unstable testing stable](#)
 - [lintian](#) (0, 2)
 - [popcon](#)
 - [110n](#) (67, 71)
 - [debtags](#)
 - [screenshots: 1, 2](#)
 - [RDF/XML description](#)

- ▶ try to reproduce bug and provide **patches**
- ▶ (eventually, become co-maintainer)

Contributing #2 — adopt orphaned packages

- find the ones you use:

```
apt-get install devscripts ; wnpp-alert
```

- learn **packaging** with the **Debian packaging tutorial**

```
http://www.debian.org/doc/manuals/  
packaging-tutorial/packaging-tutorial.en.pdf
```

(aussi disponible en français!)

or:

```
apt-get install packaging-tutorial
```

Contributing #3 — join packaging teams

- many teams
- focused on a **programming language** or on a **field of use**
 - ▶ Python, Java, Perl, Ruby, OCaml, . . .
 - ▶ Bluetooth, Cloud, Games, Med, Science, VoIP, . . .
- excellent way to **learn from experienced contributors**

http://wiki.debian.org/Teams#Packaging_teams

Contributing #4 — hack *on* the Debian infrastructure

- suitable for all **programmers**
- opportunity
 - ▶ complex and heterogeneous infrastructure
 - ▶ **impact** on millions of (indirect) users
- services provide **link to source** and setup instructions **in page footer**, e.g.

The source code for wanna-build is available as a Git repository (Gitweb). [...] sbuild and buildd live together in the sbuild.git repository (Gitweb) in the buildd-tools Alioth project.

Contributing #5 — work on non-development tasks

- translation
- design (themes, websites)
- communication (newsletters & press releases)
- events (DebConf, mini-DebConf)
- videoteam
- documentation
- accounting
- ...

Fundamental activities for the Debian Project to live long and prosper.

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

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!

Association Debian France

*L'Association Debian France a pour buts le **soutien** et la **promotion** du **Projet Debian** en France.*

- ≈60 membres
- activités récentes
 - ▶ production de **goodies** (polos, Buff, autocollants, ...)
 - ▶ organisation **mini-DebConf Paris 2012** (150 contributeurs Debian de toute Europe)
 - ▶ présence Debian à **Solution Linux 2012** et **2013**

<http://france.debian.net/>

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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<http://epsilon.cc/zack>
<http://identi.ca/zack>

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