Debian
. . . ed i tempi bui del Software Libero

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26 Ottobre 2013
Linux Day
Liceo Copernico
Bologna, Italy

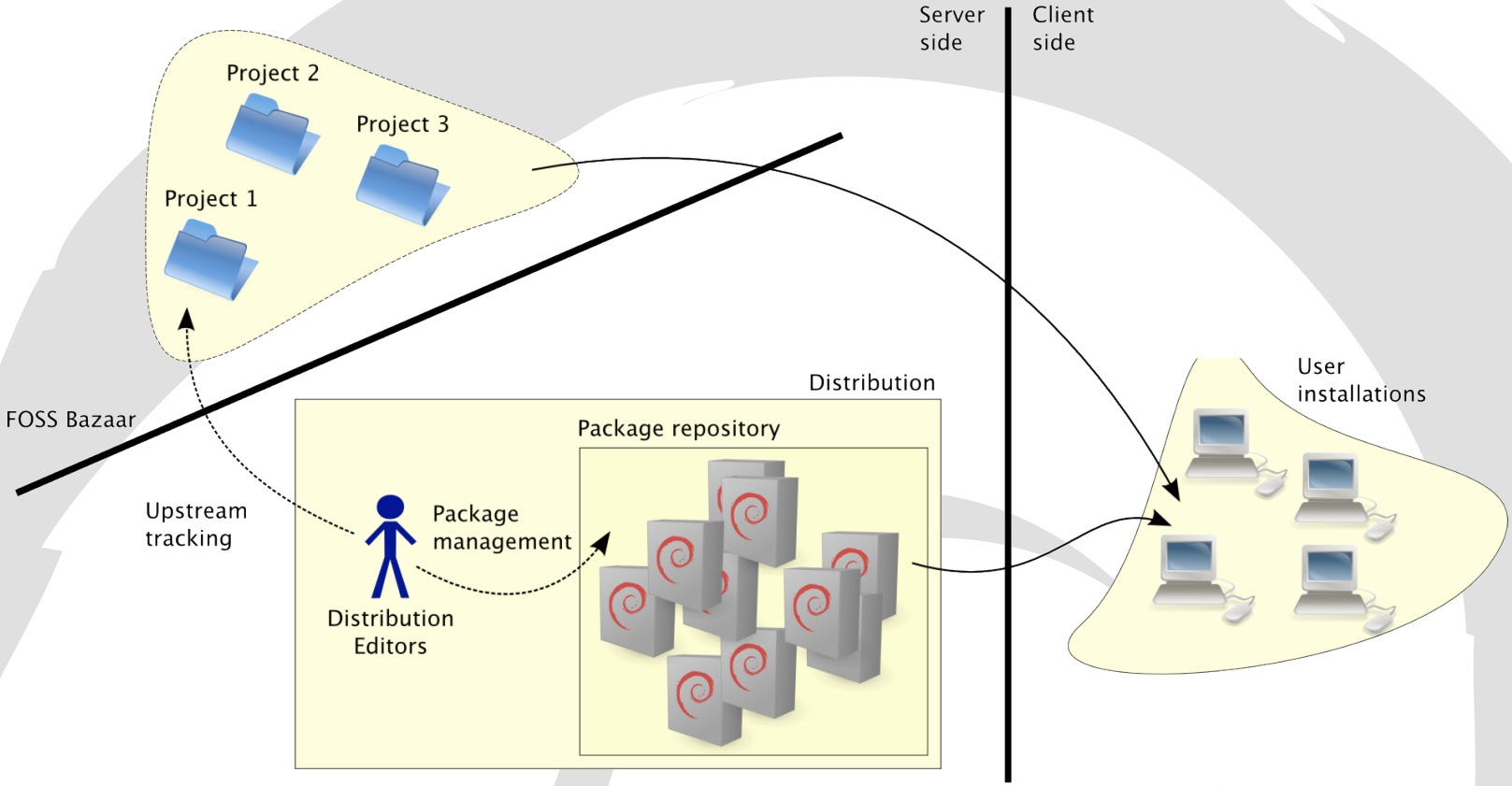
Free Software & your [digital] life

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/

Free Software, à point: distributions



- ease software management
- key notion: the package abstraction
- offer coherent software collections
- killer apps: package managers, installers

Outline

1. Debian and Wheezy
2. Specialties
3. Dark Ages
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. [...]

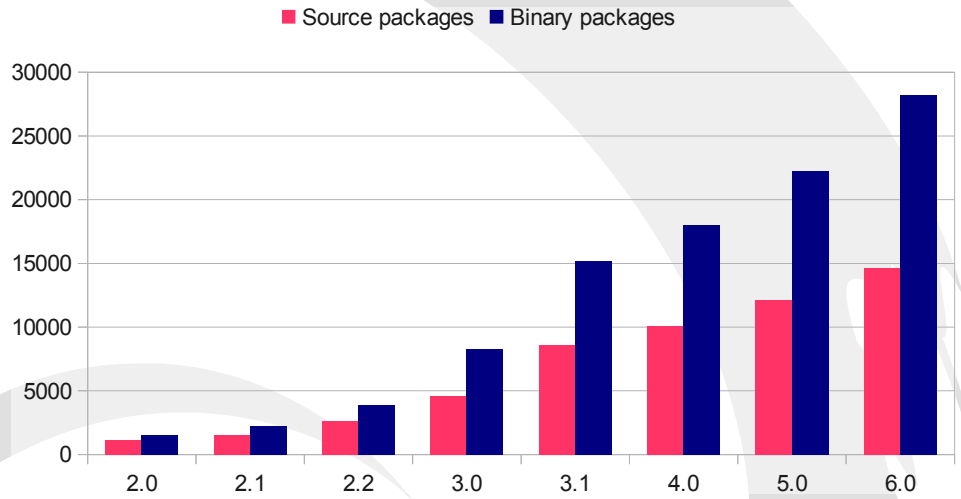
Ian A Murdock, 16/08/1993
comp.os.linux.development

- 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
- 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 7.0 “Wheezy” — highlithgs

- multiarch
  - 3rd party software, easily
  - cross-compilation
- private cloud deployment
  - OpenStack, Xen/XCP, ...
- public cloud support
  - EC2, Azure, GCE, ...
- multimedia codecs & frontends
  - ~~3rd party repositories~~
- new archs: armhf, s390x
- desktop: GNOME 3.x, KDE Plasma 4.x, XFCE, ...

- upgrades throughout the archive

released: May 4th, 2013

Most popular GNU/Linux on the Web (≈33%) overall, 1+ Web server out of 10 (≈10%) runs Debian — w3techs.com, October 2013

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

Common goal:

Create the best, Free operating system.

Debian Social Contract (1997)

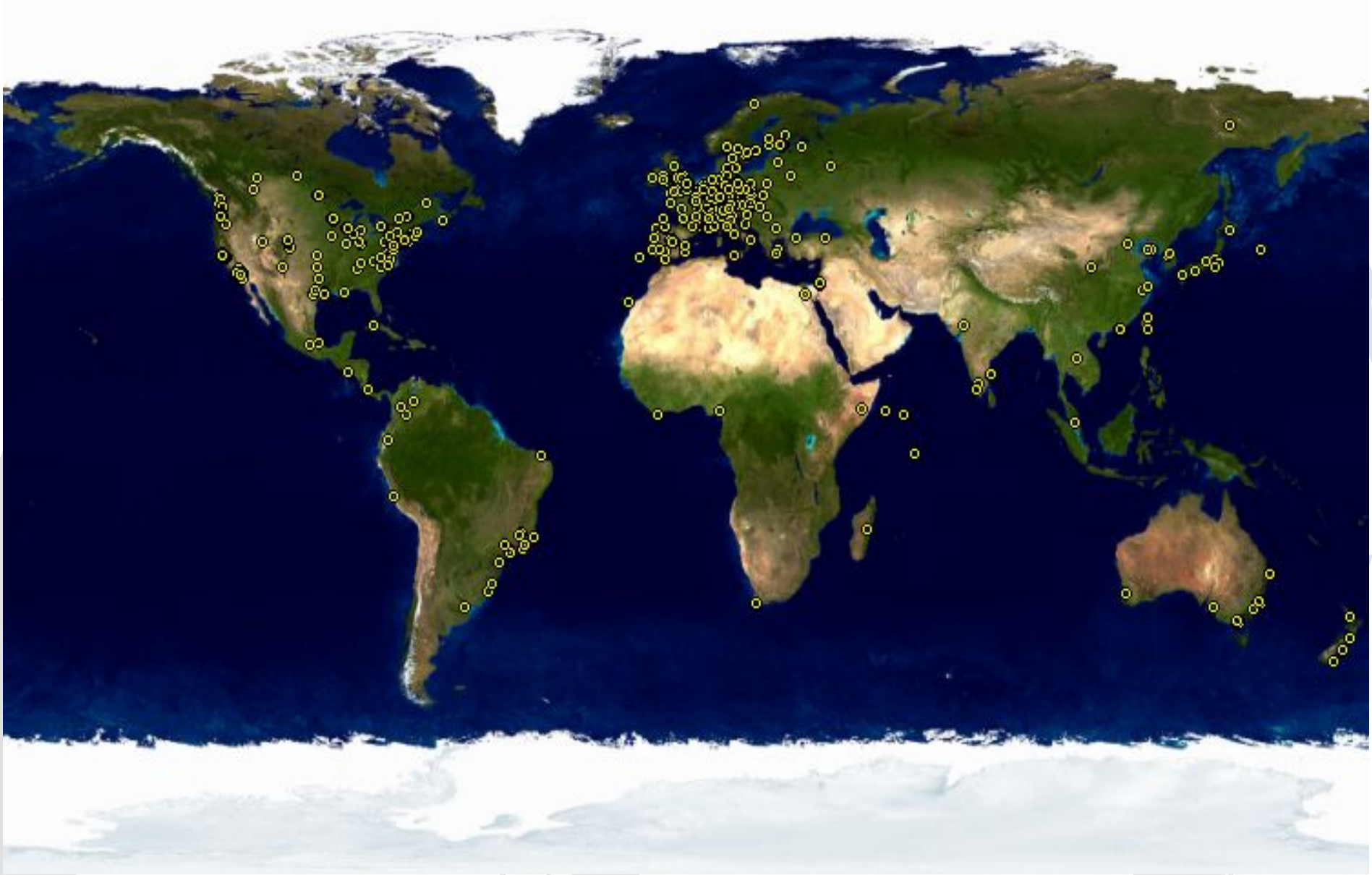
- 100% Free Software
- give back
- don't hide problems
- priorities: users & Free Software

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

2013 statistics:
http://www.perrier.eu.org/weblog/2013/07/27#devel-countries-201307

Take a guess: Italy's position?

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Take a guess: Italy's position?

in terms of...

- total n. of devs: #6 ⇑ 2 wrt 2012
  (after: us, de, fr, uk)
- n. of devs *pro capite*: #20 ⇓ 1 wrt 2012
  (after: most EU countries, except east and .gr)

$\frac{1}{3}$ 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
20 years later — *lots* of other distros (≈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: 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 infrastructure (for developers)

Community awareness

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

Debian's special #2: 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 2^{nd} class packages, all are equal

Debian release mantra

we release when it's ready

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, ...

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

Debian's special #5: 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 , Xubuntu, Linux Mint, Ubuntu Studio, Mythbuntu, ArtistX, Asturix, Peppermint OS, TurnKey Linux, Kubuntu, Caixa Mágica, Lubuntu , . . .

Why?

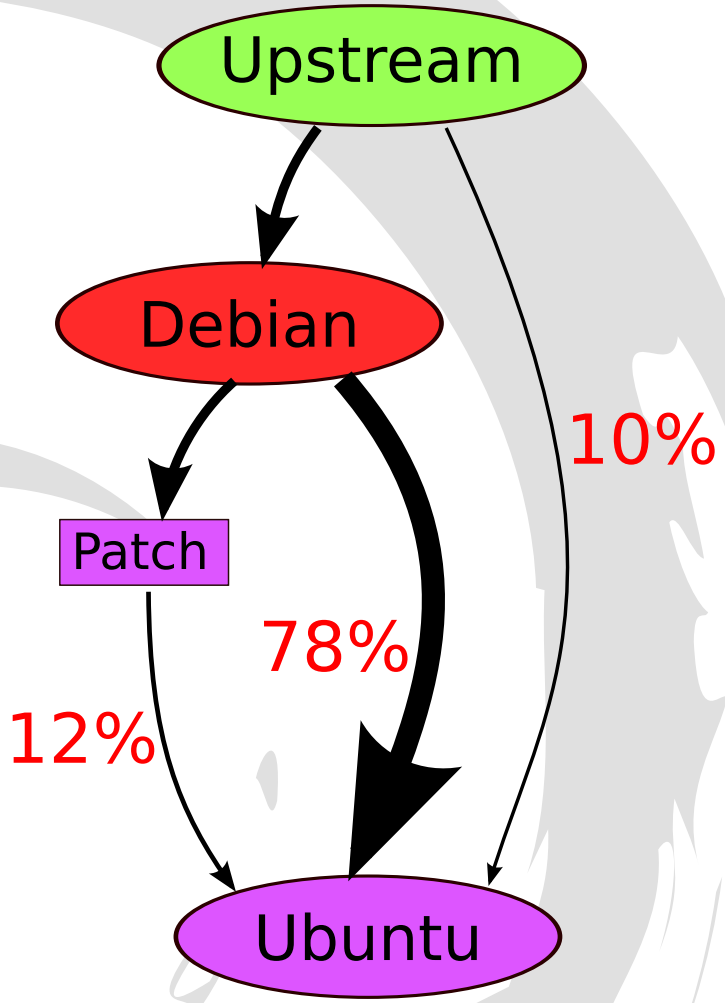
- quality & licensing assurances
- solid base system
- huge package base
- the "*universal* OS," perfect for customizations

A derivative example: Ubuntu

- started in 2004 by Canonical
  target: desktop
- Debian derivative
- very popular (15–20x Debian?)
- historical/past correlations

  main ↔ corporate
  universe ↔ community

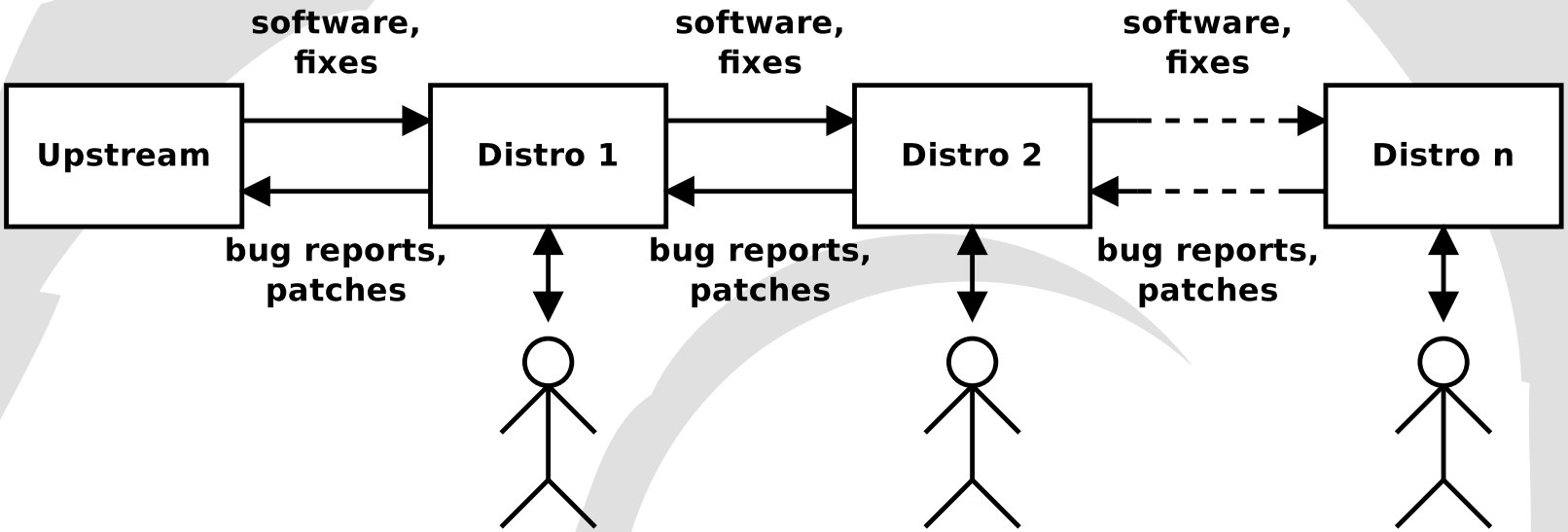
  - heavily customized/forked in main
  - very close to Debian elsewhere
- sprouting its own derivatives (≈80)
  - . . . as Debian *transitive* derivatives



Data for Raring Ringtail, Jan 2013,
main + universe

A derivatives ecosystem

- Ubuntu appears to be the most customized Debian derivative
- other derivatives ⇒ much closer to *pristine* Debian



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

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Everything is fine

After 30 years, Free Software is finally becoming trendy!

- web server market share of Apache+nginx ≈61%
  — Netcraft report, October 2013
- web browser market share of Firefox+Chrome+Android ≈58%
  — StatCounter, July 2013
- *Google's Android seizes smartphone market: software was on nearly 80% of devices shipped in Q2*
  — Wall Street Journal, 8 August 2013
- in education:
  1.75 million RaspberryPi sold so far — Oct. 2013
- desktops — Ubuntu (most popular GNU/Linux desktop): 20 million users in 2011 (estimate), recurrent large scale migrations (200'000 in Spain, 180'000 in Macedonia, China agreement in 2013, . . .)
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Total word domination, at last!

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Or is it?

Dark ages

We have many reasons *not* to be happy. A common one: “they are not 100% Free systems.” True.

But I’m more worried about the upcoming. . .

Free Software dark ages

We have Free Software systems at our fingertips. But our relevant computations are moving away from those systems to remote, centralized systems which we don’t control.

https://en.wikipedia.org/wiki/File:Petrarch_by_Barrilla.jpg

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And very few hackers seem to care! :-(

...

Have we lost sight of Free Software goal?

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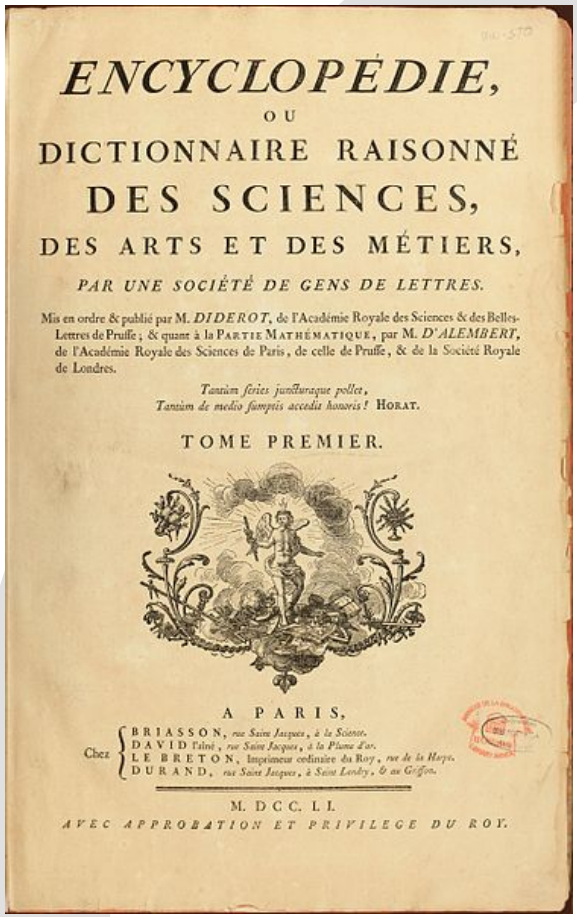
Towards a new enlightenment


ENCYCLOPÉDIE,
OU
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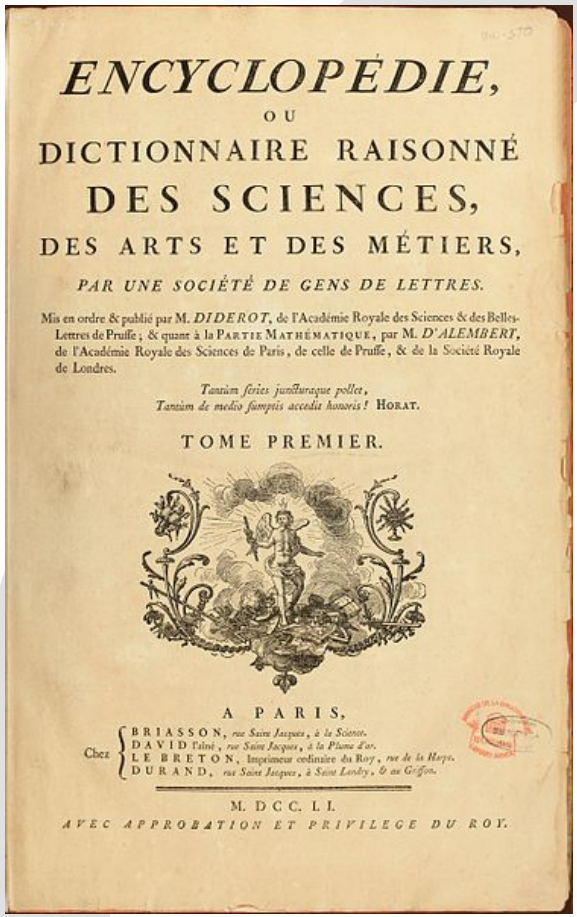
PAR UNE SOCIÉTÉ DE GENS DE LETTRES.
Mis en ordre & publié par M. DIDEROT, de l'Académie Royale des Sciences & des Belles-Lettres de Prusse; & quant à la PARTIE MATHÉMATIQUE, par M. D'ALEMBERT, de l'Académie Royale des Sciences de Paris, de celle de Prusse, & de la Société Royale de Londres.
Tantùm series juncturaque pollet,
Tantùm de medio sumptis accedit honoris! HORAT.
TOME PREMIER.
A PARIS,
Chez BRIASSON, rue Saint Jacques, à la Science.
DAVID l'aîné, rue Saint Jacques, à la Plume d'or.
LE BRETON, Imprimeur ordinaire du Roy, rue de la Harpe.
DURAND, rue Saint Jacques, à Saint Landry, & au Griffon.
M. DCC. LI.
AVEC APPROBATION ET PRIVILEGE DU ROY.

https://it.wikipedia.org/wiki/File:Encyclopedie_de_D%27Alembert_et_Diderot_-_

Getting out of this will be very difficult.

- we need cultural shifts
  non-free to make Free? No, thanks.
  release webapps under AGPL
- we might need to redefine freedoms
  "services raise other issues" no longer enough
- technical work on Free, federated services
  we lag behind big time on these
  getting them right is hard

Towards a new enlightenment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But we do have hope:

...

Nice list at http://prism-break.org/

A role for distributions

Goal

Free Software distributions should offer click-button installation of all Free federated services that you need to interact with your peers without the mediation of centralized or non-free services.

Out of the box:

- anonymous browsing / censorship evasion
- mail handling
- web hosting
- “cloud” storage, calendar, contacts, etc.
- encrypted P2P backup
- ...

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Getting there will be difficult:

- for most services we don’t have the software (yet)
- sane automatic configuration is hard, if possible at all
- to have an impact, we need to make it dead simple

But we’re trying!, e.g. https://freedomboxfoundation.org/

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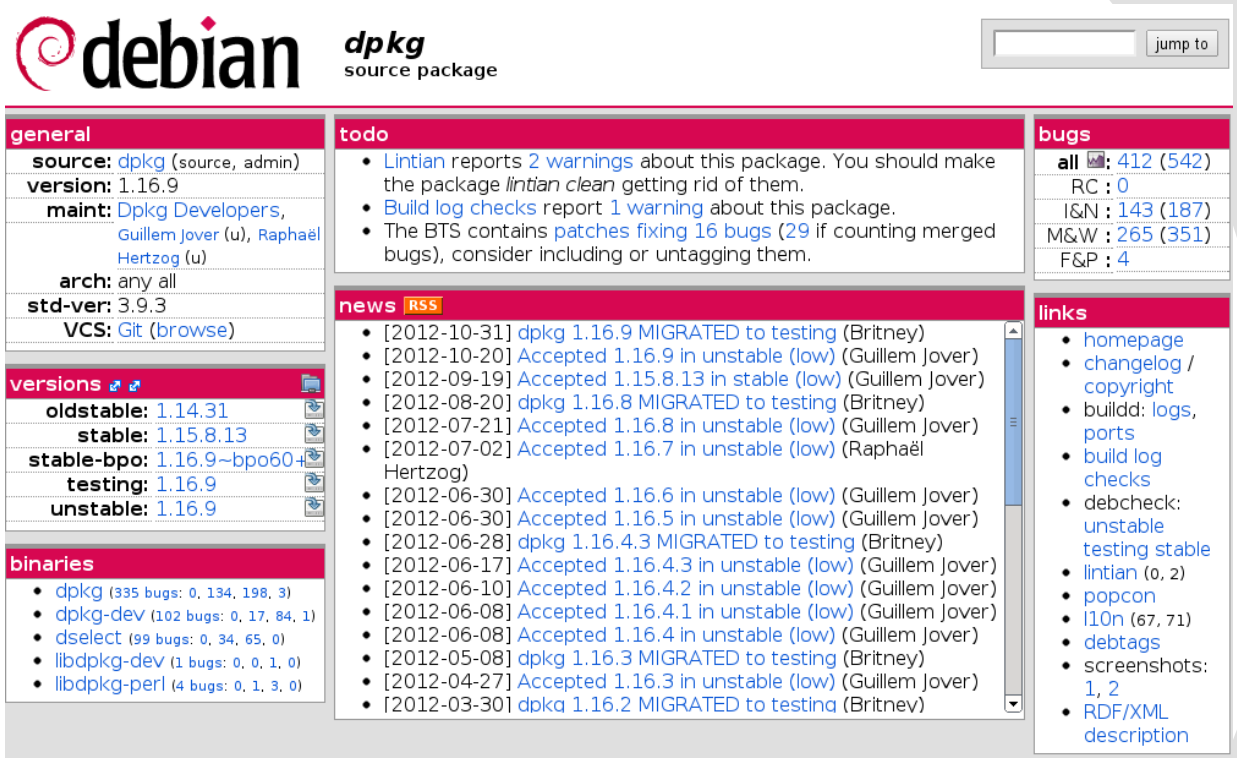
Contributing #1 — using Debian

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`



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

Contributing #2 — adopt packages in need of love

- find the ones you use:

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

  apt-get install how-can-i-help

- learn packaging with the Debian packaging tutorial

  http://www.debian.org/doc/manuals/packaging-tutorial/packaging-tutorial.en.pdf[1]

  or:

  apt-get install packaging-tutorial

[1] in attesa di traduzione in italiano!

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 code in page footer

Example (`http://buildd.debian.org`)

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.

Example (`http://sources.debian.net`)

Debsources — Copyright (C) 2011–2013 Matthieu Caneill, Stefano Zacchiroli, and contributors. License: GNU AGPLv3. [...] Source code: Git. Contact: info@sources.debian.net.

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

Thanks!

Questions?

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http://identi.ca/zack

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