Debian: 18 years and counting

Stefano Zacchiroli

Debian Project Leader

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ISCTE — Instituto Universitário de Lisboa
Lisbon, Portugal

Outline

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Debian: once upon a time

Fellow Linuxers,
This is just to announce the <u>imminent completion</u> 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 <u>experts</u>
- 1st major distro developed "openly in the spirit of GNU" FSF-supported for a while

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 hardware support, documentation, smooth upgrades, i18n/l10n, the testing suite, runs anywhere, technical policy, package choice, ...
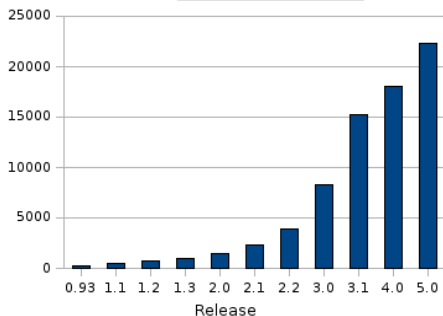
one of the largest GNU/Linux porting platforms

Debian 6.0 "Squeeze" — highlights

- dependency-based boot system (faster, more robust)
- completely Free Linux kernel, firmware included
- GNU/kFreeBSD as technology preview
- improved debian-installer
  - ext4, btrfs
  - ZFS (kFreeBSD)
  - better support for complex setups e.g. LVM + RAID + encryption
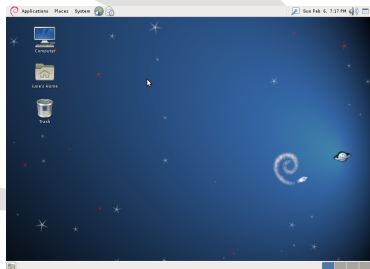
get Squeeze
`http://deb.li/squeeze`

# Debian 6.0 "Squeeze" — highlights (cont.)

- Debian Pure Blends
  - ▸ DebianEdu, Debian Med, Debian Science, Debian Accessibility, DebiChem, Debian EzGo, Debian GIS, Debian Multimedia, ...
  - ▸ `blends.alioth.debian.org/`
- new services
  - ▸ `snapshot.debian.org`
  - ▸ `backports.debian.org`
  - ▸ `squeeze-updates` suite (ex-volatile)
  - ▸ `screenshots.debian.net`
  - ▸ `ask.debian.net`
- updates throughout the archive
- choice: GNOME, KDE Plasma, Xfce, LXDE, ...
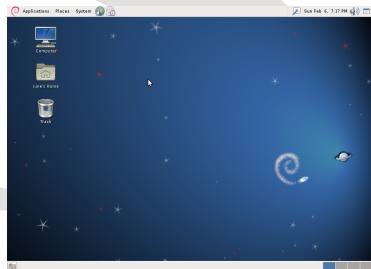
get Squeeze
`http://deb.li/squeeze`

Debian: the Project

Common goal:

Create the best, Free operating system.

Debian Social Contract (1997)
- 100% Free Software
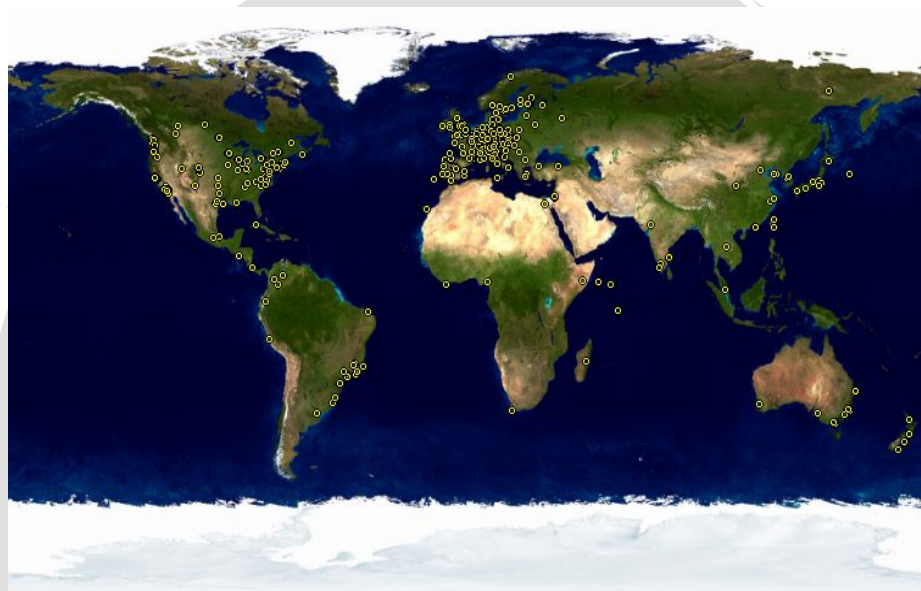- don't hide problems
- give back
- priorities: users & Free Software

Debian Constitution (1998)
Structures and rules of a Free-Software-compatible democracy

Strong motive to join: ≈ 1'000 volunteers, world-wide

Debian: the Project (cont.)

Outline

1. Debian and Squeeze

2. **Specialties**

3. Derivatives

4. Contribute

Debian: one of a kind?

1993 — not many distros back then
18 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 <u>software</u>
     firmware included !

   ▸ in its <u>infrastructure</u>
     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, . . .

Outline

Interlude — derivatives how to

Free Software 101

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

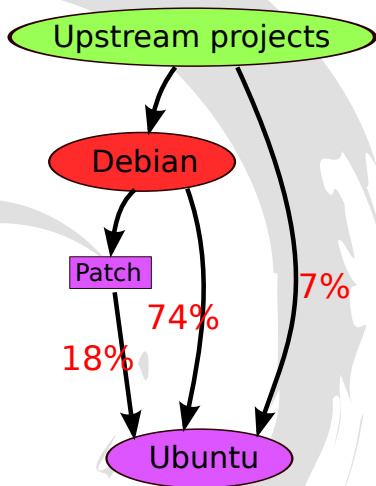Debian: a base for ≈130 active derivatives — distrowatch.com

- Linspire, Liurex, Mint, LiMux, Sidux, gnuLinEx, Grml, MEPIS, Xandros, Ubuntu, Univention, Damn Small Linux, Collax, Euronode, Floppix, Gibraltar, Kanotix, Knoppix, PureOS, gNewSense, LMDE, 64 Studio, Elive, Freespire, Jolicloud, Kurumin, Maemo, Neopwn, OpenZaurus, Parsix, Xebian, Hackable:1, aptosid, . . .

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	$\leftrightarrow$	corporate
universe	$\leftrightarrow$	community

  - ▶ heavily customized/forked in main
  - ▶ very close to Debian elsewhere
- sprouting its own derivatives ($\approx$70)
  - ▶ ... as Debian *transitive* derivatives

Upstream projects → Debian

Debian → Patch → 18% → Ubuntu

Debian → 74% → Ubuntu

Upstream projects → 7% → Ubuntu

Data for Lucid Lynx, main + universe
picture is courtesy of Lucas Nussbaum

Do you Debian?

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

Linspire, Liurex, Mint, LiMux, Sidux, gnuLinEx, Grml, MEPIS,
Xandros, Ubuntu, Univention, Damn Small Linux, Collax,
Euronode, Floppix, Gibraltar, Kanotix, Knoppix, PureOS,
gNewSense, LMDE, 64 Studio, Elive, Freespire, Jolicloud,
Kurumin, Maemo, Neopwn, OpenZaurus, Parsix, Xebian,
Hackable:1, aptosid, Ubuntu Studio, Mythbuntu, ArtistiX,
Asturix, Goobuntu, LinuxMCE, nUbuntu, Peppermint,
TurnKey Linux, Zenix, . . .

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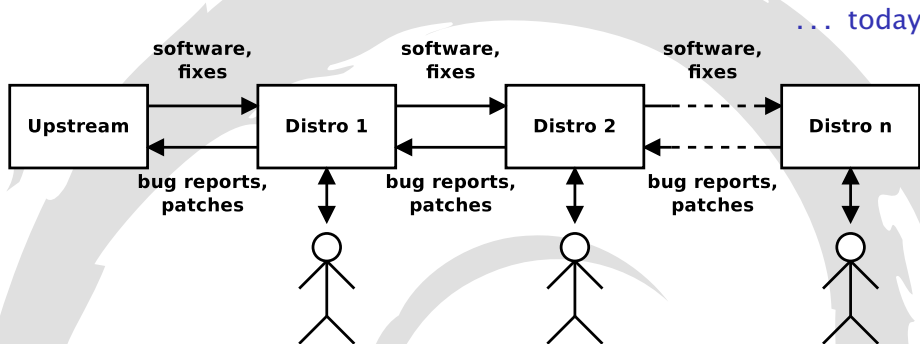heavily depend on Debian and on its well-being

even if your distro hasn't told you
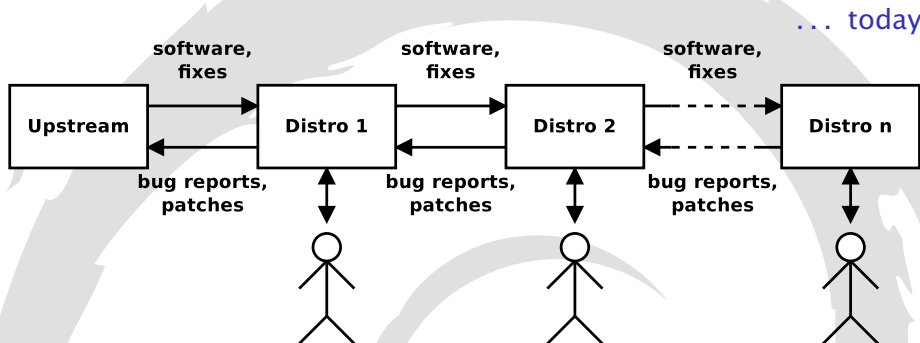
The distribution pipeline

yesterday . . .
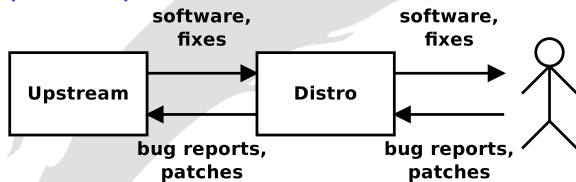
The *new* distribution pipeline

... today

The *new* distribution pipeline

. . . today

That's wonderful!

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

But.

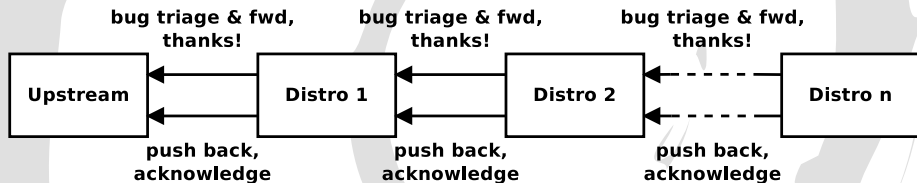- should be sustainable
- to everybody's benefit

Outline

Contributing code: where?

To depend upon the Debian community, and be respected there, just grok the mantra!

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

Contributing — work with Debian

- test, report, triage, fix bugs
    - reportbug on your Debian box
    - 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 ⇒ join a team
    - http://wiki.debian.org/Teams

http://wiki.debian.org/HelpDebian

Contributing other resources

even if completely volunteer-driven, Debian needs resources

- hardware for essential services
  - ▸ archive, buildds, development 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

Thanks!

Questions?

Stefano Zacchiroli
leader@debian.org

http://upsilon.cc/zack
http://identi.ca/zack