Debian: 18 years and counting

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Debian Project Leader

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Business Applications track
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We now have a body of software accessible to everybody on earth so robust and so profound in its possibilities, that we are a few man months away from doing whatever it is that anybody wants to do with computers all the time.

— Eben Moglen, speech at Harvard Law School

The question is no longer whether Open Source makes sense [for business], but when and how best to use Open Source to pursue business objectives.

— Bdale Garbee, LCA 2009

- it takes two to tango
- understanding each other is key
  - I can—and will—only show you my side of the coin...
1. Debian and Squeeze
2. Specialties
3. Derivatives
4. Contribute
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
Debian: the operating system

flagship product: Debian stable

- binary distribution
- completely Free (DFSG)
- released every 24 months (≈)
- 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, ...
Debian 6.0 “Squeeze” — some numbers

- released 6 February 2011
- 2 years of development
- 150,000 bugs fixed
- 29,000 packages available
- 11 architectures, 2 kernels
  - Linux: i386, amd64, armel, powerpc, sparc, ia64, mipsel, s390, mips
  - kFreeBSD: i386, amd64
- 2 Blu-ray, or 8 DVD, or 52 CD, or 23,472 floppy, or ... the Internet!

get Squeeze from http://deb.li/squeeze
Debian 6.0 “Squeeze” — highlights

- dependency-based boot system (faster, more robust)
- GNU/kFreeBSD as technology preview
- completely Free Linux kernel
- debian-installer
  - ext4, btrfs
  - ZFS (kFreeBSD)
  - better support for complex setups (e.g. lvm+RAID+encryption)
Debian Pure Blends
- DebianEdu, Debian Med, Debian Science, Debian Accessibility, DebiChem, Debian EzGo, Debian GIS, Debian Multimedia, ...
- http://blends.alioth.debian.org/

ew services
- http://snapshot.debian.org
- http://backports.debian.org
- squeeze-updates suite (ex-volatile)
- http://screenshots.debian.net
- http://ask.debian.net

10'000 new packages
updates throughout the archive
choice: KDE Plasma, GNOME, Xfce, LXDE, ...
Debian: the Project

Common goal:

Create the best, Free operating system.


“Contract” between Project members and the Free Software community at large

Debian Constitution (1998)

Structures and rules of a Free-Software-compatible democracy

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

- ≈ 900 DDs + 120 DMs
- Europe > North America > Australia ≈ Japan > Latin American
Outline

1. Debian and Squeeze
2. Specialties
3. Derivatives
4. Contribute

Debian: 18 years and counting

LinuxTag 2011 10 / 29
Debian: one of a kind?

1993 — not many distros back then
17 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 $2^{nd}$ 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, ...
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 \(\approx 130\) active derivatives — distrowatch.com

- Linspire, Skolelinux, Liurex, Mint, LiMux, Sidux, gnuLinEx, Grml, MEPIS, Xandros, Ubuntu, Univention, Damn Small Linux, Collax, Euronode, Floppix, Gibraltar, Kanotix, Knoppix, PureOS, gNewSense, 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 ↔ corporate
  - universe ↔ community
    - heavily customized/forked in main
    - very close to Debian elsewhere

Data for Lucid Lynx, main + universe picture is courtesy of Lucas Nussbaum
Drowning in (Debian) derivatives

Not only Ubuntu . . .
but a whole tree of derivatives (of derivatives . . .) rooted at Debian

**Debian derivatives** (≈130)
Linspire, Skolelinux, Liurex, Mint, LiMux, Sidux, gnuLinEx, Grml, MEPIS, Xandros, Ubuntu, Univention, Damn Small Linux, Collax, Euronode, Floppix, Gibraltar, Kanotix, Knoppix, PureOS, gNewSense, 64 Studio, Elive, Freespire, Jolicloud, Kurumin, Maemo, Neopwn, OpenZaurus, Parsix, Xebian, Hackable:1, aptosid, . . .

**Ubuntu derivatives** (≈70)
Ubuntu Studio, Mythbuntu, ArtistiX, Asturix, Goobuntu, LinuxMCE, nUbuntu, Peppermint, TurnKey Linux, Zenix, . . .

$\texttt{distro}$ derivatives
...

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Ubuntu appears to be the most customized Debian derivative
other derivatives ⇒ much larger amount of pristine packages

if you are running a Debian 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 ...

Upstream

software, fixes

Distro

software, fixes

person

bug reports, patches

bug reports, patches
The *new* distribution pipeline

<table>
<thead>
<tr>
<th>Upstream</th>
<th>Distro 1</th>
<th>Distro 2</th>
<th>Distro n</th>
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... today
That’s wonderful!

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

But.

- should be **sustainable**
- to everybody’s **benefit**
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

Stefano Zacchioli (Debian)
Contributing code: where?

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

Free Software is bigger and more important than Debian, Ubuntu, 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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**Diagram:**

- **Upstream**
  - push back, acknowledge
- **Distro 1**
  - push back, acknowledge
- **Distro 2**
  - push back, acknowledge
- **Distro n**
  - push back, acknowledge

**Bug triage & fwd, thanks!**
Contributing 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

http://www.debian.org/donations
Partner with Debian

Take donations to the next level

**Development partners**
- provide equipment
- provide technical services or consulting
- commercial vendors who maintain Debian packages
- assist or lead porting efforts

**Service partners**
- assist release distribution
- provide a forum for Debian PR
- provide non-technical services or consulting

**Partners Program**

http://www.debian.org/partners/partners
Come to know us — DebConf11

- DebConf11 — 12th Debian Project’s developer conference
- 24–30 July 2011, Banja Luka (Bosnia and Herzegovina)
- [http://debconf11.debconf.org](http://debconf11.debconf.org)
- sponsorship opportunities: [http://debconf11.debconf.org/sponsorship.xhtml](http://debconf11.debconf.org/sponsorship.xhtml)
Thanks!

Questions?

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