Debian: 19 years and counting

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25 June 2012
Debian for Scientific Facilities Days
European Synchrotron Radiation Facility
Grenoble, France
Outline

1. Debian and Wheezy
2. Specialties
3. Derivatives
4. Contribute
Prelude — the notion of “distribution”

- distributions are meant to ease **software management**
- key notion: the abstraction of **package**
- offer **coherent collections** of software
- killer application: **package managers**
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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, …

one of the largest GNU/Linux porting platforms
Debian 6.0 “Squeeze” — looking back

- 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 Science, 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 (cont.)

- **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™*
  - ETA: Q4 2012 – Jan 2013

**Contribute, today**

- install or upgrade to Wheezy
- report bugs (+ patches)
Debian: the Project

Common goal:

Create the best, Free operating system.

- 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: ≈ 1’000 volunteers, world-wide
Debian: the Project (cont.)

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ESRF, Grenoble
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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, Mooblin, 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?

Stefano Zacchirolı́ (Debian)
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\textsuperscript{nd} class packages, all are equal

Debian release mantra

\textit{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

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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-o-cracy

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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Stefano Zacchirol (Debian)
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

ev
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 \( \approx 140 \) active derivatives — distrowatch.com

- Tucunare, LinEx, Inquisitor, Grml, UniventionCorporateServer, Vanillux, Emdebian, Crunchbang, PureOS, StormOS, Ubuntu, GNUSTEP, gNewSense, Debatchena, 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

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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, Debabelenas, 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

... today

![Diagram of distribution pipeline]

- **Upstream**
  - Software, fixes
  - Bug reports, patches

- **Distro 1**
  - Software, fixes
  - Bug reports, patches

- **Distro 2**
  - Software, fixes
  - Bug reports, patches

- **Distro n**
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 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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even if completely volunteer-driven, Debian uses **resources**
- **hardware** for essential services
  - archive, buildds, devel. machines, ...
- **money** for hw-related services
  - guarantees, shipments, hosting, ...
- **money to sponsor developer meetings**
  - strengthen the community
  - get work done

**Donations**
- donations: [http://www.debian.org/donations](http://www.debian.org/donations)
- partners program: [http://www.debian.org/partners](http://www.debian.org/partners)
Contributing — work with Debian

- test, report, triage, fix bugs
  - reportbug on your Debian
  - http://bugs.debian.org
- translation (fr)
  - http://wiki.debian.org/fr/DebianWiki
  - http://www.debian.org/intl/french/
  - http://lists.debian.org/debian-l10n-french/
- 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 are equally welcome!

Zack’s tips for wannabe Debianers

1. choose 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!
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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