Debian: 17 anni di software libero, “do-ocracy” e democrazia

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Outline

1. What is Debian?
   - History
   - An OS, a project, a community

2. What’s so special about Debian?

3. More in-depth
   - Commitments
   - Decision making
   - Processes

4. Derivatives

5. Contribute to Debian
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**”
- GNU-supported for a while

**trivia:** named after **DEBra** Lynn and **IAN** Ashley Murdock
Since then — 14 releases

1993  development snapshots
1994  0.91
1995  0.93r5, 0.93r6, 1.0
1996  1.1 (Buzz), 1.2 (Rex)
1997  1.3 (Bo)
1998  2.0 (Hamm)
1999  2.1 (Slink)
2000  2.2 (Potato)
2002  3.0 (Woody)
2005  3.1 (Sarge)
2007  4.0 (Etch)
2009  5.0 (Lenny)
2010  (?) 6.0 (Squeeze)

trivia:
why does Buzz have a (Debian) swirl on his chin?

Stefano Zacchirol (Debian)
Since then — 12 Debian Project Leaders (DPL)

1993–1996  Ian Murdock
1996–1997  Bruce Perens
1997–1998  Ian Jackson
1999–2001  Wichert Akkerman
2001–2002  Ben Collins
2002–2003  Bdale Garbee
2003–2005  Martin Michlmayr
2005–2006  Branden Robinson
2006–2007  Anthony Towns
2007–2008  Sam Hocevar
2008–2010  Steve McIntyre
2010–  yours truly
Where do I fit in?

- user since 1998
- DD in March 2001
- package maintainer
  - OCaml (team leader), XML, maths, Python, VIM, ...
- Quality Assurance team
  - Package Tracking System [http://packages.qa.debian.org](http://packages.qa.debian.org)
- DPL candidate in 2009 (FAIL) and 2010
- DPL since April 2010
What is Debian?

3 aspects, interlinked:
1. an operating system
2. a project
3. a community
Debian: the operating system

- completely Free Software
  - DFSG
  - contrib, non-free
- a dozen architectures: alpha, amd64, arm, hppa, i386, ia64, mips, powerpc, s390, sparc
- 2 non-Linux ports upcoming
- features miscellanea...
  - ports, stability, packaging system, documentation, old hw support, smooth upgrades, i18n/l10n, the testing suite, runs anywhere, technical policy, a lot of packages, ...

The largest GNU/Linux distro/porting platform

- 29’000 packages (Squeeze)
Debian: the project

Common goal:

Create the best, Free operating system.

Debian Social Contract w/ the Free Software community (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: ≈ 1’000 volunteers, world-wide
- ≈ 900 DDs + 120 DMs
- Europe > North America > Australia ≈ Japan > Latin American
Debian: the project (cont.)
Debian: the community

Open development
- we don’t hide problem
- fairly easy to impact the work (“show me the code!”)

Large amounts of communication
- mailing lists
- IRC channels
- (a few) Web services (growing)

Large number of (tech-savvy) users
- users help each other, contribute packages, get involved
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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
- . . .

- support
- packaging system
- user base
- look & feel
- community

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 sw experts
- no 2\textsuperscript{nd} class packages, all are equal

Debian release mantra

we release when it’s ready
Debian’s special #2: freedom

Firm principles: devs 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
- trust Debian not to betray sw freedom
- set a **high bar for sw freedom** advocates
Debian’s special #3: independence

Debian is an independent entity

- no (single) company babysitting us
- living up on:
  1. donations (money & hardware)
  2. gift-economy

... quite 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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Social Contract (1997)

one of Debian Foundation Documents
tacit agreement between Debian and the community

we declare that:

1. Debian will remain 100% Free Software
2. we will give back to the Free Software community
3. we will not hide problems
4. our priorities are our users and Free Software
5. works that do not meet our Free Software standards
   ▶ not Debian, but hosted there
   ▶ main, contrib, non-free

http://www.debian.org/social_contract
Debian Free Software Guidelines (DFSG)

the Social Contract relies on a “definition” of Free Software
the other Debian Foundation Document

- guidelines only — not hard rules
- used to help decide what is part of Debian
- apply to the “license” of a given software

trivia: basis for Open Source Definition / Initiative

http://www.debian.org/social_contract#guidelines
1. must allow free redistribution
2. must include source code
3. must allow derived works
   ▶ although may require integrity of the author’s source code
4. must not discriminate against
   ▶ person or groups
   ▶ fields of endeavour
5. distribution of license
   ▶ i.e. licenses apply implicitly / by default
6. license must not be specific to Debian
7. license must not contaminate other software
   ▶ e.g. on the same medium
some **DFSG-free** licenses:
- BSD, GPL, LGPL, MIT/X11, AGPL, CC-BY 3.0, ...  

some **non-DFSG-free** licenses:
- all the “bad” ones 
- GFDL w/ invariant sections
structure and rules for decision making in a Free Software-compatible democracy

- volunteers
- minimal “people management”
- “do-ocracy”
  - anybody can decide how to do their job
  - nobody can impose to others what to do

http://www.debian.org/devel/constitution
Constitution — bodies

- **individual developers** (= project members)
- **DPL** elected each year
  - represents Debian
  - coordinate project activities
  - decide upon Project assets
  - decision “garbage collector” (urgency / lack of responsible)
- **DPL delegates**
- **secretary**
- **trusted organizations**
  - manage Project assets
  - link with the real bureaucratic world
  - SPI (us), FFIS (de), Assoli (it), Debian.CH (ch), ASL (br), ...
Constitution — decision making

golden rule

do-ocracy, no formal process

formally, decisions are taken by:

1. developers as a whole
   - with general resolutions or elections
2. the DPL
3. the technical committee (CTTE)
4. individual developers working on some task ➔ default
5. DPL delegates
6. the project secretary

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1 overruling from top to bottom
General resolutions

- **initial proposal**
  - post to a specific mailing list
  - requires *seconds*, depend on n. of developer

- **discussion period**
  - might lead to alternative proposals
  - can put “on hold” decisions of any body

- **vote with Condorcet-based method**
- **single winner**
  - super majority (3:1) required to change Foundation Documents and Constitution
Day to day organization: teams!

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

- teams grow as jobs get bigger
- some “core teams” are DPL delegates, most are not
- examples
  - packaging teams for related packages
  - ftp-master
  - release team
  - security team
  - kernel team
  - debian-installer
  - debian-cd
  - ...
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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 extras
2. patch & rebuild packages as needed
3. sync periodically
Debian derivatives

Debian: a base for \(\approx 120\) 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
- reduce effort
A Debian derivative example — Ubuntu

- started in 2004 by Canonical
  *Linux for human beings*

- Debian derivative, periodic fork-merge release cycle

- initial staff: mostly “high-profile” DDs

- historical archive correlations
  - main ↔ corporate
  - universe ↔ community

- most popular Debian derivative
- larger user base than Debian (most likely)
Debian, Ubuntu, and upstreams

Debian: a “special” upstream

- off the shelf packages, not bare bone software
- quantitatively relevant...

Software

Upstream Projects

Debian

Ubuntu

Packages

picture is courtesy of Lucas Nussbaum
Ubuntu: work-flow and relationship with Debian

Data for Lucid Lynx main + universe
- rationale: universe is a selling point

Debian → Ubuntu
- not just “pull”
- some “push” too: give back to Debian

Picture is courtesy of Lucas Nussbaum
Drowning in derivatives

**Debian derivatives** ($\approx 120$)
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**
Ubuntu Studio, Mythbuntu, ArtistiX, Asturix, Goobuntu, LinuxMCE, nUbuntu, Peppermint, TurnKey Linux, Zenix, ...

Nice song and dance, but all the above:

1. should be **sustainable** . . .
2. . . . and **benefit Free Software** as a whole
The distribution pipeline

yesterday . . .

- **Upstream**
  - software, fixes
  - bug reports, patches

- **Distro**
  - software, fixes
  - bug reports, patches

- Person
  - software, fixes
  - bug reports, patches
The **new** distribution pipeline

![Diagram of the new distribution pipeline]

... today
The **new** distribution pipeline

That’s wonderful!

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

**But.**
Free Software is bigger and more important than Debian, Ubuntu, and any other distro or project.

Free Software golden rules and the distro pipeline:

1. **Give back**, i.e. reduce patch flow viscosity
2. **Give credit** where credit is due

![Diagram showing the distro pipeline with steps for upstream, distro 1, distro 2, and distro n, involving bug triage & fwd, thanks!, push back, acknowledge, and dashed lines indicating interaction.]
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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

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**Donations**

- donations: http://www.debian.org/donations
- partners program: http://www.debian.org/partners
Contributing — work with Debian

- test, report, triage, fix bugs
  - reportbug on your Debian
  - http://bugs.debian.org
- translation (it)
  - http://wiki.debian.org/it/DebianWiki
  - http://wiki.debian.org/L10n/Italian
  - http://lists.debian.org/debian-l10n-italian/
- 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

- advocacies required

**Debian Developer (DD)** become a project member

- upload access to all the archive
- voting rights
- all kind of contributions are equally welcome!

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**Zack’s tips for wannabe Debianers**

- choose a team: [http://wiki.debian.org/Teams](http://wiki.debian.org/Teams)
- stay on their mailing list and IRC channel
- triage bugs, test patches, etc. (for packagers)
- ... the rest will come!
Want to know more?

- on the web
  - http://www.debian.org
  - http://wiki.debian.org
- mailing lists: http://lists.debian.org
- IRC (debian-* channels on irc.debian.org)
- ask me!
Thanks!

Questions?

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about the slides: available at
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