Debian: 18 years and counting

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Business

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. . .

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, . . .
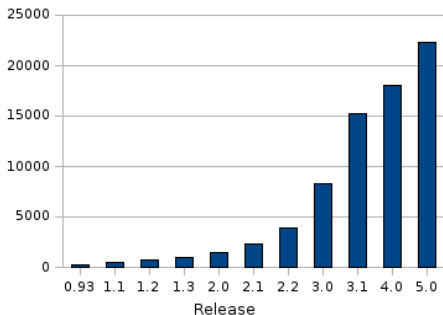
one of the largest GNU/Linux porting platforms

Debian 6.0 "Squeeze" — 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!
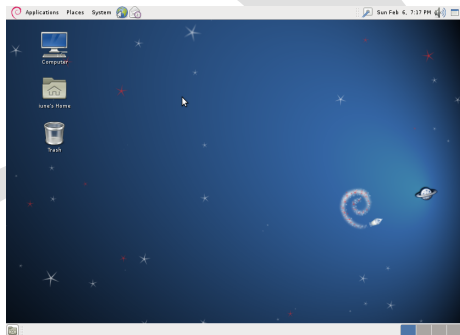
get Squeeze from
`http://deb.li/squeeze`

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 6.0 "Squeeze" — highlights (cont.)

- Debian Pure Blends
  - ▸ DebianEdu, Debian Med, Debian Science, Debian Accessibility, DebiChem, Debian EzGo, Debian GIS, Debian Multimedia, . . .
  - ▸ http://blends.alioth.debian.org/
- new 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.

Debian Social Contract (1997)

"Contract" between Project members and the Free Software community at large

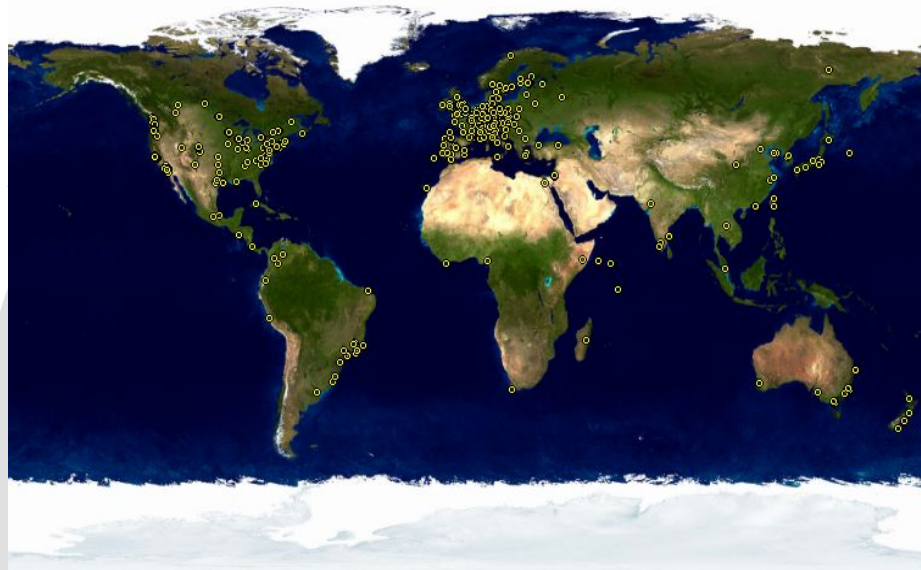### Debian Constitution (1998)

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

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 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

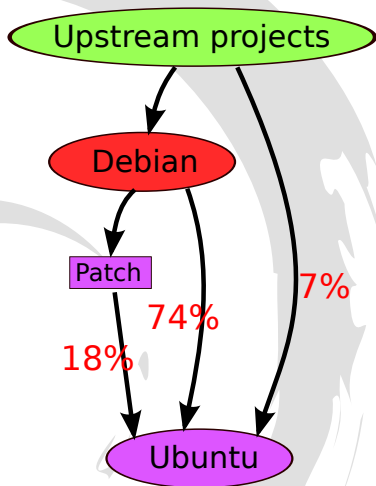Debian: a base for ≈130 active derivatives — distrowatch.com

- Linspire, 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

7%

74%

18%

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, . . .

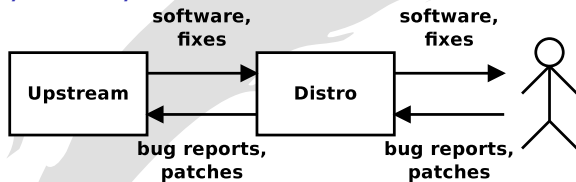## $distro derivatives

. . .

Do you Debian?

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

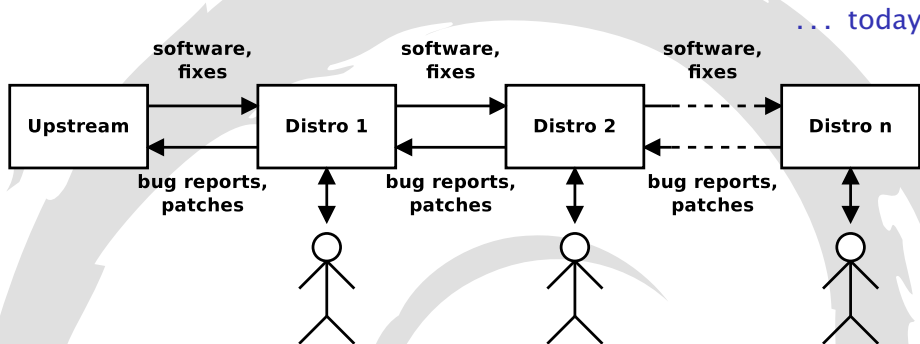if you are running a Debian derivative, chances are you heavily depend on Debian and on its well-being

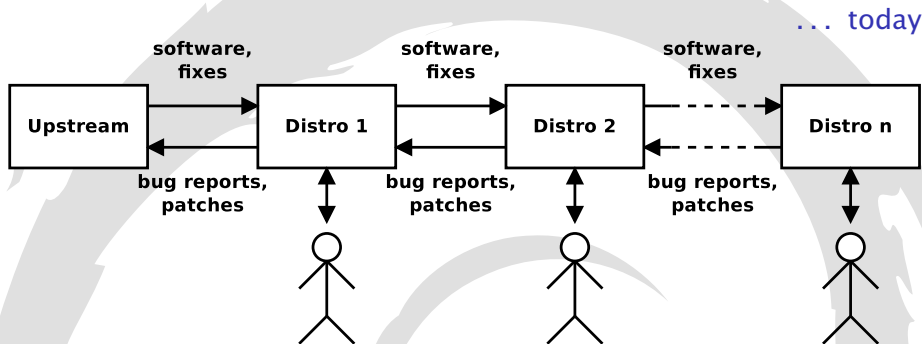*even if your distro hasn't told you*

The distribution pipeline

yesterday . . .

The *new* distribution pipeline
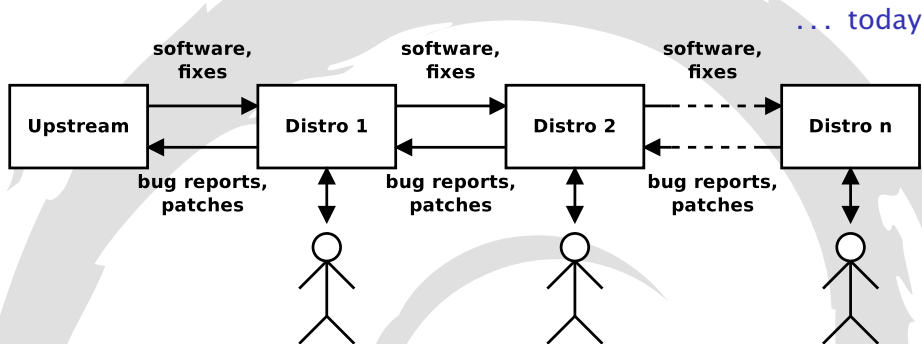
The *new* distribution pipeline

That's wonderful!

But.

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

- should be sustainable
- to everybody's benefit

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

1. Debian and Squeeze

2. Specialties

3. Derivatives

4. **Contribute**

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
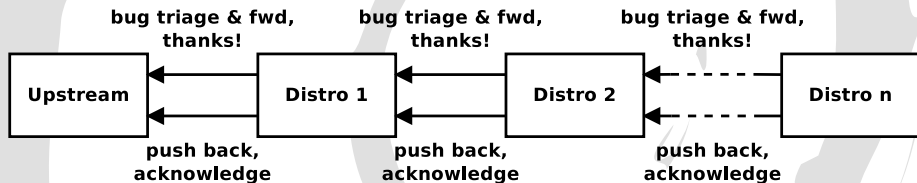
Contributing resources

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
- sponsorship opportunities:
  http://debconf11.debconf.org/sponsorship.xhtml

Thanks!

Questions?

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@zack on http://identi.ca