

# Debian, Ubuntu, and 101 other derivatives

Stefano Zacchioli

Debian Project Leader

20 November 2010  
Ubuntu Party — Toulouse, France

# Outline

- 1 Debian
  - What's so special about it?
- 2 Ubuntu
  - Relationship with Debian
  - Debian ↔ Ubuntu collaboration
- 3 Free Software
  - The distro ecosystem

# Outline

- 1 Debian
  - What's so special about it?
- 2 Ubuntu
  - Relationship with Debian
  - Debian ↔ Ubuntu collaboration
- 3 Free Software
  - The distro ecosystem

# Debian: once upon a time

*Fellow Linuxers,*

*This is just to announce the imminent completion of a **brand-new Linux release**, which I'm calling the **Debian Linux Release**. [...]*

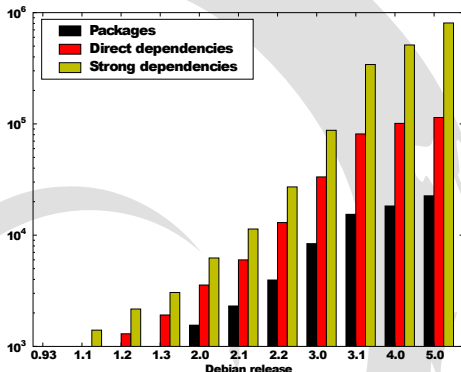
*Ian A Murdock, 16/08/1993  
comp.os.linux.development*

- 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 **DEB**ra Lynn and **IAN** Ashley Murdock

# Debian: the operating system

- completely **Free Software**
  - ▶ **DFSG**
  - ▶ **contrib, non-free**
- a dozen architectures  
alpha, amd64, arm(el), hppa, i386,  
ia64, mips(el), 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
- don't hide problems
- give back
- priorities: users & Free Software

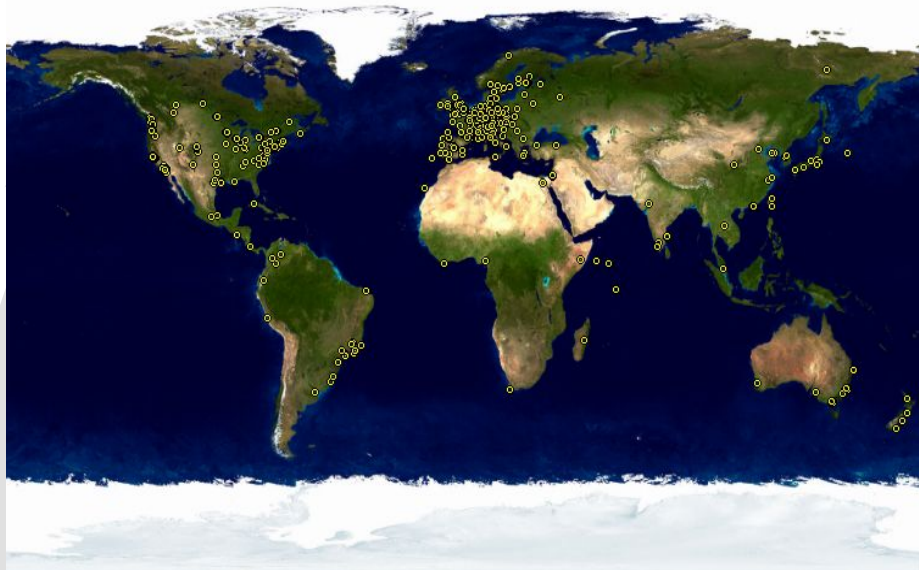
Debian Constitution (1998)

Structures and rules of a Free-Software-compatible democracy

Strong motive to join:  $\approx$  1'000 **volunteers**, **world-wide**

- $\approx$  900 DDs + 120 DMs
- Europe > North America > Australia  $\approx$  Japan > Latin American

## Debian: the project (cont.)



# 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<sup>nd</sup> 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-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 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

# Outline

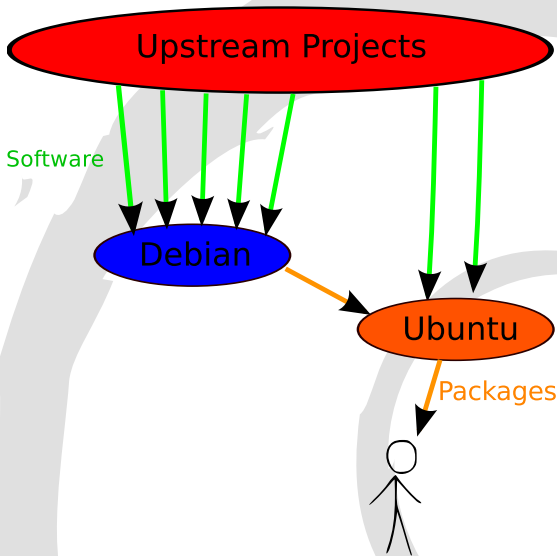
- 1 Debian
  - What's so special about it?
- 2 Ubuntu
  - Relationship with Debian
  - Debian ↔ Ubuntu collaboration
- 3 Free Software
  - The distro ecosystem

# 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)



# Ubuntu, Debian, and upstreams



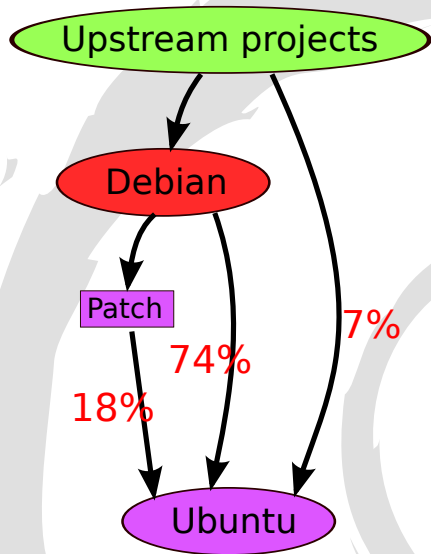
Debian: a “special” upstream

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

picture is courtesy of Lucas Nussbaum



# Ubuntu: work-flow & 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

# Debian ↔ Ubuntu: why collaborate?

## Ubuntu interests

- pushing back changes **eases merges**
- Debian maintainers are field experts; (universe) **quality improvements**

## Debian interests

- Ubuntu has more users, i.e. **more feedback**
  - ▶ Ubuntu reaches out (future) contributors we don't
- cooperate with derivatives

## Mutual interests

- discuss **big changes** together
- improving **Free Software** is what matter most, right?

# Debian ↔ Ubuntu: today

- some **bug reports** fed back to Debian
- some Ubuntu **changes** fed back to Debian
- some **early testing** of big changes (e.g. gcc, hardening)
- **mixed teams**: tons!
  - ▶ pkg-games
  - ▶ pkg-java
  - ▶ DPMT / PAPT
  - ▶ d-i
  - ▶ dpkg(-vendor)
  - ▶ X strike force
  - ▶ security
  - ▶ pkg-freevo, pkg-mono, pkg-perl
  - ▶ APT stack
  - ▶ live-helper, nginx
  - ▶ PAM
  - ▶ \$your\_team\_here
- common trend: **Ubuntu devs become DM/DD**

# Debian ↔ Ubuntu: (Ubuntu) pitfalls

## Difficulties, as seen from the Debian side

- perceived reluctance in **giving credit**
- LP bugs/patches not triaged/forwarded
  - ▶ people don't want to special case Ubuntu: they *wait* for bugs
  - ▶ still, people do care about “their” packages in Ubuntu
- grudges with Canonical employees reflect on Ubuntu as a whole

(expected) golden rule: **be a good downstream**

# Debian ↔ Ubuntu: (Debian) pitfalls

## Difficulties, when interacting with Debian

- unresponsiveness → abandoned package
- unresponsiveness → no time (we're volunteers...)
- “go to hell” answers → bad heritage, not representative
  - ▶ 1'000 DDs, no one true “Debian-Ubuntu” perspective

What else?

# Debian ↔ Ubuntu: getting better

Talking to each other is the first necessary step.

## Derivatives Front Desk

<http://wiki.debian.org/DerivativesFrontDesk>

[derivatives@debian.org](mailto:derivatives@debian.org)

[debian-derivatives@lists.debian.org](mailto:debian-derivatives@lists.debian.org)

also: #debian-ubuntu on [irc.oftc.net](http://irc.oftc.net)

- *tremendous opportunity for cooperation*

— Jorge Castro, DebConf10

- good participation from Debian and Ubuntu
  - ▶ other derivatives are joining the fun

- **Debian ↔ Ubuntu as example to others**

(good and bad)

# Outline

- 1 Debian
  - What's so special about it?
- 2 Ubuntu
  - Relationship with Debian
  - Debian ↔ Ubuntu collaboration
- 3 Free Software
  - The distro ecosystem



# 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

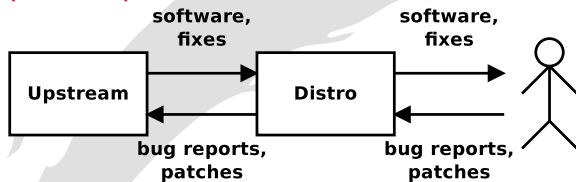
Ubuntu Studio, Mythbuntu, ArtistiX, Asturix, Goobuntu, LinuxMCE, nUbuntu, Peppermint, TurnKey Linux, Zenix, ...

Nice song and dance, but all the above:

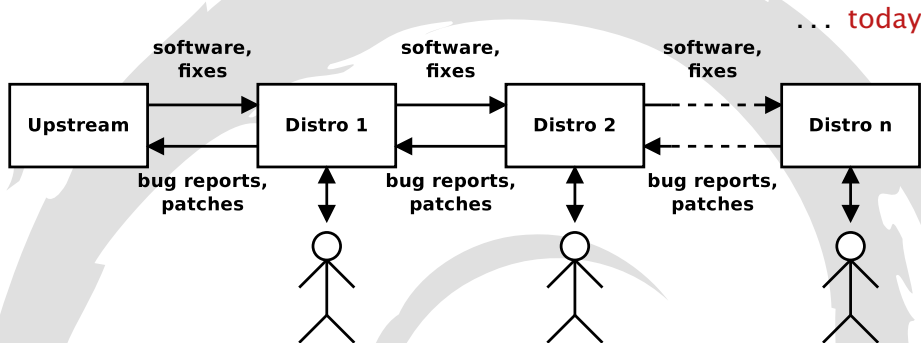
- 1 should be sustainable...
- 2 ... to **benefit Free Software** as a whole

# The distribution pipeline

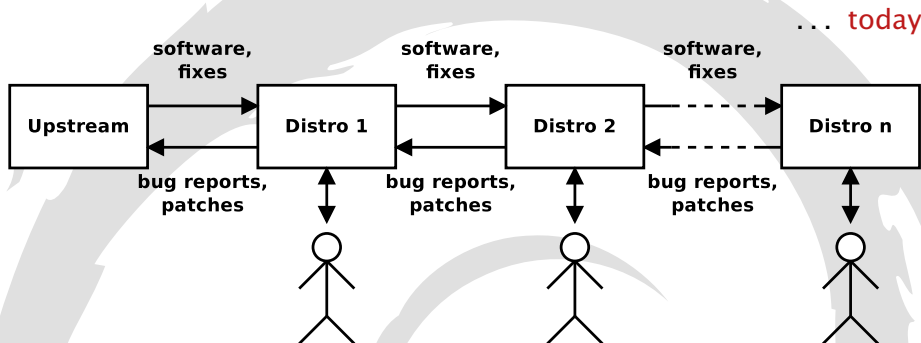
yesterday ...



# The *new* distribution pipeline



# The *new* distribution pipeline



That's wonderful!

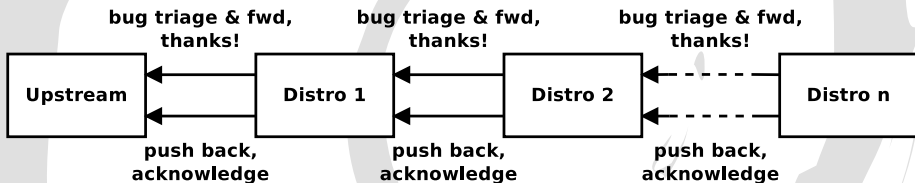
- **freedom** spreads
- more **eyeballs** swallow more bugs
- more potential **contributors**

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



# Thanks!

## Questions?

Stefano Zacchioli  
Teader@debian.org  
<http://upsilon.cc/zack>

about the slides:  
available at  
copyright © 2010  
license

<https://gitorious.org/zacchiro/talks/trees/master/2010/201011-toulouse>  
Stefano Zacchioli  
CC BY-SA 3.0 — Creative Commons Attribution-ShareAlike 3.0