

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

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Debian Project Leader

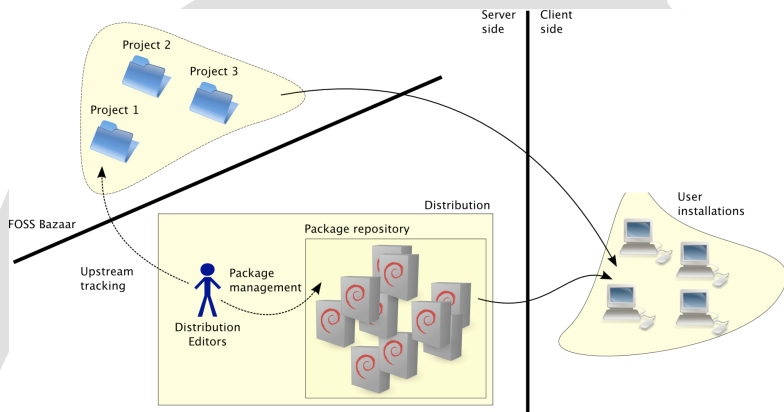
23 October 2010

Linux Day — Modena, Italy

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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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

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?

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>
- DPL candidate in 2009 (FAIL) and 2010
- DPL since April 2010

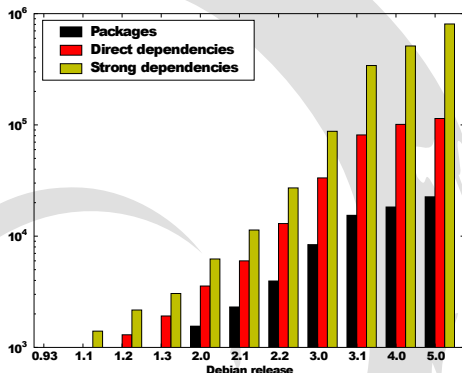
What is Debian?

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
- don't hide problems
- give back
- priorities: users & Free Software

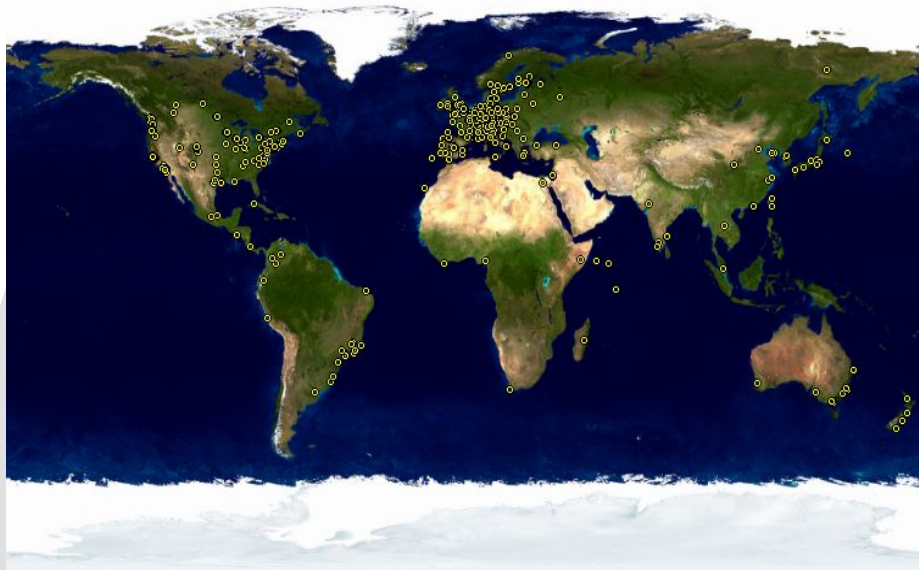
Debian Constitution (1998)

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: 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 2nd 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, ...

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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

- 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

¹overruling from top to bottom

General resolutions

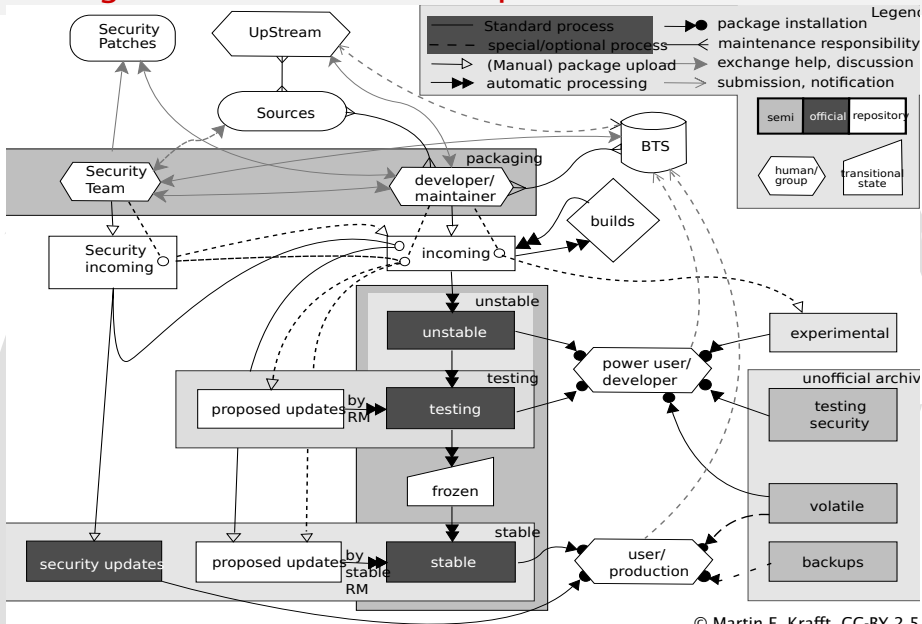
- **initial proposal**
 - ▶ post to a specific mailing list
 - ▶ requires **seconds**, depend on n. of developer
- **discussion** period
 - ▶ might lead to alternative proposals
 - ▶ can put “on hold” decisions of any body
- vote with Condorcet-based method
- single winner
 - ▶ super majority (3:1) required 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
 - ▶ ...

Package work-flow & release process



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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 ≈ 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, ...

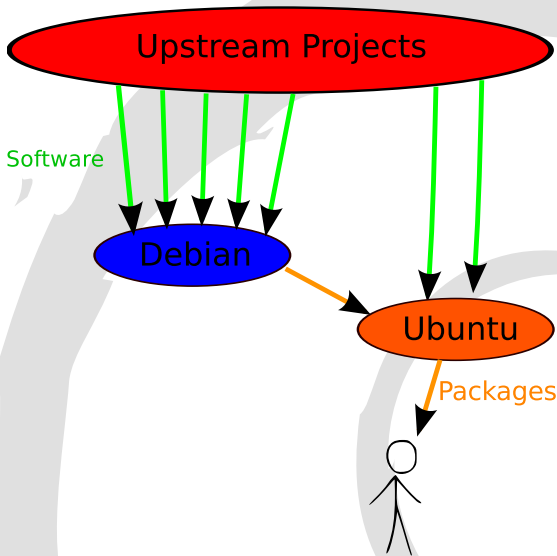
Why?

- 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

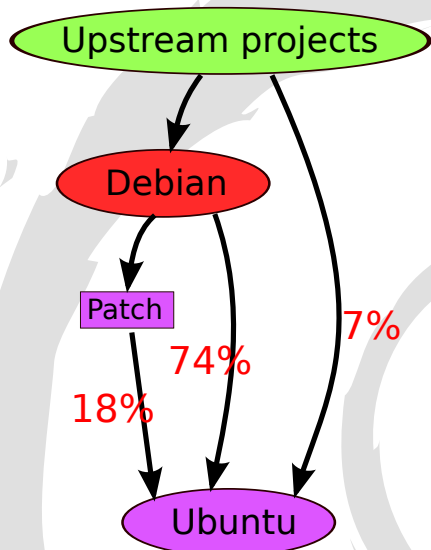


Debian: a “special” upstream

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

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 (≈ 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

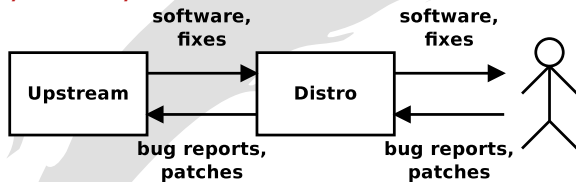
Ubuntu Studio, Mythbuntu, ArtistiX, Asturix, Goobuntu, LinuxMCE, nUbuntu, Peppermint, TurnKey Linux, Zenix, ...

Nice song and dance, but all the above:

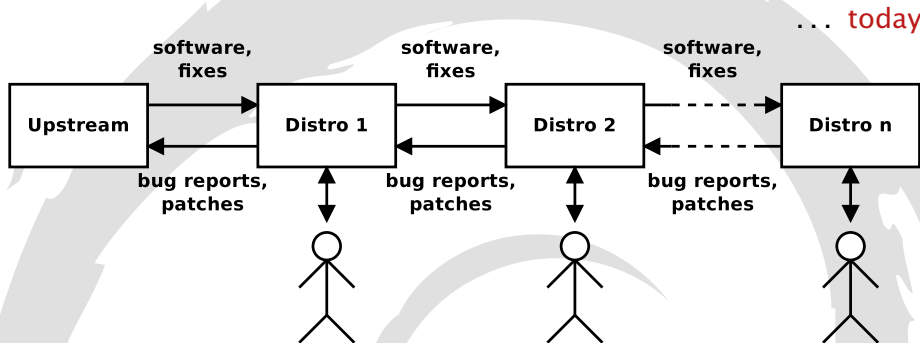
- 1 should be **sustainable** ...
- 2 ... and **benefit Free Software** as a whole

The distribution pipeline

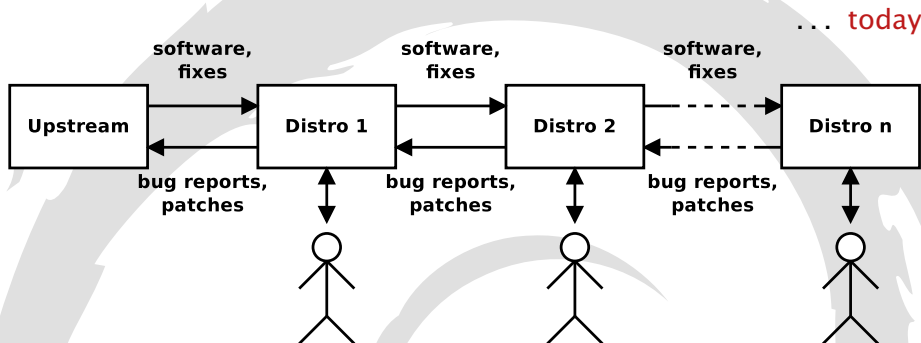
yesterday ...



The new distribution pipeline



The new distribution pipeline



That's wonderful!

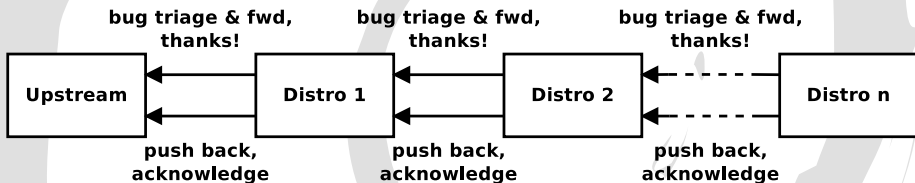
- freedom spreads
- more eyeballs swallow more bugs
- more potential contributors

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



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Contributing — donate to Debian

even if completely volunteer-driven, Debian uses **resources**

- **hardware** for essential services
 - ▶ archive, build servers, 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>
- 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!

Zack's tips for wannabe Debianers

- choose a team: <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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