The Debian Project

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Debian Project Leader

Free Software

- 1970s: Unix shared freely and developed organically

- Early 1980s: first attempts at turning Unix into a product

- Richard M. Stallman (RMS) is frustrated by the move away from the hackers culture

    - 1983: creation of the GNU project, intented to be a *complete Unix-compatible software system*
      ↝ GCC, Glibc, coreutils, gdb, bash, emacs, . . .

    - 1985: creation of the Free Software Foundation (FSF) to support the Free Software movement
      ↝ Free Software Definition, GPL license (and others), . . .

Free Software Definition

FREE SOFTWARE
FOUNDATION

The user has four fundamental freedoms:

1. Run the program, for any purpose
2. Study the program, change it
3. Redistribute copies to help one's neighbour
4. Distribute copies of modified versions to others

⇒ Control of software by the user, collaboration between users

Free Software licenses

- Many different free software licenses
- Copyleft or not:
    - *Can I release a modified version under a different license?*
    - Yes: BSD, MIT
    - No (copylefted): GPL, LGPL, Apache (except if GPLv3)
- Other differenciating factors:
    - Provisions against tivoization
    - Web applications
    - Software patents

Linux
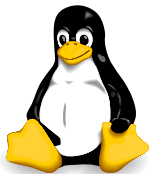
In 1991:

- All basic tools required for an operating system are developed
- Except the kernel: GNU Hurd is delayed
- Linus Torvalds writes a simple kernel, Linux
- GNU + Linux = a fully free Operating System, GNU/Linux

Linux is often used to refer to the whole system (not just the kernel)

Open Source and Free Software

- ▶ Free Software movement: strong ethical and moral focus
- ▶ Perceived as not suitable in a business environment
- ▶ Confusion about *Free* (beer/freedom)
- ▶ 1998: creation of the Open Source Initiative (OSI) to promote Open Source software
- ▶ Goals differ, but practically the same thing:
  People using *Open Source* tend to focus on business opportunities

Free Software today

- Foundation of many popular products and services
  Google, Facebook, Yahoo, Wikipedia, Linkedin, Twitter, Amazon

- Open development model
  version control, bug trackers, mailing lists, alpha/beta public releases

- *Coopetition* = Cooperation + Competition

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Part of the landscape of Free Software:
- 1983 – GNU
- 1991 – Linux
- 1993 – Slackware, Debian, Red Hat
- 1998 – OSI created by former DPL; definition based on DFSG
- 2004 – Ubuntu

Free Software without distributions

Many different:

- project hosting solutions (sourceforge, github, author's homepage, etc.)
- build systems (autotools, CMake, Rubygems, custom-made)
- causes of problems (dependencies, conflicting libraries, etc.)

1. download foo-1.0.tar.gz
   checksum mismatch, missing public key, etc.

2. `./configure`
   error: missing bar, baz,...

3. foreach (bar, baz, ...) go to 1 until success

4. make
   error: symbol not found

5. make install
   error: cp: cannot create regular file /some/weird/path
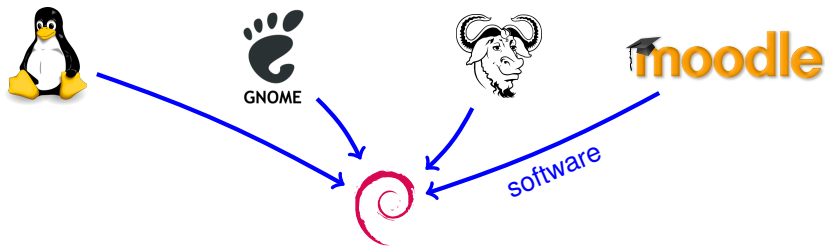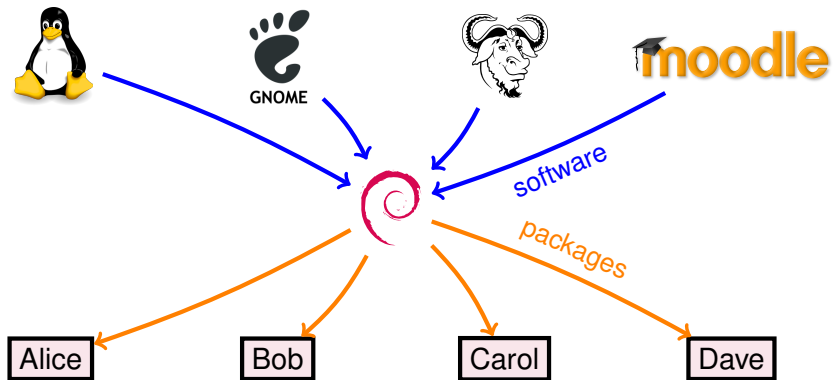
A Free Software distribution

GNOME

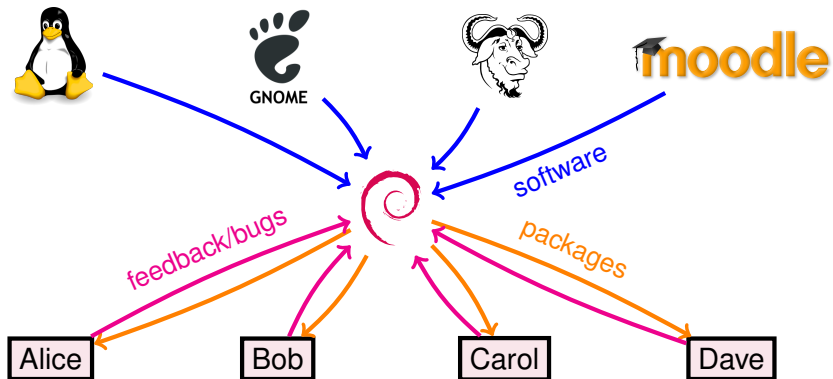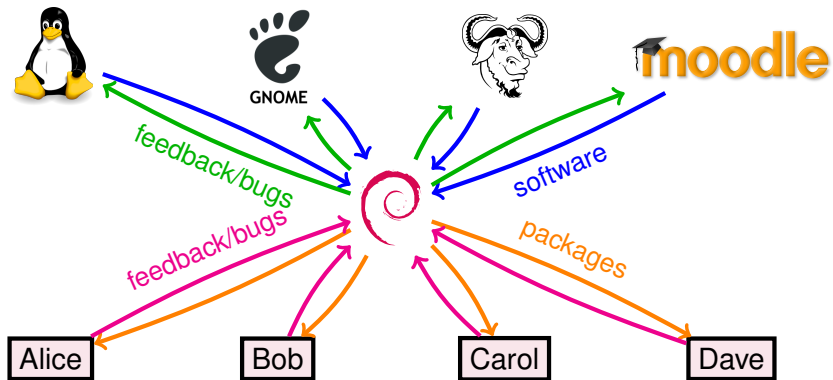| Alice | Bob | Carol | Dave |

A Free Software distribution
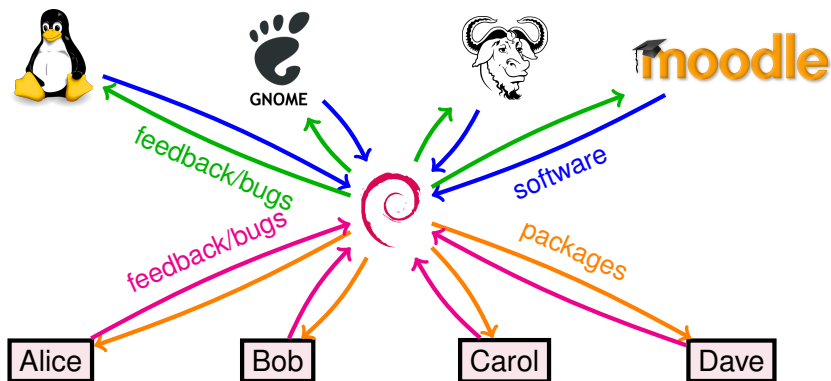
A Free Software distribution

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A Free Software distribution

1. Integration of upstream projects (avoid conflicting versions)
2. Efficient infrastructure to distribute software to users (mirrors)
3. Unified interface for software installation, upgrade and removal
4. Intermediate, unified support layer

A very successful project

- **20 000 source packages**, 41 000 binary packages
  (including many niche packages)
  - The largest Free Software archive
- **a dozen of ports** (with 3 different kernels – Linux, Hurd, FreeBSD)
  amd64, armel, armhf, hurd-i386, i386, ia64, kfreebsd-amd64, kfreebsd-i386, mips, mipsel, powerpc, s390, s390x, sparc
- 100% Free Software (including infrastructure)
- Known for stability, robustness, expertise of package maintainers
  - Huge focus on QA tests, including for packages in the long tail
- Stable releases every 2 years (+/- few months)

| release	cycle	freeze
6.0 "squeeze"	24 months	26 weeks
7.0 "wheezy"	28 months	44 weeks
8.0 "jessie"	23 months	24 weeks

Who is doing Debian?

- Thousands of volunteers (including ~1 000 Debian Developers)
- Organized in teams, focusing on:
    - Packaging tasks: Ruby, KDE, scientific, etc.
    and also: porters, security, release management, blends, translation, etc.
    - Distribution infrastructure: system administration, packages archive, build daemons, mirrors, quality assurance, etc.
    - Project support & communication: press, documentation, trademark, auditors & accounting, events, videos, etc.
- Real experts of their packages, and of their tasks in general

A distributed and independent organization

- Developers coming from 63 countries (us: 18%, de: 17%, **fr: 10%**)
- Distributed infrastructure: ubc.ca, bytemark.co.uk, grnet.gr, . . .
- Myriad of loosely-connected services ⤳ easy to add your own
- Assets held by several Trusted Organizations
- No company with a major influence on Debian
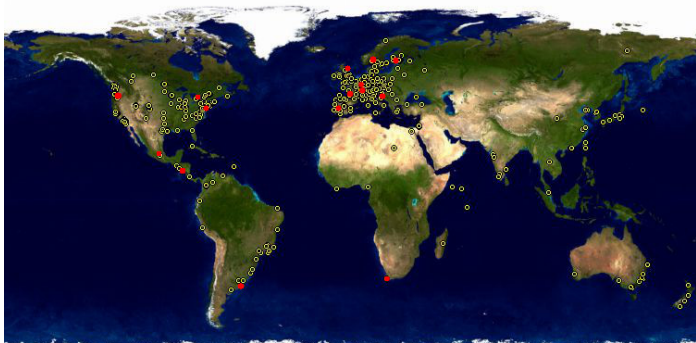
Inner workings and governance

- Debian Social Contract (1997)
    - 100% Free Software
    - Give back to the free software community
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- Debian Constitution (1998)
  - Subtle balance between democracy and do-ocracy
  - Very flat structure
  - Reputation follows work
  - No benevolent dictator, no oligarchy
  - No imposed decisions
  - Special bodies: project leader, technical committee, secretary

The Debian Project Leader (DPL)

- Elected (using Condorcet), 1-year term
- Roles & tasks:
    - Debian facilitator: ensure functional core teams, mediation
    - Push important projects forward
    - Official frontend: money, legal, trademark
    - Public frontend: contact point, interviews
    - *Debian garbage collector*
- Powers & means:
    - Not that many!
    - Volunteers $\rightsquigarrow$ cannot be forced to do work
    - Pinging, talking & getting people to talk, convincing, coordinating, pinging again, emails, emails, emails. . .

Challenges for the future

A suitable base for derivatives

- Closer work with derivatives
    - Infrastructure based on free software and reusible
    - Debian Derivatives Front Desk & Census

- No competition with other distribut{ions,ors}. From our point of view:
    - Number of users is not important
    - Success of derivatives is also ours
      (But we do like when link with Debian is not hidden)

Debian is about improving Free Software as a whole and must be a good player by collaborating with all entities.

Reinforce our role in the Cloud world

- Loss of control of our computing and data
- Challenge for Debian:
  How to **help preserve freedom and control**?
    - Packages for private IaaS/PaaS/SaaS?
      ⇝ Complex packages with custom config of services
    - Certification kits for public Clouds?
- Similar problem on smartphones and tablets:
    - Users giving up freedom, control and trust for comfort
    - How could we build a Debian-powered, trustworthy smartphone/tablet?

Improve the trustworthiness of Free Software

- Of what we use as a source:
  - Checks on upstream sources (checksums, signatures)

- Of what we produce:
  - Build all packages on Debian infrastructure
    binary-throw-away uploads
  - Reproducible builds
  - More automated tests (e.g. continuous integration, debci)
  - Advertise our modifications

A welcoming and diverse community

- Status of *non-uploading* Developer
    - Value non-technical contributions

- Code of conduct
    - `https://www.debian.org/code_of_conduct`

- Diversity Statement
    - `https://www.debian.org/intro/diversity`

- Participation in the Outreachy program
    - Free and Open Source Software internships for people from underrepresented groups

- Various events to gather community members from all over the world

How can *you* contribute to Debian?

- First steps:
    - Install Debian, upgrade to *testing*, report bugs
    - Subscribe to packages you care about on `http://tracker.debian.org`
    - Read debian-devel-announce@ and debian-news(-french)@
    - Join the local community: `http://france.debian.net`
- A good opportunity to develop devops skills
- Maintaining packages:
    - **apt-get install how-can-i-help**
      ↝ Unmaintained packages and tasks for new contributors
    - Teams and entry points: `http://wiki.debian.org/Teams`
    - **apt-get install packaging-tutorial** (in de, es, **fr**, *pt*, *ru*, *ja*)
- Other tasks: depends on the team ↝ contact them (or me)
- No special rights needed: you can start today!

Thanks! Questions?
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