

The Debian Project

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What is Debian?

- Short Explanation
 - Debian is a Community-Based Distribution of Free Software
- Long Explanation
 - Debian is a collaboration of thousands of volunteers working toward an universal operating system that runs on all hardware
 - Debian is worth an estimated \$13 billion of man-power investment (based on equivalent proprietary software costs)
 - Debian supports 11 different processor architectures (8 more than any other modern operating system)
 - This gives you the ability to run an entire modern operating system on interesting hardware like the NSLU2 and the Linksys WRT54
 - If for some reason the x86 processor falls out of favor, Debian is ready to support the successor
 - Alternate platform bugs help improve the quality of the software on all architectures

Why is Debian Different?

- Philosophy
- Community
- Transparency
- No Conflicting Commercial Motives
- Quantity of Packages
- Lots of Obscure/Not-Well-Known Packages
- Approximately 1,000 Developers
- Developer Motivation
- Package Quality
- Long Term "Stable" Releases
- Four Distributions to Support Four User Needs
- Strong Security Support

Debian Advantages

- With 1,000 developers and no shareholders to answer to, the distribution is very unlikely to disappear (consider what happened in the past with Corel Linux and Red Hat's support for desktop users)
- Contributions sent upstream
- Package quality assurance
- Eleven processor architectures supported (compare to two architectures for windows or Fedora, x86_32 and x86_64)
- Software on Debian needs to be bug-free on all of the architectures (greatly benefits the platform you run on)
- Bug tracking system
- Security

Debian Disadvantages

- 1,000 conflicting opinions
- Conflicts inside and outside Debian
 - Dunk Tank
 - Dunk Bank
 - Firefox/iceweasel situation
 - Binary firmware (pragmatists vs. idealists)
- Release Dates Often Slip Because of the Perfectionism of Fixing Every Bug
- Debian Project Leaders tend to be unable to accomplish anything
- It's hard to convince developers non-RC bugs need to be addressed
 - Many bugs go unaddressed for a long long time
 - Security concerns and release critical bugs are the highest priority, which leaves other lower priority issues unaddressed
 - Some DDs just don't keep up with their duties

Security

- Security is a big deal
- All security bugs are documented in the open (you can see exactly what security issues affect your distribution)
 - Security issues affecting Stable:
<http://idssi.enyo.de/tracker/status/release/stable>
 - Security issues affecting Testing:
<http://idssi.enyo.de/tracker/status/release/testing>
 - Security issues affecting Unstable:
<http://idssi.enyo.de/tracker/status/release/unstable>
- The kernel and firefox tend to be the packages with the most security issues (attackers have the most to gain)
- The only OS that does security better is OpenBSD
 - They do very thorough proactive security audits
 - As such, they have achieved "Only one remote hole in the default install, in more than 10 years!"
- There needs to be more proactive security on Linux in general

Philosophy

- Debian developers agree to the "Debian Social Contract" [2]
 - Free software development is the primary goal
 - Even so, your freedom of choice is also important – both free and non-free software is made available
 - User needs and bug reports are very important
- Free software guidelines are codified in the "Debian Free Software Guidelines" [3]
 - In order for developers to work toward the same goal the Debian definition of free software is codified
- Debian developers adhere to the "Debian Policy" [4]
 - A common set rules used to determine whether an issue is to be considered release critical

My Take on the Philosophy

- Debian enables its developers and users to stand on the shoulders of giants
 - In a similar vein to science and mathematics where new developments are only made possible because of the work of a great many others
- 100% free software is the goal, but has not yet been possible
 - Non-free documentation (fixed in Etch)
 - Binary firmware (intractable in Etch timeframe)
- However free software has always been dependent on non-free components from the beginning
 - GNU userland in the 80s ran on proprietary UNIX kernels only
 - Netscape
 - New controversy on binary video drivers and media codecs
 - This is a compromise, and it's not as bad as vocal free software purists claim
 - Besides, competing proprietary software forces free software to be more innovative

Debian Misconceptions

- Installing Debian is difficult (true in the past)
- Using Debian is difficult (its getting better...slowly)
- Debian is for experts
- Debian users/developers are threatening
 - It can happen (not too often)
 - People have different viewpoints (and some developers can't empathize)
 - Email is impersonal to begin with and misunderstandings happen
 - Don't take things to heart

Why Do Other Operating Systems Fall Short?

- Debian main is as free as you can get (binary firmware is currently the only non-free component in main)
- Other distributions and operating systems do not do a good job of integrating packages
 - Primarily because they do not have enough developers to address such a complex system
 - Debian-derivatives directly benefit from the work Debian does on this
- Rarely, if ever, do you find a buggy package in the stable release
- Stability is near perfect because *every* release critical bug is squashed before the stable release (even if it means delays)
- Even Ubuntu's LTS (Long Term Support) version is built from "unstable" Debian packages
- Security issues are dealt with swiftly in an open manner

The Four Debian Releases

- Stable - Debian Version 3.1 (currently codenamed Sarge)
 - Released 06 June 2005
- Testing - Debian Version 4.0 (currently codenamed Etch)
 - To be released soon (about 100 release critical bugs to go)
 - The next version of the Testing distribution will begin the day that Etch is released, and will be codenamed Lenny (Debian Version 4.1)
- Unstable - Unversioned (always codenamed Sid)
 - Packages spend a certain time in unstable to flesh out issues before moving to testing
- Experimental - Unversioned (no codename)
- All codenames are based on characters from the Toy Story movies

Release Transition Process

- Experimental-to-Unstable
 - The package maintainer believes that major packaging issues are worked out and the upload won't break unstable
- Unstable-to-Testing
 - Packages automatically migrate 10 days after all release critical bugs are fixed and no new release critical bugs are filed against the package (or anything it depends on)
- Testing-to-Stable
 - About 90 days before the planned stable release, the low-level toolchain such as gcc and other libraries are frozen, and only release critical bug fixes are made
 - Once the release date nears, and all remaining release critical bugs affecting testing are fixed, and the stable release is made

Which Release Should I Use?

- I want to run a server - Stable
- I want to develop software for Debian or other distributions - Unstable
- I want to bank, shop, and work with personal information on a computer that I can trust - Stable
- I want bleeding edge software (and have a fully working system) - Testing
- I want bleeding edge software (and don't mind some things being broken) - Unstable
- I want to see what new software is being worked on - Experimental
 - Note: If you install all of experimental, your system will be horribly borked
- You can mix-and-match releases via apt-pinning [5]

Where to Get Debian

- Download the Debian Installer ISO image for Stable from <http://www.debian.org/releases/sarge/debian-installer>
- Download the Debian Installer ISO image for Testing from <http://www.debian.org/devel/debian-installer>
- You will want to use the netinst version (a single CD that will get most of the applications you select during the installation)
- You will want to download the i386 version (unless you have a 64-bit amd or intel processor, amd64, or an older PowerPC Mac, powerpc)
- You can also try the new Debian Installer Loader (installation from windows) from <http://goodbye-microsoft.com>

How to Contribute

- Submit installation reports
 - <http://d-i.alioth.debian.org/manual/en.i386/ch05s03.html#submit-bug>
- File bug reports
 - Example
- Become a package maintainer
 - <http://www.debian.org/doc/maint-guide/>

References

- [1] http://people.debian.org/~srivasta/talks/why_debian/talk.html
- [2] http://www.debian.org/social_contract
- [3] http://www.debian.org/social_contract#guidelines
- [4] <http://www.debian.org/doc/debian-policy/>
- [5] <http://jaqqe.sbih.org/kplug/apt-pinning.html>
- Other Good Resources
 - <http://www.debian.org>
 - <http://planet.debian.org>
 - <http://www.debian.org/News/weekly/>
 - <http://lists.debian.org>
 - <http://wiki.debian.org>
 - <http://bugs.debian.org>

The End

- Questions / Comments