

Medical imaging using Debian

How Debian Med could enhance your medical imaging experience

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Debian

LSM, Geneva, 9. July 2012

1 Intro into Debian Med

- History
- Blends
- Graphing Debian Med

2 Medical imaging using Debian

- Imaging applications
- Developing applications for medical imaging
- Demonstration

3 Summary

History @ LSM 2001, Bordeaux



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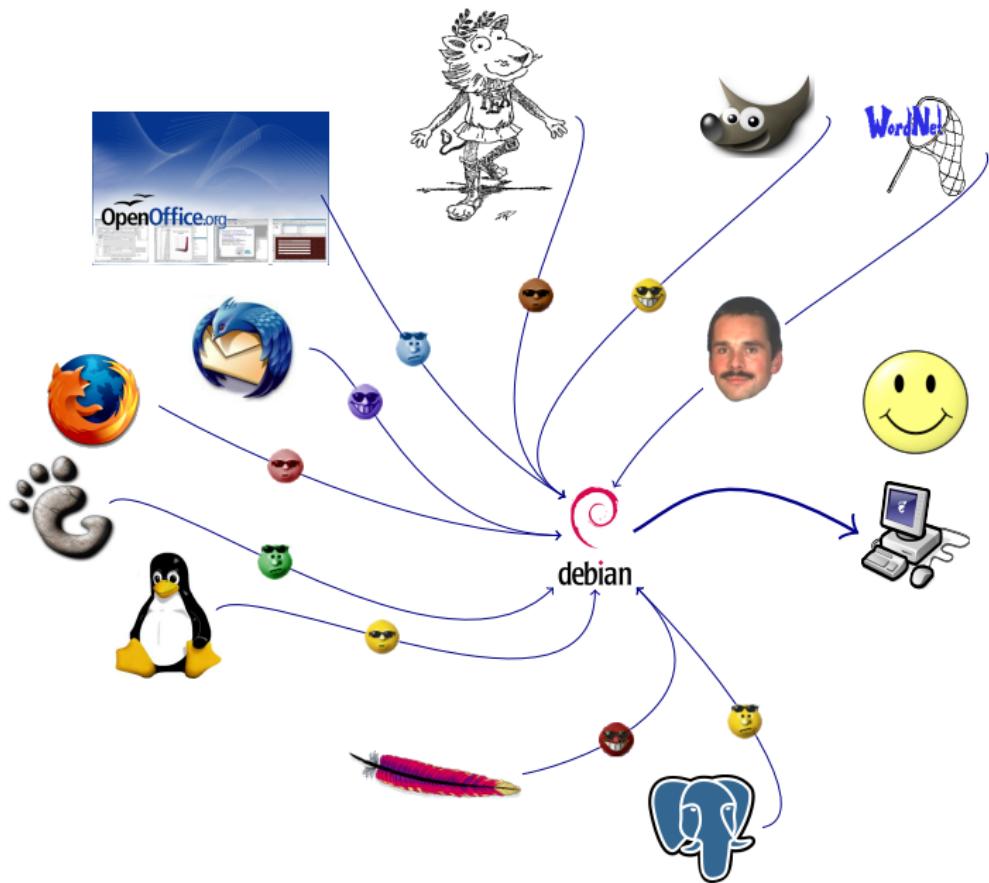


What is Debian Med?

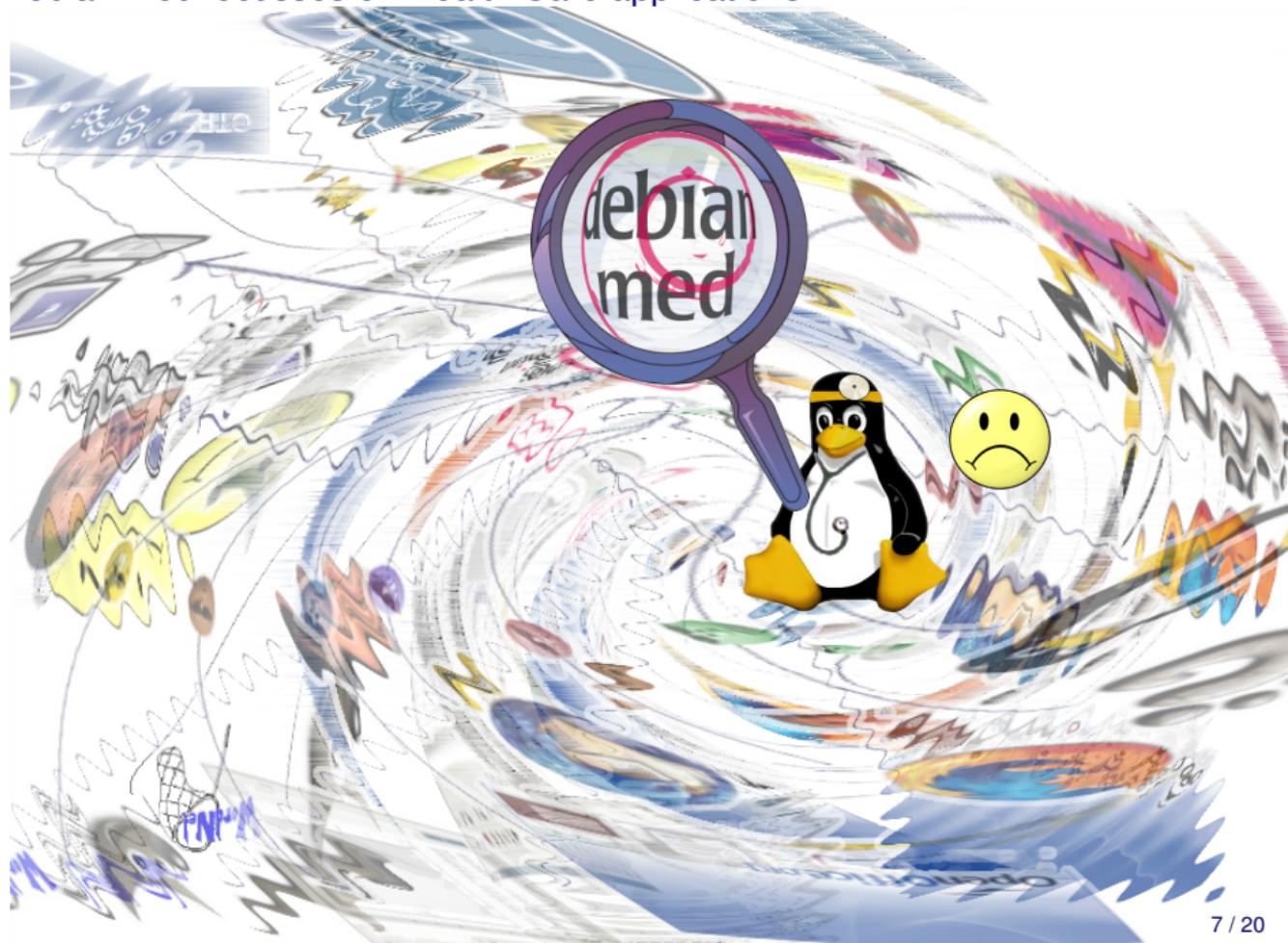
practice management system

Debian Pure Blend for medical care and microbiological
research

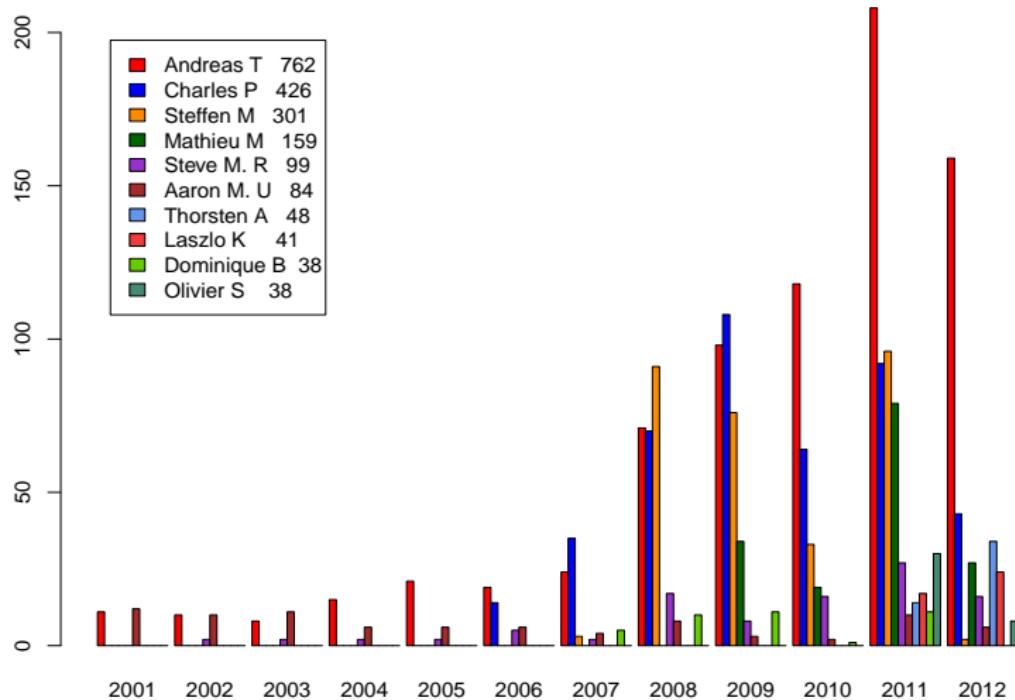
Debian



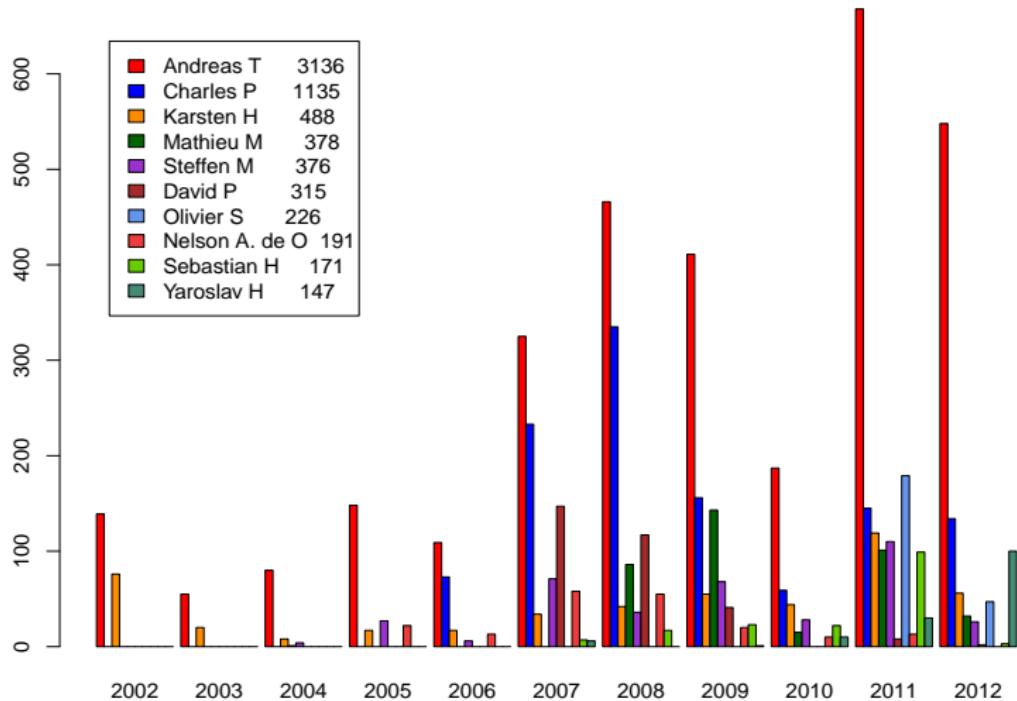
Debian Med focusses on Health Care applications



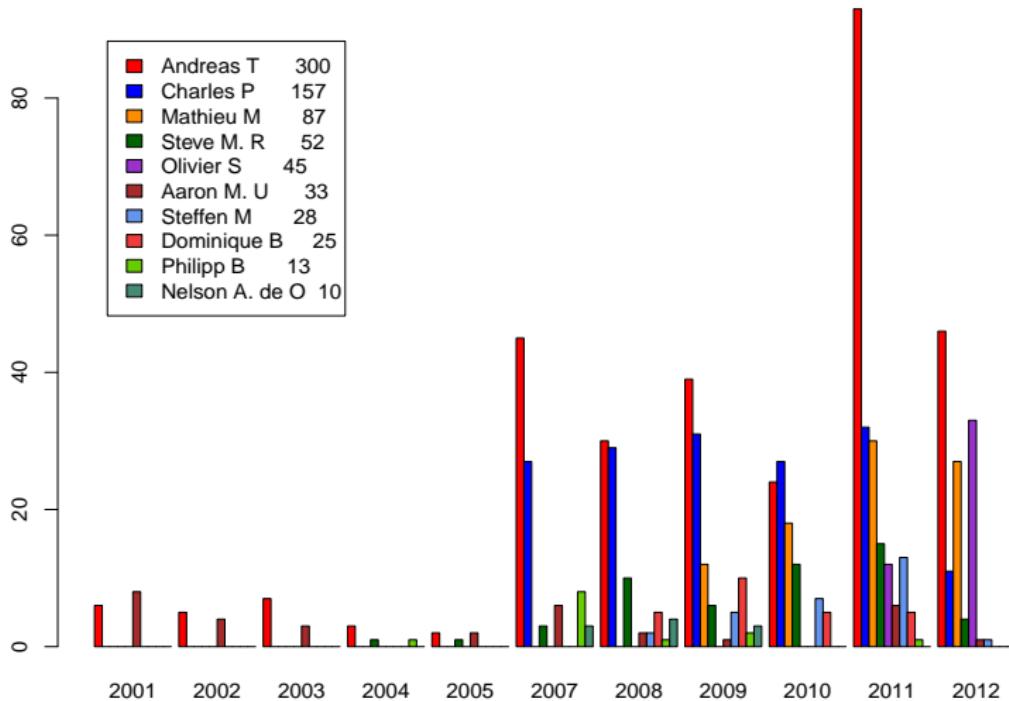
Top 10 Uploaders of Debian Med team



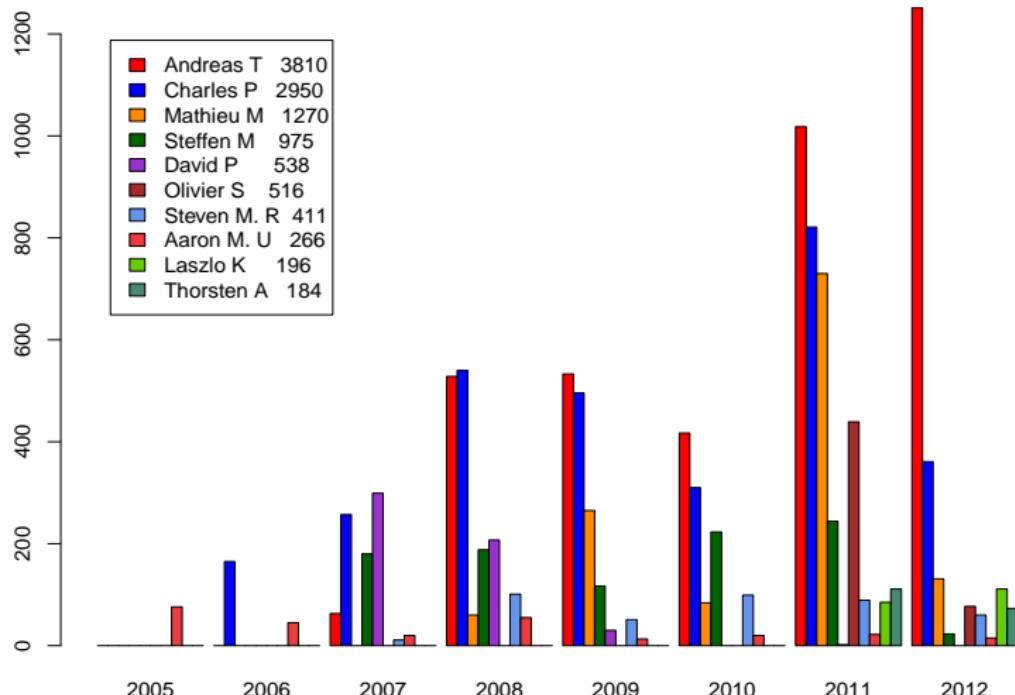
Top 10 People discussing on Debian Med mailing list



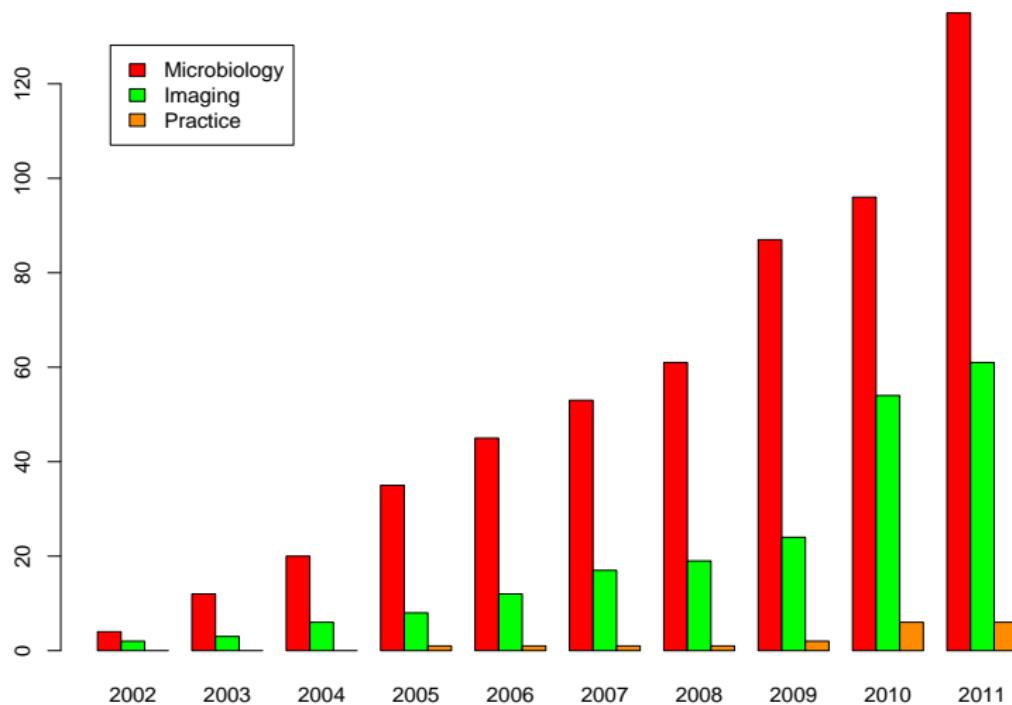
Top 10 bug hunters of Debian Med packages



Top 10 committers to Debian Med VCS



Number of Packages in selected tasks



Healthy growth

- After some stagnation in the beginning growth in all measures
- Warning: Also the amount of own work is growing (even if work is split on more shoulders)
- Trying to attract even more upstream developers because these are the experts (Mentoring of Month (MoM))
- Making Debian (Med) so attractive that users in medical care can not resist using it

Types of imaging applications

- Medical image viewers for general practitioners
ginkgocadx / aeskulap / amide / dicomscope
- Bioimaging, volume rendering
gofigure2, imagevis3d, itksnap, volview
- Neurology
ants, caret, fslview, mrtrix, voxbo
- Tomography
ctsim, odin, plastimatch
- Scanning Probe Microscopy
gwyddion
- Image analysis / Simulation
slicer, sofa-apps
- Image format conversion tools (DICOM, MINC, NIfTI)
biosig-tools, dicom3tools, medcon, mriconvert

Example: ginkgocadx

Medical Imaging Software and complete DICOM Viewer providing a complete DICOM viewer solution with advanced capabilities and support for extensions.

- Easy and customisable interface through profiles.
- Full featured DICOM image visualisation.
- Multiple modalities support (Neurological, Radiological, Dermatological, Ophthalmological, Ultrasound, Endoscopy, ...)
- Dicomization support from JPEG, PNG, GIF and TIFF.
- Full EMH integration support: HL7 standard and IHE compliant workflows.
- PACS Workstation (C-FIND, C-MOVE, C-STORE...)
- Extensible through custom extensions

Several development libraries

- General
 - cimg-dev, gmic, libcv-dev, libvtk5-dev*
- Biomedical data manipulation
 - libbiosig-dev, libgdf-dev*
- Image format creation and conversion
 - libmdc2-dev, libminc-dev, libnifti-dev*
- Specialised application development:
 - Image-guided surgery: *Libigstk4-dev*
 - Registration and segmentation:
 - libinsighttoolkit3-dev*
 - Solving EEG and MEG problems: *libopenmeeg-dev*
- Programming languages: Python, C, C++, C#

People behind medical imaging packages

- NeuroDebian team
- Experts dealing with medical imaging in daily practice
- General Debian developers (like me)

Goal

- Integrate all Free Software with relevance for medical imaging into Debian
- Contact to upstream developers of such applications
- Support for users of these applications
- Debian Med as missing link between users and upstream developers

This talk is available at

<http://people.debian.org/~tille/talks/>
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