

Debian-Science

A Custom Debian Distribution for sciences

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Gliederung

- 1 Current status
- 2 Better science support in CDD
- 3 Plan for Realisation
 - Science tools
 - Astronomy
 - Biology
 - Chemistry
 - Electronics
 - Geography
 - Mathematics
 - Physics
 - Others

Who is willing to work



Existing scientific CDDs

Debian-Med Strong focus on Microbiology

Debian-GIS Geographical Information Systems (especially GRASS)

DebiChem Chemistry

Why not more?

- Idea of CDD needs some time to penetrate
- Advantages are not widely known
- Nobody likes to do the grunt work

Debian-science mailing list

- Scientific user support
- Does not really focus on CDD and tools
- Slack discussion of scientific issues in Debian

Categorisation

- DebTags
- Debram

Debian-Science CDD

- CDD provides straightforward access to package pool
- No need for searching interesting packages
- Engagement for packaging more scientific Free Software
- Further addons like user menus, preconfiguration, . . .

Strategies for meta-package bundling

- Several packages covering different sciences
- How fine grained separating sciences?
- Separate meta-packages for development packages
- Separate meta-packages for documentation packages

Science specific meta-packages

- science-astronomie
- science-biology
- science-chemistry
- science-geography
- science-math
- science-physics
- ...

Common science utilities

- science-visualisation (-plotting)
- science-statistics (-data_processing)
- science-diagrams
- science-typesetting (-publishing)
- science-bibliography

- Collect dependencies at *Classification page*
- Decide which items are really supported by applications in Debian
- Sort out those where there is no specific Free Software

Science tools

visualization gnuplot, labplot, mayavi etc.,

data processing octave, R

diagrams dia, xfig

publishing \LaTeX , bibtex etc.,

Fields of science: Astronomy

Take over dependencies from *education-astronomy*

Recommends: gpredict, kstars, ssystem, starplot, stellarium, xplanet, xplanet-images

Suggests: celestia, gstar, spacechart, stars, sunclock, xephem, xtide, xtide-data

Missing in *education-astronomy*

Recommends: astronomical-almanac, lightspeed, openuniverse

Suggests: cl-geodesics

Fields of science: Biology

Take over dependencies from *med-bio*

Depends: adun.app, amap-align, biosquid, blast2, boxshade, dialign, fastdnaml, fastlink, garlic, gdpc, gff2aplot, gff2ps, ghemical, gromacs, hmmer, kalign, loki, melting, mipe, mummer, muscle, ncbi-epcr, ncbi-tools-bin, ncbi-tools-x11, njplot, perlprimer, poa, primer3, probcons, proda, pymol, r-cran-qt1, rasmol, readseq, seaview, sibs4, sigma-align, sim4, t-coffee, tigr-glimmer, tree-puzzle | tree-ppuzzle, treeviewx, wise

Recommends: textopo

Suggests: arb, bugsx, clustalw, clustalw-mpi, clustalx, molphy, mozilla-biofox, phylip, treetool

Fields of science: Biology (continued)

Take over dependencies from *med-bio-dev*

Depends: bioperl, libbio-ruby, libncbi6-dev, mcl,
python-biopython

Recommends: libvibrant6-dev

Suggests: biomode, r-base-core

Suggested *science-genomics??*

Fields of science: Chemistry

Take over dependencies from *education-chemistry*

Recommends: chemtool, easychem, gchempaint, gdis, gchemical, gperiodic, kalzium, pymol, viewmol, xdrawchem

Suggests: lum, mek, rasmol, xem, xpovchem

Tagged by *debram*:

Recommends: apbs, libmopac7-0, mpqc, psi3, gromacs | gromacs-lam | gromacs-mpich, easychem, gdpc, polyxmass

Suggests: gdpc-examples

Fields of science: Chemistry (continued)

science-chemistry-dev: libmopac7-dev, gromacs-dev

science-chemistry-doc: gromacs-doc, polyxmass-doc

Fields of science: Electronics

Take over dependencies from *education-electronics*

Recommends: gpsim, gpsim-logic, kicad, kicad-doc-de, kicad-doc-en, kicad-doc-es, kicad-doc-fr, ksimus, ksimus-boolean, ksimus-datarecorder, ksimus-floatingpoint, oregano, qucs

Suggests: eagle, electric, freehdl, gpsim-lded, gtkwave, pcb, vipec, xcircuit

Tagged by *debram*:

Recommends: atlc, cassbeam, drawtiming, nec, xnecview, geda, libgeda20, geda-gattrib, geda-gsymcheck, geda-symbols, geda-utils, gnuicap, transcalc, necpp, xsmc-calc, mpb, vipec

Suggests: atlc-examples, geda-examples

Fields of science: Electronics (continued)

`science-electronics-dev`: confluence, libgeda-dev, libnecpp-dev,
verilog, vbpp, vbs

`science-electronics-doc`: geda-doc, mpb-doc

Connection to *science-physics??*

Fields of science: Geography

Take over dependencies from *education-geography*

Suggests: grass

Missing in *education-geography*

Recommends: drawmap, gdal-bin, kgeography,
libgeo-coordinates-utm-perl,
libgeography-nationalgrid-perl,
libgeo-helmerttransform-perl, libgeo-metar-perl,
libgeo-postcode-perl, libgeos2c2a, libgeos-c1,
ogdi-bin, qgis, qgis-plugin-grass, postgis, proj,
thuban

Suggests: geotoad, gpsbabel, libmapnik1d, libogdi3.2,
libterralib1c2a, r-cran-mapdata, r-cran-maps

Fields of science: Geography (continued)

science-geography-dev: grass-dev, libgeos-dev, libmapnik-dev,
libogdi3.2-dev, libpostgis-java, libqgis0-dev,
libterralib1-dev, mapnik-plugins, mapnik-utils,
python-gdal, python-mapnik

science-geography-doc: grass-doc, libgeos-doc,
libterralib1-doc, proj-ps-doc

Fields of science: Mathematics

Suggested subgroups:

- science-math-arithmetic
- science-math-geometry
- science-math-numeric
- science-math-statistics
- science-math-misc

Fields of science: Mathematics (continued)

Take over dependencies from *education-mathematics*

Recommends: drgeo, geg, gnuplot, grace, kig, kmplot,
kpercentage, kseg, mathwar, maxima, octave,
pari-gp, xabacus, chaos, xeukleides, yacas

Suggests: abakus, drgenius, k3dsurf, kalgebra, kbruch, kgeo,
kregexpeditor, magicssquare, qliss3d, scilab, xarith

Tagged by *debram* or debtags:

Recommends: dome, freefem3d, geomview, gmp-ecm,
libjts-java, qhull-bin, tela

Fields of science: Physics

Suggested subgroups:

- science-physics-geo
- science-physics-fluid-dynamics
- science-physics-mechanical
- science-physics-particle
- ...

Fields of science: Physics (continued)

Take over dependencies from *education-physics*

Suggests: kturtle, lum, mek, xem, xoscope

Tagged by *debram* or debtags:

Recommends: tessa | tessa-mpi, gausssum, lightspeed,
tochnog

Suggests: libphtools2, libalps-heap1 | libalps-light1 |
libalps-mpi1 | libalps-pvm1

Fields of science: Physics (continued)

science-physics-dev: libphtools2-dev, libalps-heap1-dev |
libalps-light1-dev | libalps-mpi1-dev |
libalps-pvm1-dev
science-physics-doc: technog-doc

Other suggested sciences from the Wiki

- science-agricultural
- science-anthropology (same as archaeology?)
- science-architectural
- science-climatology
- science-economics
- science-hci
- science-linguistics
- science-pharmaceuticals (duty of Debian-Med)
- science-psychology (duty of Debian-Med)
- science-signal-processing
- science-sociology
- science-structural

This talk can be found at
<http://people.debian.org/~tille/talks/>
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