Application of Ultimate Debian Database in Debian Pure Blends

Harvesting information about packages for specific work fields

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Overview

Rename: CDD ➜ Debian Pure Blends

- Term Custom Debian Distributions was always misunderstood
- Main misunderstanding: CDD was regarded as “something else than Debian” even if people were told that it is a concept *inside* Debian explicitly
- Dropped the misleading name in favour of a name where you just have to read the docs

➜ **Debian Pure Blend (in short Blend)**: a subset of Debian that is configured to support a particular target group out-of-the-box.

Reminder: Basic goal of Blends

- Debian $>$ 22.000 packages
- Users interested in *subset*
- Groups of specialised users
- Easy installation and configuration
- While Debian stays general support specialists as well
- **No derivative** from Debian

Basic idea: Do not make a separate distribution but make Debian fit for special purpose instead

Upstream - Debian Developer - User

- Tie a solid network of Debian developers, upstream developers (“developing experts”) and users
- Rationale: Experts in this field need help in build system / packaging
- Upstream anticipates enhancements of build system and security audit
- Finally support upstream developers to become Debian maintainers
- Penetrating specific work fields with Linux makes it even more acceptable in general

Attracting people to use Blends

Developers

- Acceptance of new methods higher if the techniques provided are convincing enough
- Simple way to categorise packages (“tasks files”)
- Key documentation feature
- QA pages (Bugs of relevant packages, DEHS planned)

Users

- I18n-ed web pages displaying relevant packages
- Promoting software that builds a complete working environment
- Rise user interest by providing ready to install software in the context of their work field

Special applications

Building a set of metapackages

- Define set of dependency relations
- Verify availability of `Depends` / `Recommends`
- Packages unavailable in `main` will be turned into `Suggests`
- Create proper *`debian/control`* file to build valid metapackages
- Create *`tasksel`* control file *`<BLEND>-tasks.desc`*

Tasks and bugs pages

- Providing information about packages of interest
- Reading tasks files from Blends SVN containing
  - Dependency relations of packages inside Debian
  - Preliminary package information / WNPP
- Gathering all available information about the package dependencies defined in the tasks file

Intention of tasks pages

- Key entry point for users
- Quick overview about what's inside Debian regarding their specific work field
- First slight connection to DebTags (more to come)
- Turned out to be QA tool for developers as well

➜ Demo `http://blends.alioth.debian.org`

Weighting bugs

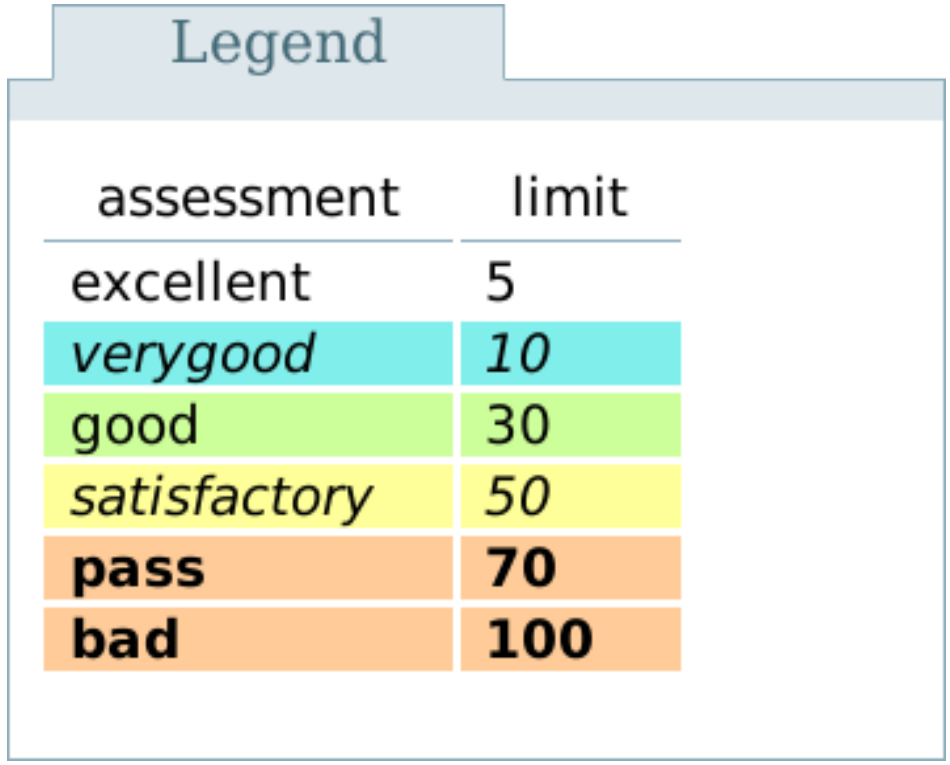
- Try to find a measure for bugs of dependant packages
- Currently not normalised to the number of dependencies but rather regarding absolute number of bugs
- Weighting numbers for the different severities ranging from 10 for the RC bugs until 0 for wishlist bugs

Example calculation

```
1 serious bug in dependent pkg:     1*10*3 = 30
2 important bugs in dependent pkg: 2* 5*3 = 30
1 important bug in suggested pkg:  1* 5*1 =  5
1 normal          ||               1* 3*3 =  9
1 minor           ||               1* 1*3 =  3

                                           ----
weighted sum =                             77
```

Colouring according bugs weight



- Metapackage can not be in status "good" if there is at least serious (or higher) bug in a dependant package
- Not "very good" if there is a RC bug in a suggested package
- Two RC bugs in suggested packages might qualify for "good" - if there are only a very view other bugs

Content of UDD

- PostgreSQL database containing all structured information about various aspects of Debian packages including:
  - Control file information for binary and source packages
  - Bugs from the Debian BTS (+ Ubuntu Launchpad)
  - Popularity contest
  - History of uploads and migrations to testing
  - Lintian
  - DebTags
  - Orphaned packages
  - Carnivore
  - Packages in new queue
  - Debian Description Translation Project (DDTP)
  - Links to *screenshots*
  - **DEHS** (since 2 days ☺)
- Information updated via cron jobs from different public sources
- Also Ubuntu package information available but not relevant in Blends context

Features

- Easy to write gatherers from new information sources
- DDTP, new queue and screenshots were actually injected to support more features of task pages of Blends
- Simple handling of package versions by `debversion` data type
- Just contains all relevant information about packages which are needed for Blends

Situation before switching to UDD

- Formerly `Packages.gz` of only one Debian release (unstable) and one arch (i386) was parsed to get a reasonable ratio of performance for the intended purpose
- Large effort to download all DDTP translations
- BTS SOAP took it's time

All information in one place

- Not only very quick access to packages information but also information about
  - all releases
  - all available versions
  - all architectures
  - information about packages in experimental
- DDTP was injected into UDD to speed up gathering description translations drastically
- BTS information with simple and quick `SELECT`

New features

UDD

- DDTP
- New queue
- screenshots.debian.net

Tasks pages

- Popcon results
- DebTags
- Vcs usage
- New queue
- screenshots.debian.net

More QA overviews

- Making use of new DEHS feature in UDD
- Lintian report overview
- Adding Ubuntu bugs

Make *blends-dev* use UDD

- Build metapackages based on UDD information
- Thus enabling `architecture=any` metapackages
- Include tasks file information into UDD

Try to establish technique

- Further enhancements (DEHS, lintian)
- Rewrite `blends-dev` to use UDD
- Make even more projects like DebiChem and Debian-GIS actively using the framework
- Try to bring back external projects to Debian by providing attractive tools

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