

Tools inside Blends framework

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Overview

- 1 Debian Pure Blends
 - Short introduction
 - Blends features
- 2 Used techniques
 - Metapackages
 - Web sentinel
 - Team analysis
 - Misc UDD tools
 - Outreach
- 3 Future
 - Planned features for Blends

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[illegible]

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Med-bio task of Debian Med

The diagram is a mind map centered on a circle labeled "debian med". Several lines radiate from this central node to various bioinformatics tools and resources:

- BLAST®**: A blue box with the BLAST logo.
- emboss**: The word "emboss" in a stylized blue font.
- CLUSTAL**: A yellow box with the CLUSTAL logo.
- CIRCO**: A red circle with the word "CIRCO" inside.
- Primer3**: A black box with the Primer3 logo and a DNA double helix.
- CD-HIT**: A black box with the CD-HIT logo and the text "Accelerated Clustering in High Throughput Sequences".
- Bioconductor**: A logo with the text "Bioconductor" and "OPEN SOURCE SOFTWARE".

There are also several small avatars of people connected to the central node, and a laptop icon on the right side.



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

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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)

Users

- 118n-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

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Metapackages and their online representation

- Define set of dependency relations
- Turn these into installable code (metapackages)
- Demonstrate what we have online (web sentinel)
- Create teams of interested people around a topic

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Building metapackages using *blends-dev*

- Define set of dependency relations in *tasks* files
- *blends-dev* does the following automatically:
 - 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*

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Using *blends-dev*

```
debian/rules
#!/usr/bin/make -f
include /usr/share/blends-dev/rules
```

```
debian/control.stub
```

- *debian/control* will be autogenerated
- Only information for source package is in stub
- See */usr/share/doc/blends-dev/examples/debian*

```
tasks/*
```

See */usr/share/doc/blends-dev/examples/tasks* or other Blends for working examples

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Example tasks file

Control file

```
$ cp -a /usr/share/doc/blends-dev/examples/tasks .
$ cat tasks/README
$ edit tasks/task1
Format: https://blends.debian.org/blends/1.1
Task: task name
Description: short description
             long description as in any debian/control file
Depends: dependends1, dependends2, ...
Recommends: recommends1, recommends2, ...
Suggests: suggests1, suggests2, ... (optional)
$ cp tasks/task1 tasks/<meta-package-name>
```

Create a tasks file for every task

Working example: *apt-get source debian-med*

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Calculating packaging files

```
make dist
```

- Check existence of package mentioned as Depends / Recommends in testing (== final target of the metapackages)
- If package is not in testing it will end up as Suggests inside metapackage.
- **-all* metapackage / task
- *tasksel*

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New format

- In format 1.0 **each** Depends was turned into Recommends
- If first line is
Format: <https://blends.debian.org/blends/1.1>
Depends remain
- Format 1.1 is available since *blends-dev* (≥ 0.7)

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Taskset files

- Build process includes package `BLEND-tasks`
- Includes taskset description files
- Hopefully presented in installer process of buster
- Installs metapackage `BLEND-all`

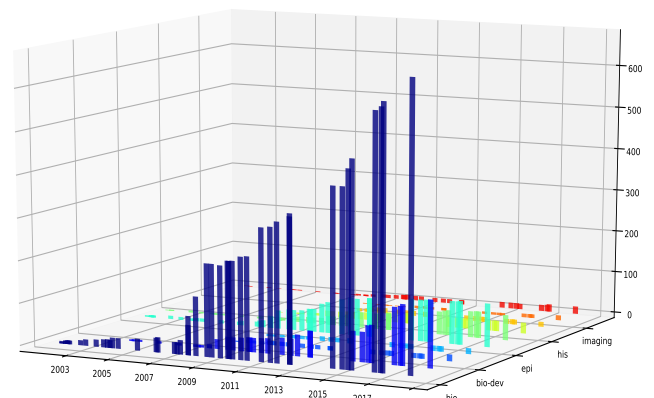
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Tasks statistics

- *blends-dev* (≥ 0.7) contains method to add json data file with package statistics
- Useful to graph tasks development
- Helps maintaining changelog

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Number of Packages in selected tasks



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Tasks, bugs and external health pages

- Providing information about packages in tasks
- Information gathered from UDD
- Some more user oriented, others developer oriented

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Tasks pages - show off what we have

- Key entry point for users
- Quick overview about what's inside Debian regarding specific work field
- Might contain todo list (prospective packages)
- Turned out to be QA tool for developers as well

→ Demo <http://blends.debian.org/med/tasks>

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Bugs pages - direct people to work to do

- Colouring according bugs weight
- Attract competent people to bugs by sorting these into workfields
- General attempt to make bugs in Blends relevant packages more visible

→ Demo <http://blends.debian.org/med/bugs>

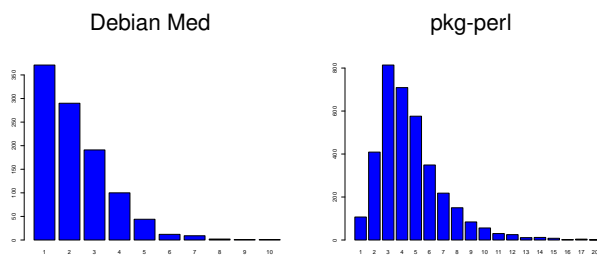
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Who is in the team and what period of activity

- How to estimate the number of active contributors?
- List of team members in Salsa gives no answer who is really active
 - Who is active on the mailing lists
 - Who uploads packages and fixes bugs
 - Who commits to Git
 - How many contributors per package

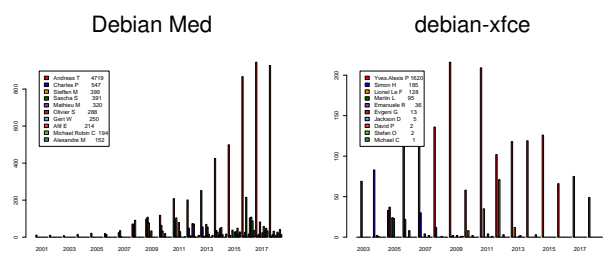
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Contributions per package



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Top 10 uploaders



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Features of UDD initially added for Blends usage

- DDTP
- New queue
- screenshots.debian.net
- Blends prospective packages
- Upstream metadata
- Registry data and EDAM ontology
- All Blends tasks information is in UDD

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So far undocumented simple SQL scripts

- Search UDD for packages of team that are not in any task
- Sort packages of task according to popcon usage and add info whether there is an autopkgtest
- Sort all packages of Blends according to their latest upload
- List of upgradable packages

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MoM

Month	Student	Package	Uploaded?	Visible in the team after 1 year
02.2012	Luis Ibanez	fis-gtm	yes	handed over to Amul Shah
03.2012	Scott Christley	libswarm	no	no
06.2012	Eric Maeker	libquazip	yes	yes
11.2012	Tomás Di Domenico	python-csb	yes	yes
02.2013	Sukhbir Singh	hunspell-en-med	yes	remained in Debian (not in Debian Med)
12.2013	Lennart C. Karssen	probabel	yes	yes
01.2014	Jorge Sebastião Soares	snp-sites	yes	no
03.2014	Stephen Smith	phyutility	yes	no
06.2014	Ian Wallace	openemr	no	no
09.2014	Corentin Desfarges	camp	yes	handed over to Flavien Bridault
02.2015	Paul Novotny	opensurgsim	yes	yes
03.2015	Yves Martelli	dwvexplorer	no	no
04.2015	Malihe Asemani	manila	-	no
05.2015	Alif Elghraoui	kmer-tools	yes	yes (even mentoring himself)
06.2015	Alba Crespi	r-cran-lastmatch	yes	yes
07.2015	Julien Lamy	dcmk++	yes	yes
08.2015	Malihe Asemani	king-probe	yes	no
12.2015	Martin Uecker	bart	yes	yes
10.2016	Kerim Ölger	emperor	no	no
11.2016	Çağrı ULAŞ	deepnano	yes	no
05.2017	Nada Ghanem	qupath	no	no
08.2017	Cedric Lood	bandage		
10.2017	Nadiya Sitdykova	galb-core	yes	

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Debian Med has attracted one developer per year

According to a questionnaire in Wiki

- Debian Med has 38 DDs+DMs (not all active any more)
- 19 DDs *because* Debian Med exists;
4 DDs before Debian Med started
- 10 out of the 19 above extended their activity to other fields in Debian
- 14 out of the 19 above are active in Debian Med

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MoM Conclusions

- Time spent into mentoring is worth the effort
- No student for each month so the workload is bearable
- Students have just read recent documents which I did ten years ago → I can learn new stuff from them
- Major advantage: training upstream to pool their knowledge about the code with ours about packaging is **very efficient** for the hard packages
- About 50% of students had strong connection to upstream and requests for upstream changes went very smoothly

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Sponsoring of Blends

<https://wiki.debian.org/DebianPureBlends/SoB>

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Enhancing the web sentinel

- Enhancing the Web layout
- Better web layout
- The web layout should be enhanced
- Some more info like Lintian report overview, may be Ubuntu bugs ...
- ... in a better web layout
- Volunteers???

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Enhancing blends-dev code

- Provide more officially usable code to maintain Blends more easily

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Link to extensive Blends doc

<https://blends.debian.org/blends/>

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