Migration to testing and visualization

or how do I beat the freeze deadline...

Cyril Brulebois <cyril@debamax.com>

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Outline

1. Context
2. Migration to testing
3. Visualization
4. Perspectives

Context

Show of hands

Who maintains a package?

Who keeps an eye on the migration status (unstable to testing)?

Who already had packages blocked by some other packages?

Who had troubles getting the whole picture?

Some very quick words (1/2)

DEBAMAX company:

- Free Software consulting
- Debian-focussed

Services:

- systems administration
- packaging
- development, integration
- Debian Installer support

→ `https://debamax.com/`

Some very quick words (2/2)

Weapon of choice: Puppet

- centralized deployment, maintenance
- automation
- problem: monitoring?

Solutions:

- full-blown solutions: Foreman, Puppet Enterprise
- home-brew scripts: parse YAML reports, send XMPP notices
- PuppetBoard: replaces Puppet Dashboard; web interface to PuppetDB

New problem: PuppetDB is not in testing!

Migration to testing

Why is a package not migrating to testing?

Many reasons:

- not old enough
- new RC bugs
- unsatisfiable (build-)dependencies
- piuparts or CI issues
- kept out on purpose (block)
- kept out by the Debian Installer release manager (block-udeb)
- all of the above

What do I do then?

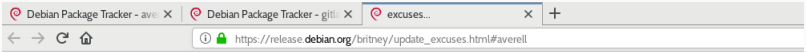
Resources to understand why:

- Package Tracker → `https://tracker.debian.org/pkg/$SOURCE`
- Excuses page → `https://release.debian.org/britney/update_excuses.html`

... and follow the links.

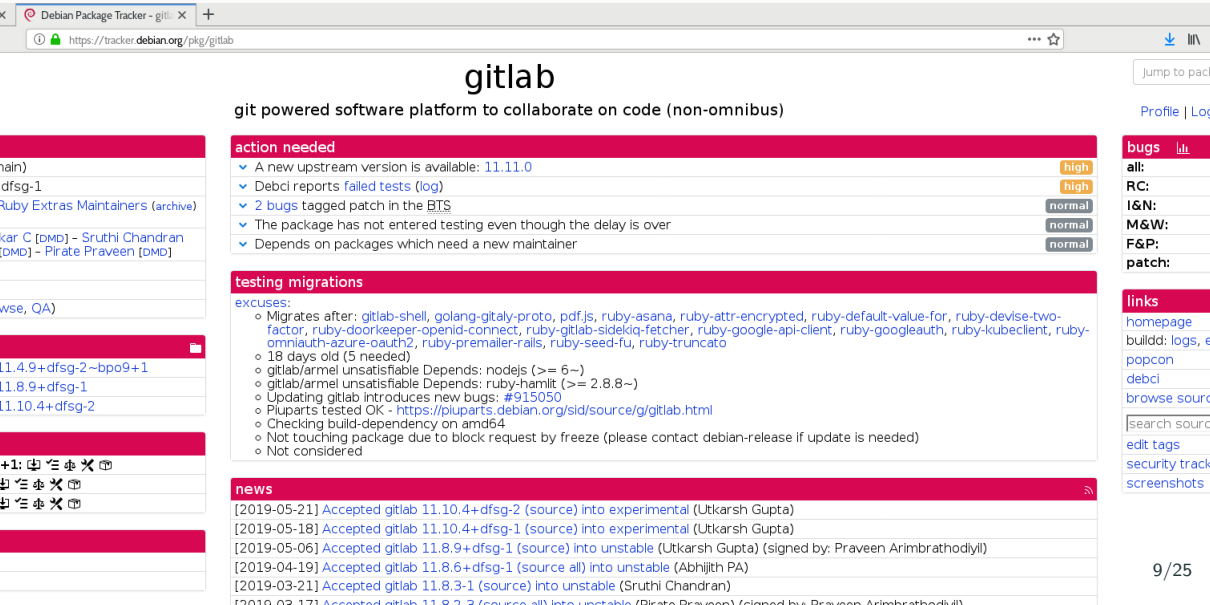
Example 1: easy (Tracker)

Example 1: easy (Excuses)



- averell (- to 1.2.5-1.1)
  - Migration status: BLOCKED: Needs an approval (either due to a freeze, the source suite or a manual hint)
  - Maintainer: Jean Parpaillon
  - Too young, only 1 of 5 days old
  - Piuparts tested OK - https://piuparts.debian.org/sid/source/a/averell.html
  - Checking build-dependency on amd64
  - Not touching package due to block request by freeze (please contact debian-release if update is needed)
  - Build-Depends(-Arch): averell erlang-cowboy
  - Depends: averell erlang-cowboy
- clonalframeml (1.11-2 to 1.11-3)
  - Migration status: Waiting for test results, another package or too young (no action required now - check later)
  - Maintainer: Debian Med Packaging Team
  - Too young, only 1 of 5 days old
  - Piuparts tested OK - https://piuparts.debian.org/sid/source/c/clonalframeml.html
  - Ignoring block request by freeze, due to unblock request by nthykier
- glimpse (4.18.7-3 to 4.18.7-4)
  - Migration status: BLOCKED: Needs an approval (either due to a freeze, the source suite or a manual hint)
  - Maintainer: Alexander Zangerl
  - Too young, only 1 of 5 days old
  - Piuparts tested OK - https://piuparts.debian.org/sid/source/g/glimpse.html
  - Not touching package due to block request by freeze (please contact debian-release if update is needed)
- jruby-joni (2.1.26-1 to 2.1.28-1)
  - Migration status: BLOCKED: Needs an approval (either due to a freeze, the source suite or a manual hint)
  - Maintainer: Debian Java Maintainers
  - Too young, only 1 of 5 days old
  - Piuparts tested OK - https://piuparts.debian.org/sid/source/j/jruby-joni.html
  - Checking build-dependency on amd64
  - Checking build-dependency (indep) on amd64
  - Not touching package due to block request by freeze (please contact debian-release if update is needed)
  - Build-Depends-Indep: jruby-joni jcodings
  - Depends: jruby-joni jcodings
- libgovirt (0.3.4-3 to 0.3.4-3.1)
  - Migration status: Waiting for test results, another package or too young (no action required now - check later)
  - Maintainer: Debian GNOME Maintainers

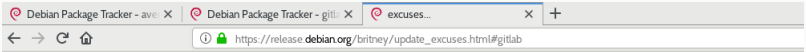
Example 2: less easy (Tracker)



Example 2: less easy (Excuses)

Debian Package Tracker - ave | Debian Package Tracker - gitl | excuses...

https://release.debian.org/britney/update_excuses.html#gitlab



- gitlab (- to 11.8.9+dfsg-1)
  - Migration status: BLOCKED: Rejected/introduces a regression
  - Maintainer: Debian Ruby Extras Maintainers
  - 18 days old (needed 5 days)
  - gitlab/armel unsatisfiable Depends: nodejs (>= 6~)
  - gitlab/armel unsatisfiable Depends: ruby-hamlit (>= 2.8.8~)
  - Updating gitlab introduces new bugs: #915050
  - Piuparts tested OK - https://piuparts.debian.org/sid/source/g/gitlab.html
  - Checking build-dependency on amd64
  - Not touching package due to block request by freeze (please contact debian-release if update is needed)
  - Depends: gitlab gitlab-shell
  - Depends: gitlab golang-gitaly-proto
  - Depends: gitlab pdf.js
  - Depends: gitlab ruby-asana
  - Depends: gitlab ruby-attr-encrypted
  - Depends: gitlab ruby-default-value-for
  - Depends: gitlab ruby-devise-two-factor
  - Depends: gitlab ruby-doorkeeper-openid-connect
  - Depends: gitlab ruby-gitlab-sidekiq-fetcher
  - Depends: gitlab ruby-google-api-client
  - Depends: gitlab ruby-googleauth
  - Depends: gitlab ruby-kubeclient
  - Depends: gitlab ruby-omniauth-azure-oauth2
  - Depends: gitlab ruby-premailer-rails
  - Depends: gitlab ruby-seed-fu
  - Depends: gitlab ruby-truncato
- golang-github-konsorten-go-windows-terminal-sequences (- to 1.0.2-1)
  - Migration status: BLOCKED: Needs an approval (either due to a freeze, the source suite or a manual hint)
  - Maintainer: Debian Go Packaging Team
  - 18 days old (needed 2 days)
  - Piuparts tested OK - https://piuparts.debian.org/sid/source/g/golang-github-konsorten-go-windows-terminal-sequences.html
  - Required age reduced by 3 days because of autopkgtest
  - Checking build-dependency on amd64
  - Not touching package due to block request by freeze (please contact debian-release if update is needed)

Scaling

But what if there are too many packages involved?

Visualization

Solutions

Solution 1: pen and paper

Solution 2: manual Graphviz

Solution 3: automated Graphviz

Solution: manual Graphviz

Simple algorithm:

- start from your favorite package
- add links to all involved packages
- iterate on each such package, recursively
- gotcha: keep track of processed packages!

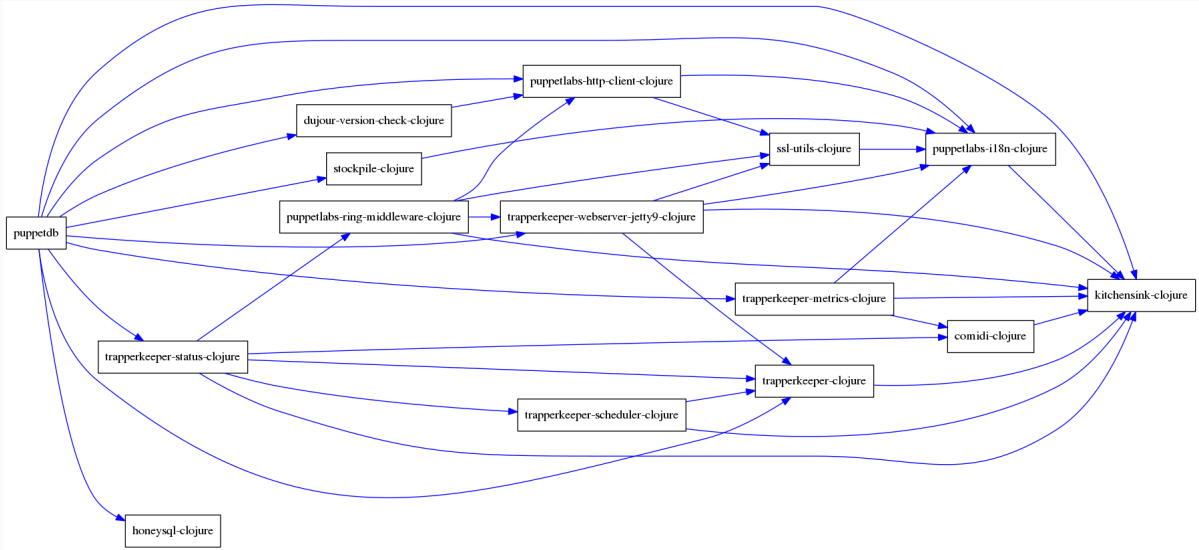
Manual Graphviz: step 1

```
digraph {
  rankdir=LR;
  node[shape=box];

  "puppetdb" -> "dujour-version-check-clojure"           [color=blue];
  "puppetdb" -> "honeysql-clojure"                       [color=blue];
  "puppetdb" -> "kitchensink-clojure"                    [color=blue];
  "puppetdb" -> "puppetlabs-http-client-clojure"         [color=blue];
  "puppetdb" -> "puppetlabs-i18n-clojure"                [color=blue];
  "puppetdb" -> "stockpile-clojure"                      [color=blue];
  "puppetdb" -> "trapperkeeper-clojure"                  [color=blue];
  "puppetdb" -> "trapperkeeper-metrics-clojure"          [color=blue];
  "puppetdb" -> "trapperkeeper-status-clojure"           [color=blue];
  "puppetdb" -> "trapperkeeper-webserver-jetty9-clojure" [color=blue];
  …
```

Manual Graphviz: step 2

```
…

"dujour-version-check-clojure"   -> "puppetlabs-http-client-clojure" [color=blue];

"puppetlabs-http-client-clojure" -> "puppetlabs-i18n-clojure"        [color=blue];
"puppetlabs-http-client-clojure" -> "ssl-utils-clojure"              [color=blue];

"ssl-utils-clojure"              -> "puppetlabs-i18n-clojure"        [color=blue];

"puppetlabs-i18n-clojure"        -> "kitchensink-clojure"            [color=blue];

"stockpile-clojure"              -> "puppetlabs-i18n-clojure"        [color=blue];

"trapperkeeper-clojure"          -> "kitchensink-clojure"            [color=blue];

…
```

Manual Graphviz: step `$TOO_MANY` (36 transitions total)



Great overview, job done?

Next steps:

- check RC / FTBFS bugs for involved packages, and fix or downgrade
- common bugs: test failures for Clojure packages
- after a few days: packages fixed and RC bugs closed/downgraded

What now? Let's do the same dance again?!

Solution 3: automated Graphviz

Despite the urgency (beat the freeze): let's script it!

Preliminary work (years ago):

- based on parsing `update_excuses.html`
- parsing HTML
- parsing non-stable strings

→ time to switch to machine-readable things!

Machine-readable excuses (1/3)

→ http://release.debian.org/britney/excuses.yaml (20190201000001.yaml)

```
- dependencies:
    migrate-after:
    - dujour-version-check-clojure
    - honeysql-clojure
    - kitchensink-clojure
    - puppetlabs-http-client-clojure
    - puppetlabs-i18n-clojure
    - stockpile-clojure
    - trapperkeeper-clojure
    - trapperkeeper-metrics-clojure
    - trapperkeeper-status-clojure
    - trapperkeeper-webserver-jetty9-clojure
  excuses:
  - 'Updating puppetdb introduces new bugs: <a href="https://bugs.debian.org/878193">#878193</a>'
  - Piuparts tested OK - <a href="https://piuparts.debian.org/sid/source/p/puppetdb.html">https://p
  - Checking build-dependency on amd64
  is-candidate: false
  …
```

Machine-readable excuses (2/3)

```
…
item-name: puppetdb
maintainer: Puppet Package Maintainers
migration-policy-verdict: REJECTED_PERMANENTLY
new-version: 4.4.1-2
old-version: '-'
policy_info:
  age:
    age-requirement: 5
    current-age: 113
    verdict: PASS
  autopkgtest:
    puppetdb/4.4.1-2:
      amd64:
      - ALWAYSFAIL
      - https://ci.debian.net/data/autopkgtest/testing/amd64/p/puppetdb/1126285/log.gz
      - https://ci.debian.net/packages/p/puppetdb/testing/amd64
    verdict: PASS
…
```

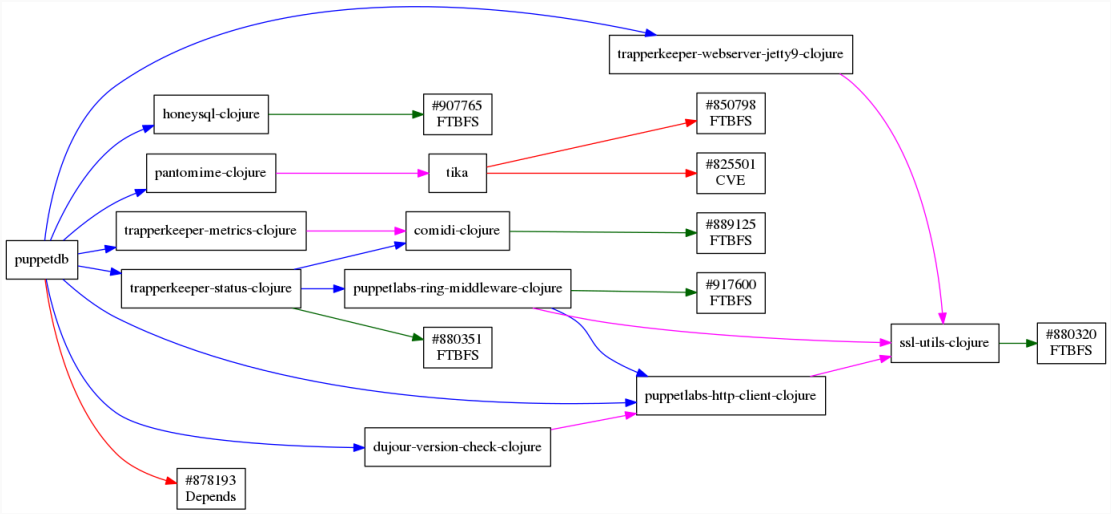
Machine-readable excuses (3/3)

```
…
  block:
    verdict: PASS
  build-depends:
    check-build-depends-on-arch: amd64
    verdict: PASS
  built-using:
    verdict: PASS
  piuparts:
    piuparts-test-url: https://piuparts.debian.org/sid/source/p/puppetdb.html
    test-results: pass
    verdict: PASS
  rc-bugs:
    shared-bugs: []
    unique-source-bugs:
    - '878193'
    unique-target-bugs: []
    verdict: REJECTED_PERMANENTLY
source: puppetdb
```

Examples as of 2019-05-25

See summary page and specific graphs in a browser nearby

Richer graph



Perspectives

Next steps

Open questions/problems:

- put more data on the graphs
  - RC bugs
  - aging
  - hints by release managers
- clickable/zoomable/expendable format
- accessibility

Infrastructure:

- integration: `https://release.debian.org/` & `https://tracker.debian.org/`
- source/binary mapping automation: `https://snapshot.debian.org/`

But what happened to `puppetdb`?

It's in!

```
$ rmadison -s testing,unstable puppetdb
puppetdb   | 6.2.0-3       | testing    | source, all
puppetdb   | 6.2.0-3       | unstable   | source, all
```

My beloved supporting cast:

- Santiago Vila: connecting dots with FTBFSes
- Elana Hashman, Clojure team: happy to get bugfixes
- Emmanuel Bourg, security team: `tika`
- Apollon Oikonomopoulos, release team: cherry on the cake, `puppetdb`!
  - 2019-02-08: upload
  - 2019-02-12: soft freeze
  - 2019-02-**11**: migration!

Thanks for your attention!

More Debian-related write-ups and news:

- `https://debamax.com/blog/`
- Twitter : `@debamax` et `@CyrilBrulebois`

Questions are welcome!