aptly - Debian repository management tool

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Repeatability!
Change!
Environment
Repeatable Environment
Environment Change
Repetable Environment Change
Environment is a set of packages
Environment Versions

testing → development → staging → production → testing
Environment Control

apt-get

apt-sources

apt-preferences

Debian repo

backports

3rd-party repo
Wrong Version!
apt pinning should help!
No...
Our Goal

• Fixed set of packages (*repeatability*)

• Update packet versions in controlled way (*change*)
aptly

* isn’t a replacement for apt, dpkg!
Core Concepts

- **mirror**
  - remote repository mirror

- **snapshot**
  - immutable set of packages

- **published repo**
  - snapshot published as package repo
aptly mirror

$ aptly mirror create wheezy-main http://mirror.yandex.ru/debian/ wheezy main
Downloading http://mirror.yandex.ru/debian/dists/wheezy/Release...

Mirror [mirror1]: http://mirror.yandex.ru/debian/ wheezy successfully added.
You can run 'aptly mirror update mirror1' to download repository contents.
aptly mirror

$ aptly mirror update wheezy-main
Downloading http://mirror.yandex.ru/debian/dists/wheezy/
Release...
Downloading & parsing package files...
Downloading http://mirror.yandex.ru/debian/dists/wheezy/
main/binary-i386/Packages.bz2...
Downloading http://mirror.yandex.ru/debian/dists/wheezy/
main/binary-amd64/Packages.bz2...
Saving packages to database...
Building download queue...
Download queue: 0 items, 0.00 GiB size

Mirror `wheezy-main` has been successfully updated.
mirror

update
aptly snapshot

$ aptly snapshot create deb-main-250114 from mirror wheezy-main

Snapshot deb-main-250114 successfully created. You can run 'aptly publish snapshot deb-main-250114' to publish snapshot as Debian repository.
aptly snapshot pull

$ aptly snapshot pull deb-main-250114 percona-250114 deb-w-percona 'percona-server-server (>=5.5)'

...
aptly snapshot pull aptly snapshot pull aptly snapshot pull deb-main-250114 back-250114 deb-w-xorg rsyslog

... [-] rsyslog-5.8.11-3_amd64 removed
[+] rsyslog-7.4.4-1~bpo70+1_amd64 added
[-] libestr0-0.1.1-2_amd64 removed
[+] libestr0-0.1.9-1~bpo70+1_amd64 added
[+] init-systemhelpers-1.11~bpo70.1_all added
[-] rsyslog-5.8.11-3_i386 removed
[+] rsyslog-7.4.4-1~bpo70+1_i386 added
[-] libestr0-0.1.1-2_i386 removed
[+] libestr0-0.1.9-1~bpo70+1_i386 added
<table>
<thead>
<tr>
<th>Arch</th>
<th>Package</th>
<th>Version in A</th>
<th>Version in B</th>
</tr>
</thead>
<tbody>
<tr>
<td>amd64</td>
<td>libmysqlclient18</td>
<td>5.5.31+dfsg-0+wheezy1</td>
<td>5.5.35-rel33.0-611.wheezy</td>
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<tr>
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<td>-</td>
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aptly snapshot verify

$ aptly snapshot verify deb-w-percona

Missing dependencies (13):
  fenix [amd64]
  fenix-plugins-system [amd64]
  ia32-libs-i386 [amd64]
  ia32-libs-gtk-i386 [amd64]
  vidcontrol [amd64]
  kbdcontrol [amd64]
  libmysqlclient18 (= 5.5.31+dfsg-0+wheezy1) [amd64]
  scsh-0.6 (>= 0.6.6) [amd64]
  scsh-0.6 [amd64]
  mozart (>= 1.4.0) [amd64]
  libmysqlclient18 (= 5.5.31+dfsg-0+wheezy1) [i386]
  vidcontrol [i386]
  kbdcontrol [i386]
$ aptly snapshot merge deb-w-percona-250114 deb-main-250114 percona-250114

Snapshot deb-w-percona-250114 successfully created. You can run 'aptly publish snapshot deb-w-percona-250114' to publish snapshot as Debian repository.
aptly publish snapshot

$ aptly publish snapshot -distribution=wheezy
percona-250114
Signing file '/Users/smira/.aptly/public/dists/wheezy/Release' with gpg, please enter your passphrase when prompted:

...

Snapshot percona-250114 has been successfully published. Please setup your webserver to serve directory '/Users/smira/.aptly/public' with autoindexing. Now you can add following line to apt sources:
  deb http://your-server/ wheezy main
Don't forget to add your GPG key to apt with apt-key.
Plans

• Searching
• Filtering
• Managing your own package repositories
• Support for source packages and translations
• Verifying remote repositories
What doesn’t work yet

• deletion
• bash-completion
• flat-repositories
• download progress
Competition

• mirror: ftpsync, reprepro, debmirror, apt-mirror, apt-cache...

• archive generation: dak, mini-dak, reprepro, ...
Internals

- Written in Go
- Embedded database - LevelDB
- Package files are stored only once
Internals

- `~/.aptly.conf` - configuration file
- `~/.aptly/` - default work directory
  - `db/` - database
  - `pool/` - package file storage
  - `public/` - published repositories
Links

• http://www.aptly.info/
• https://github.com/smira/aptly/
• @smira
• me@smira.ru
• Skype: smirnov.andrey