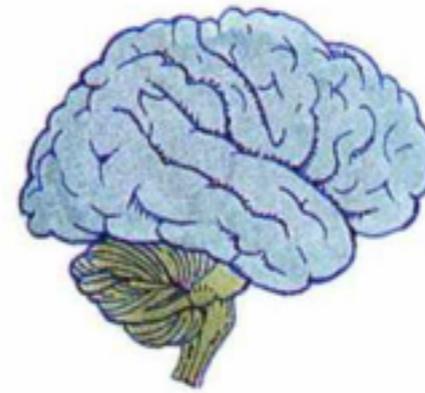
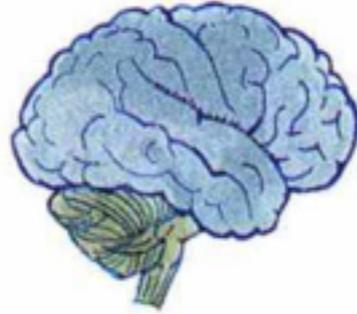
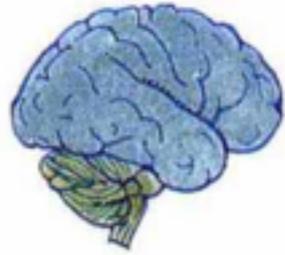


# aptly - Debian repository management tool

Andrey Smirnov,  
DevOps Meetup Moscow Jan'14



Repeatability!



Australopithecus robustus

Homo habilis

Homo erectus

Homo sapiens neanderthalensis

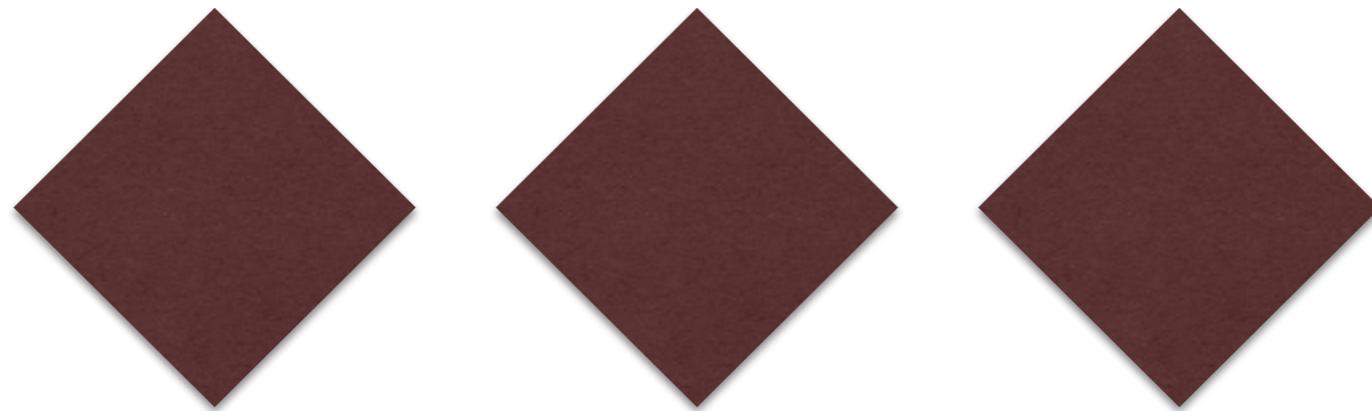
Homo sapiens sapiens

# Change!

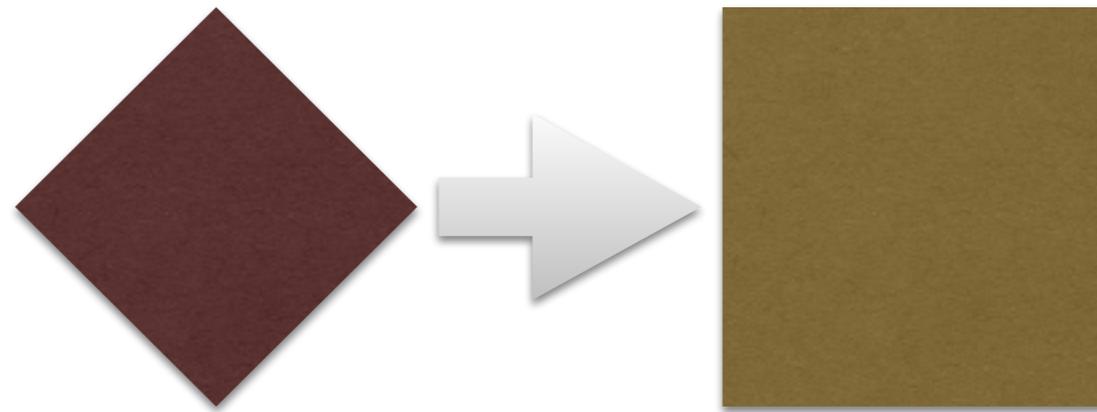
# Environment



# Repeatable Environment



# Environment Change



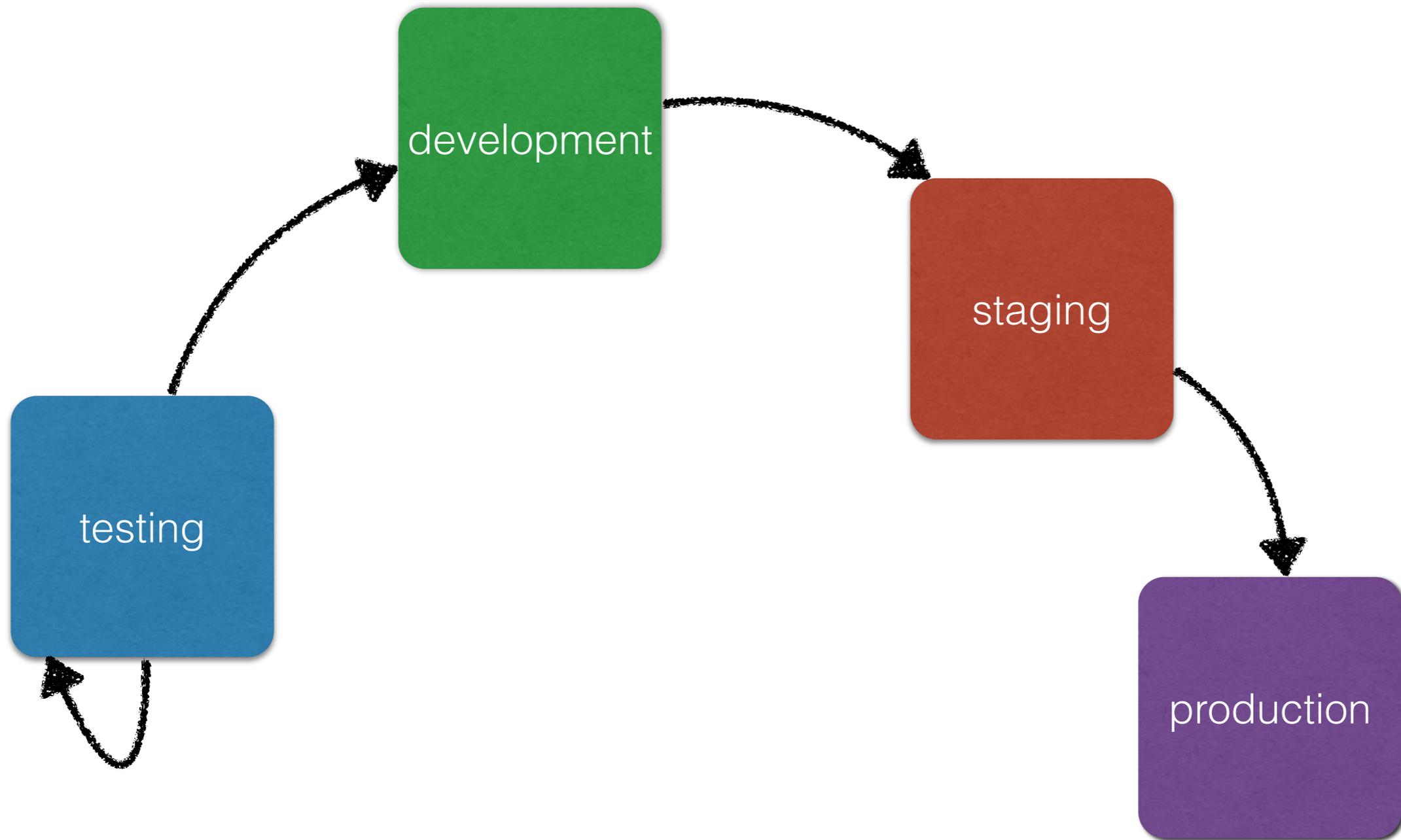


Repetable  
Environment Change

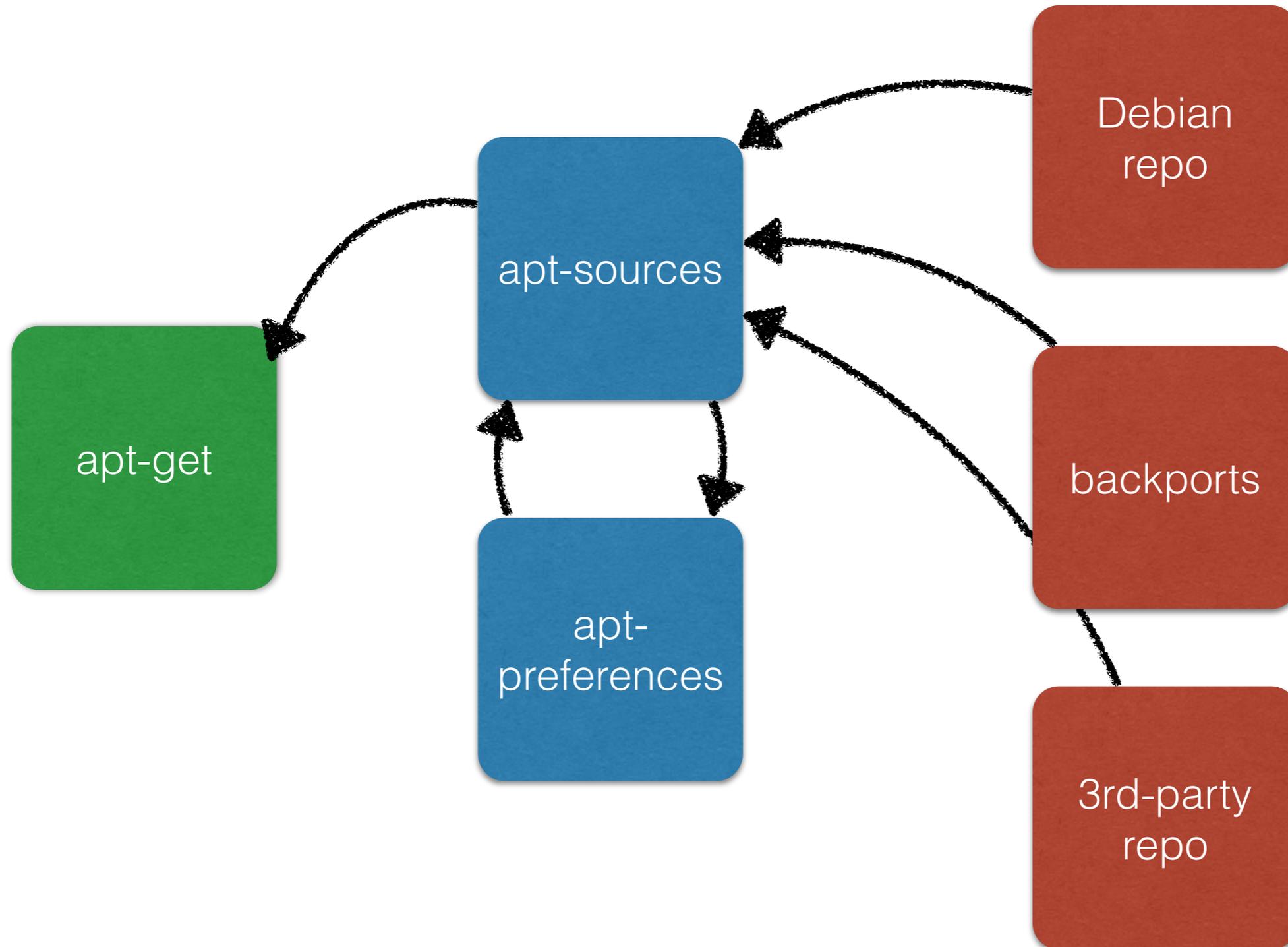


Environment is  
a set of packages

# Environment Versions



# Environment Control



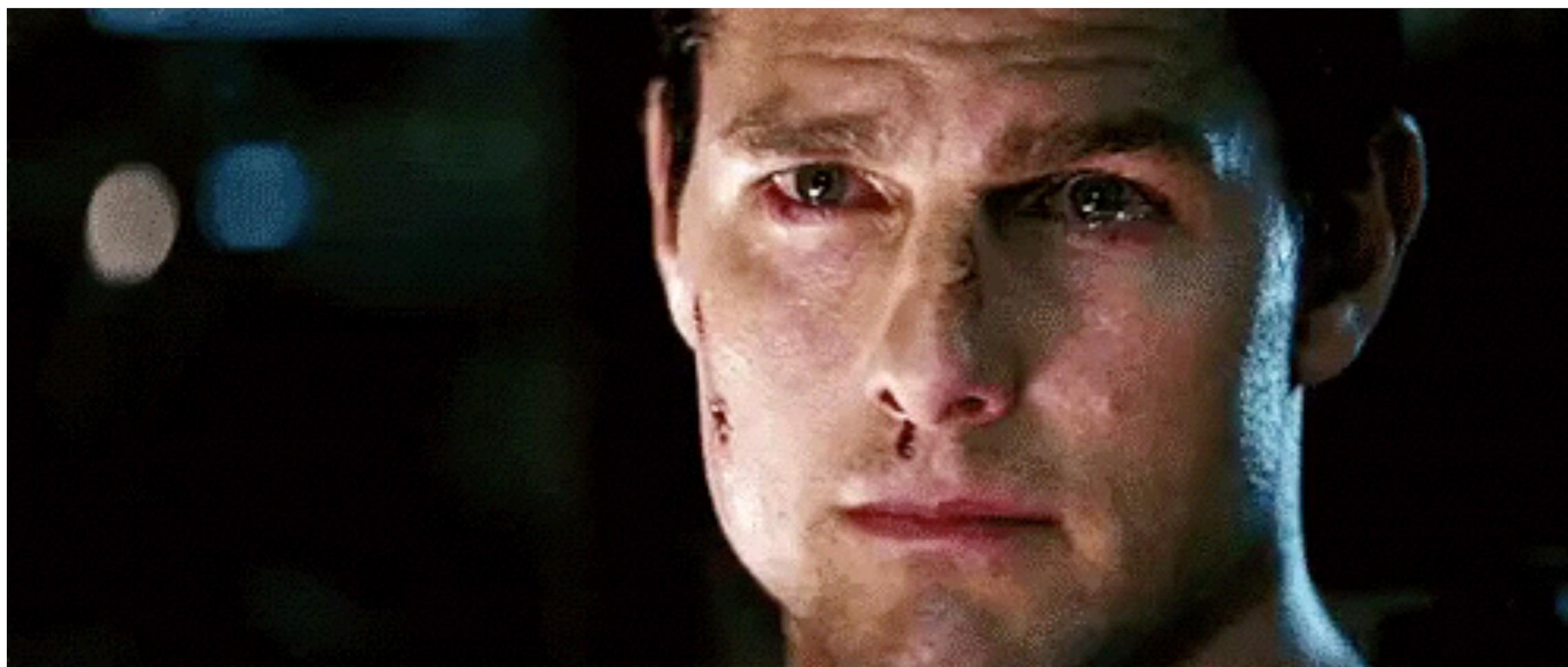
# Wrong Version!



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

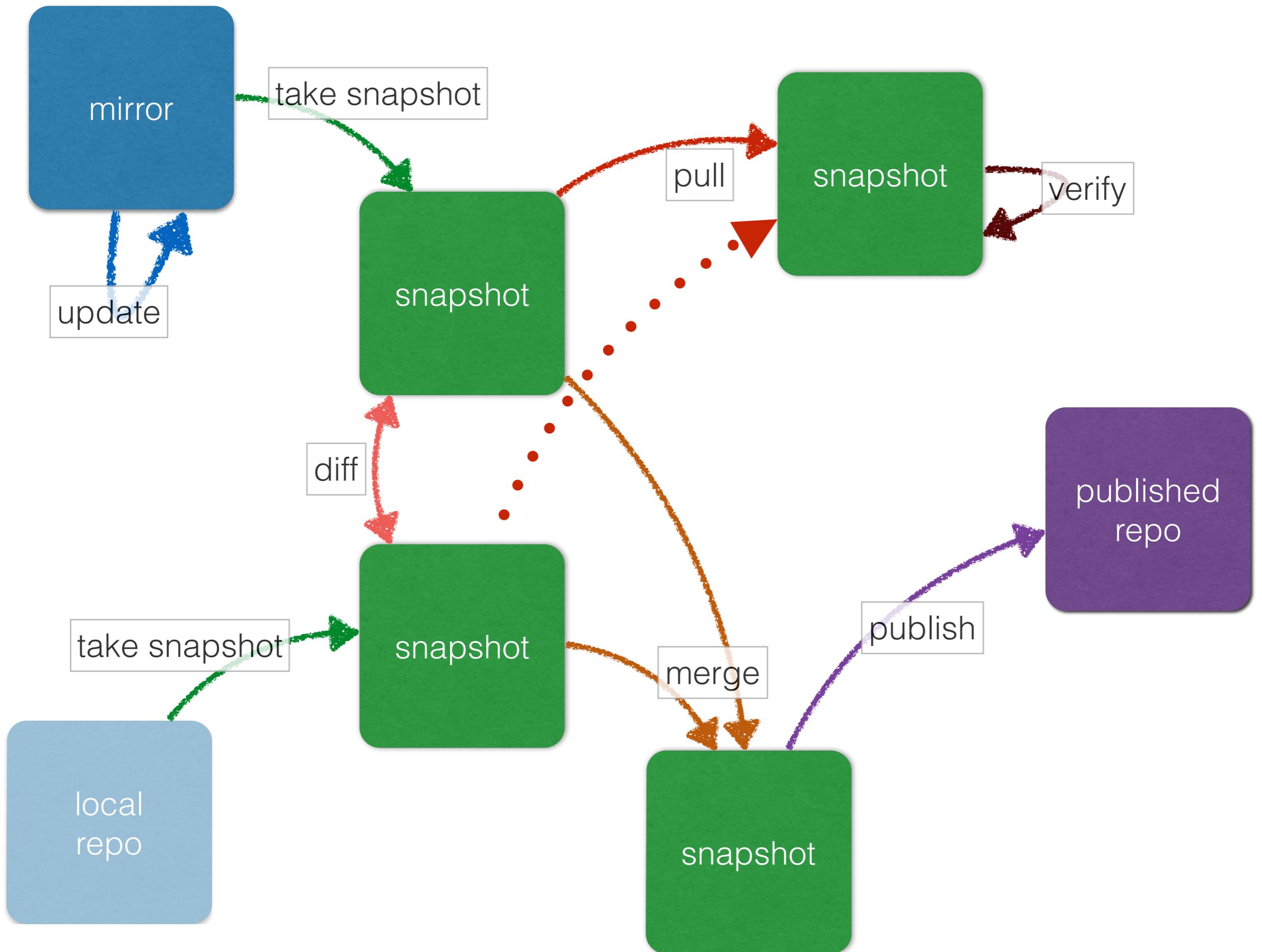
– remote repository mirror

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.
```



update

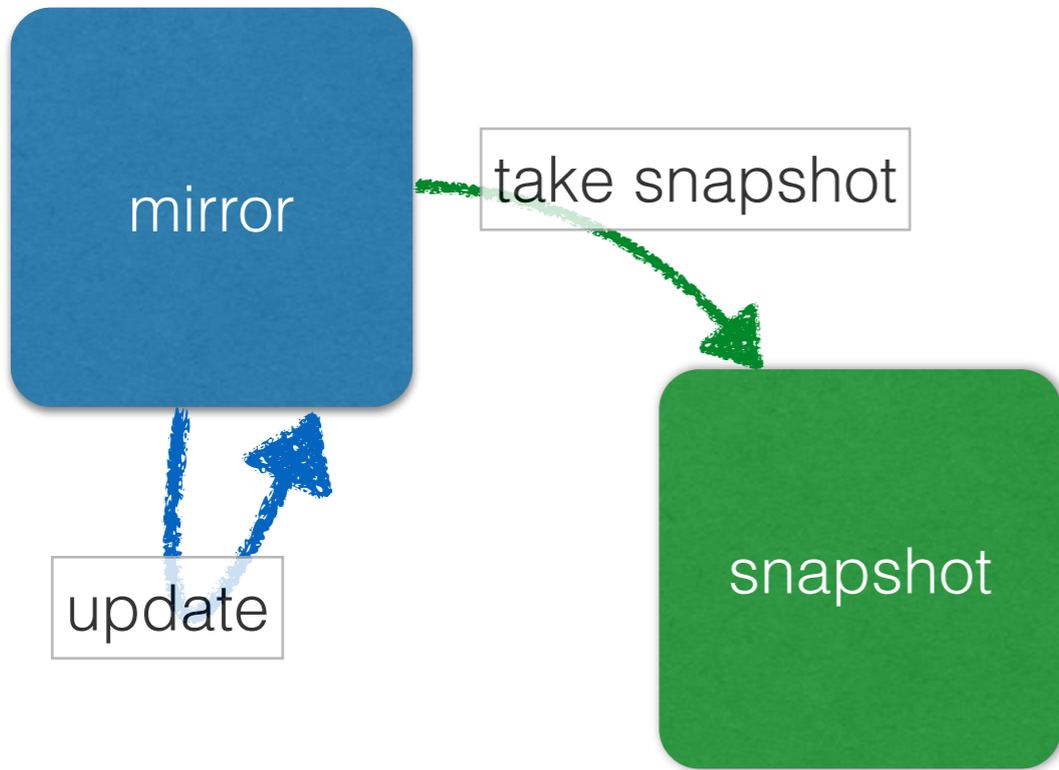


# aptly snapshot

```
$ 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)'
```

```
...
```

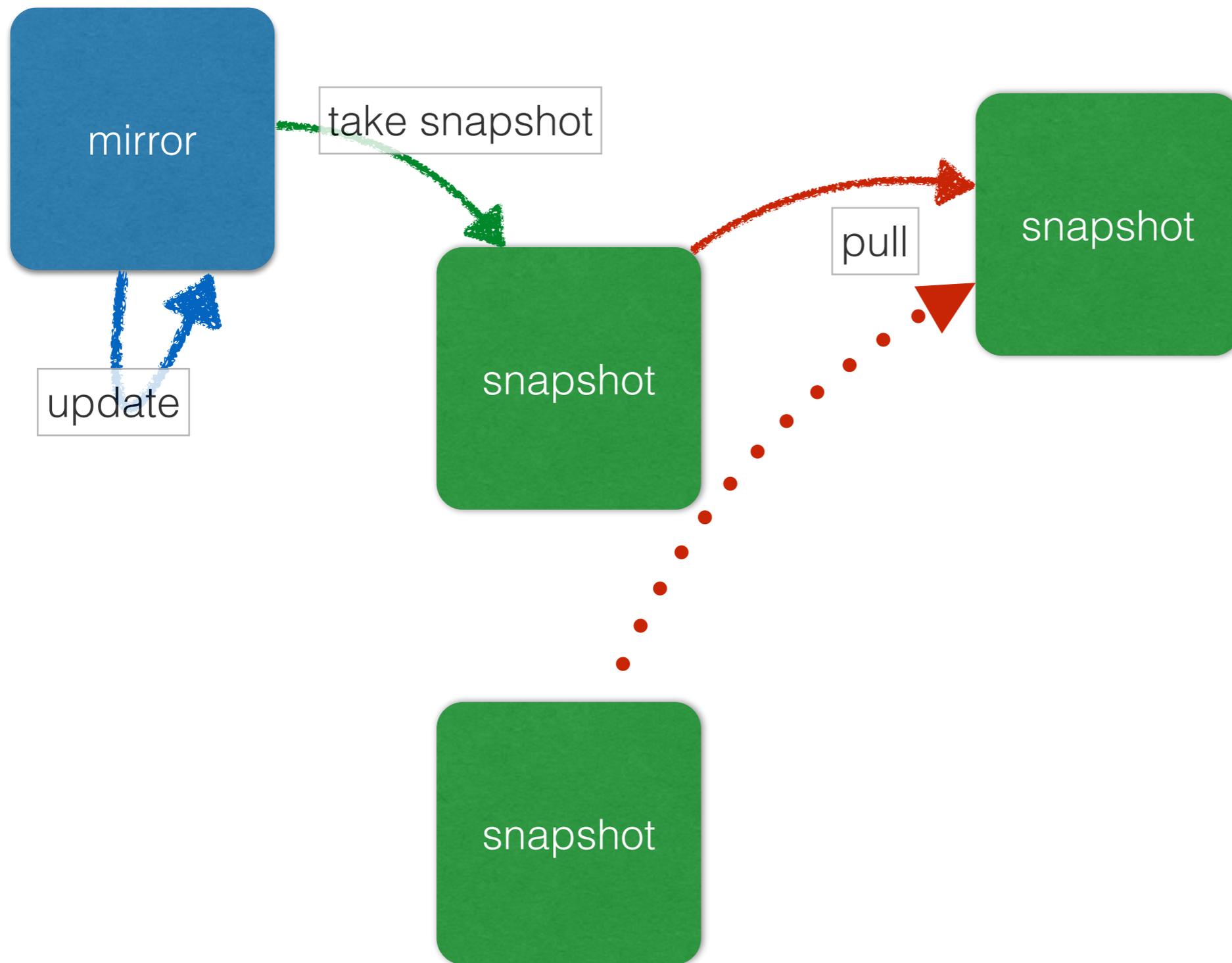
```
[+] percona-server-server-5.5.35-rel33.0-611.wheezy_amd64 added  
[+] percona-server-server-5.5-5.5.35-rel33.0-611.wheezy_amd64 added  
[+] percona-server-client-5.5-5.5.35-rel33.0-611.wheezy_amd64 added  
[+] percona-server-common-5.5-5.5.35-rel33.0-611.wheezy_amd64 added  
[-] libmysqlclient18-5.5.31+dfsg-0+wheezy1_amd64 removed  
[+] libmysqlclient18-5.5.35-rel33.0-611.wheezy_amd64 added  
[+] percona-server-server-5.5.35-rel33.0-611.wheezy_i386 added  
[+] percona-server-server-5.5-5.5.35-rel33.0-611.wheezy_i386 added  
[+] percona-server-client-5.5-5.5.35-rel33.0-611.wheezy_i386 added  
[+] percona-server-common-5.5-5.5.35-rel33.0-611.wheezy_i386 added  
[-] libmysqlclient18-5.5.31+dfsg-0+wheezy1_i386 removed  
[+] libmysqlclient18-5.5.35-rel33.0-611.wheezy_i386 added
```

# aptly snapshot pull

```
$ aptly snapshot pull aptly snapshot pull deb-main-250114  
back-250114 deb-w-xorg rsyslog
```

```
...
```

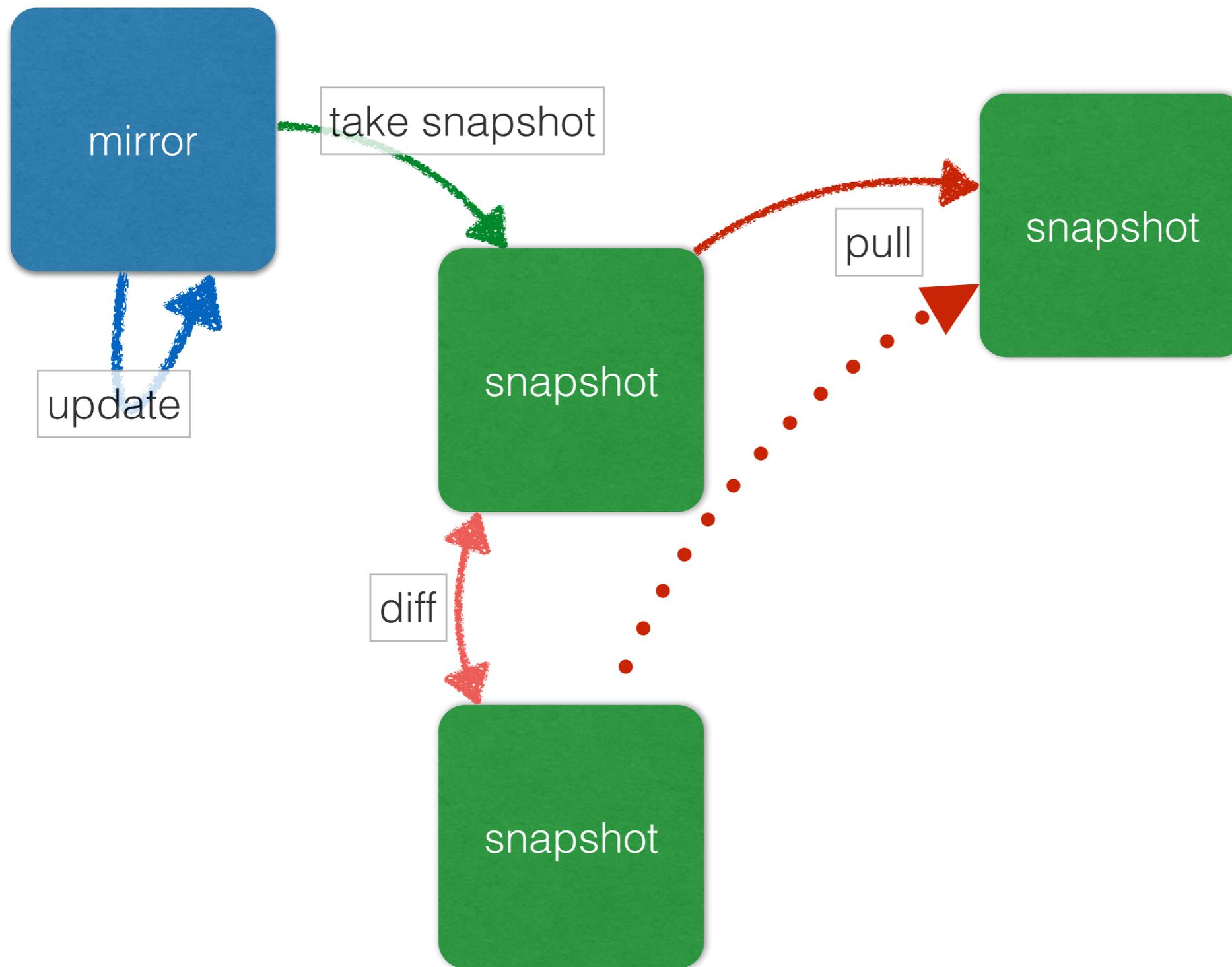
```
[-] rsyslog-5.8.11-3_amd64 removed  
[+] rsyslog-7.4.4-1~bpo70+1_amd64 added  
[-] libestr0-0.1.1-2_amd64 removed  
[+] libestr0-0.1.9-1~bpo70+1_amd64 added  
[+] init-system-helpers-1.11~bpo70.1_all added  
[-] rsyslog-5.8.11-3_i386 removed  
[+] rsyslog-7.4.4-1~bpo70+1_i386 added  
[-] libestr0-0.1.1-2_i386 removed  
[+] libestr0-0.1.9-1~bpo70+1_i386 added
```



# aptly snapshot diff

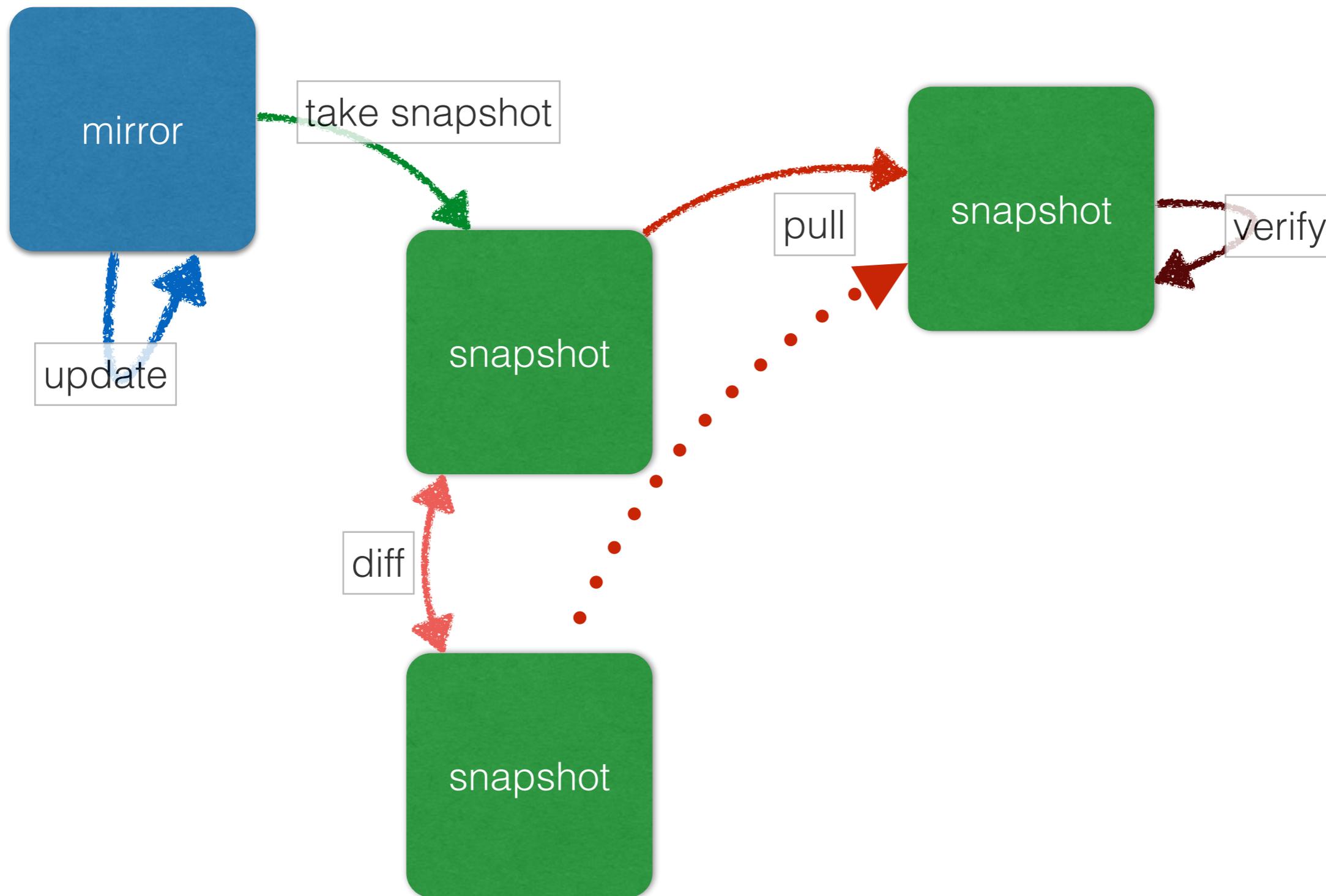
```
$ aptly snapshot diff deb-main-250114 deb-w-percona
```

Arch	Package	Version in A	Version in B
! amd64	libmysqlclient18	5.5.31+dfsg-0+wheezy1	5.5.35-rel33.0-611.wheezy
+ amd64	percona-server-client-5.5	-	5.5.35-rel33.0-611.wheezy
+ amd64	percona-server-common-5.5	-	5.5.35-rel33.0-611.wheezy
+ amd64	percona-server-server	-	5.5.35-rel33.0-611.wheezy
+ amd64	percona-server-server-5.5	-	5.5.35-rel33.0-611.wheezy
! i386	libmysqlclient18	5.5.31+dfsg-0+wheezy1	5.5.35-rel33.0-611.wheezy
+ i386	percona-server-client-5.5	-	5.5.35-rel33.0-611.wheezy
+ i386	percona-server-common-5.5	-	5.5.35-rel33.0-611.wheezy
+ i386	percona-server-server	-	5.5.35-rel33.0-611.wheezy
+ i386	percona-server-server-5.5	-	5.5.35-rel33.0-611.wheezy



# 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]
```

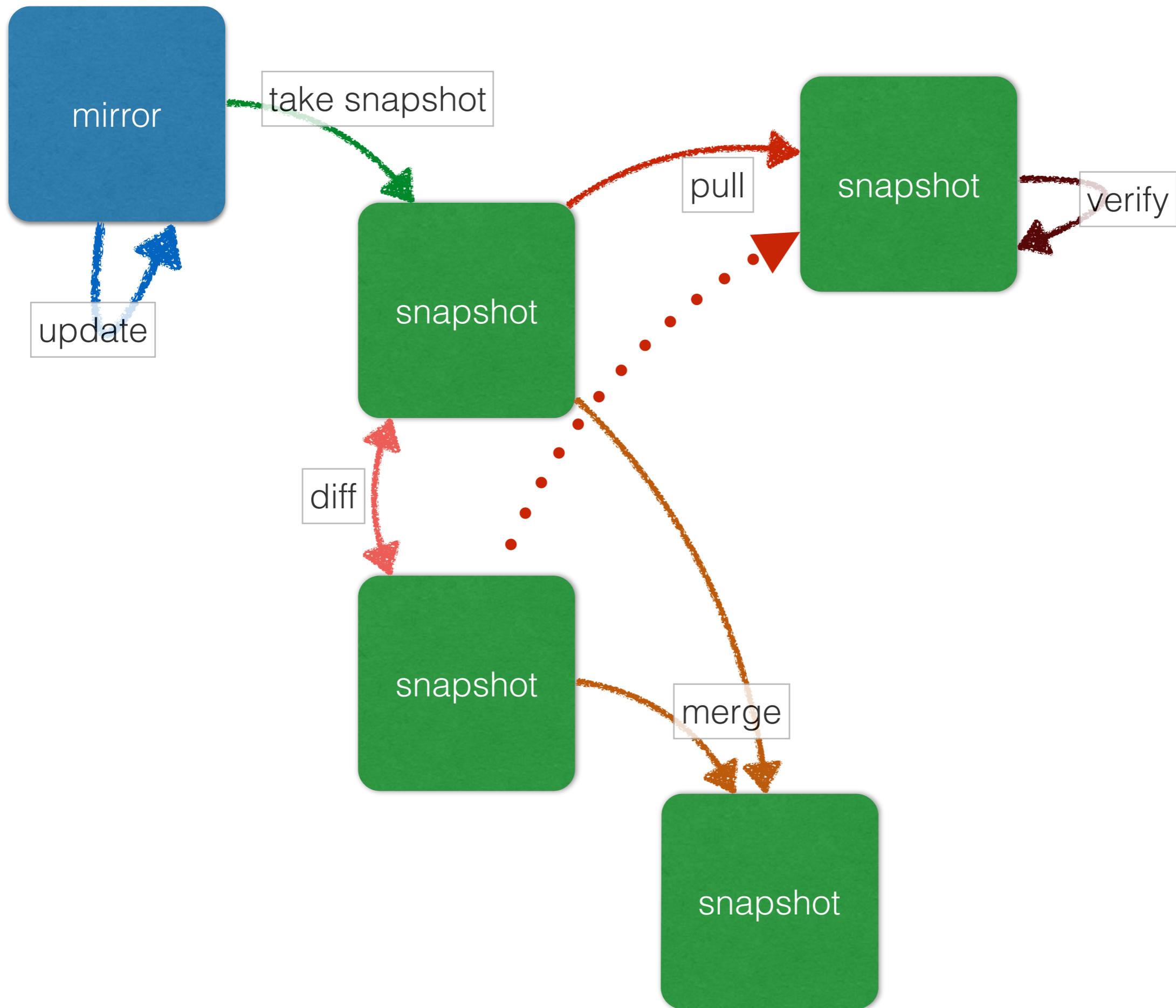


# aptly snapshot merge

```
$ aptly snapshot merge deb-w-percona-250114 deb-main-250114  
percona-250114
```

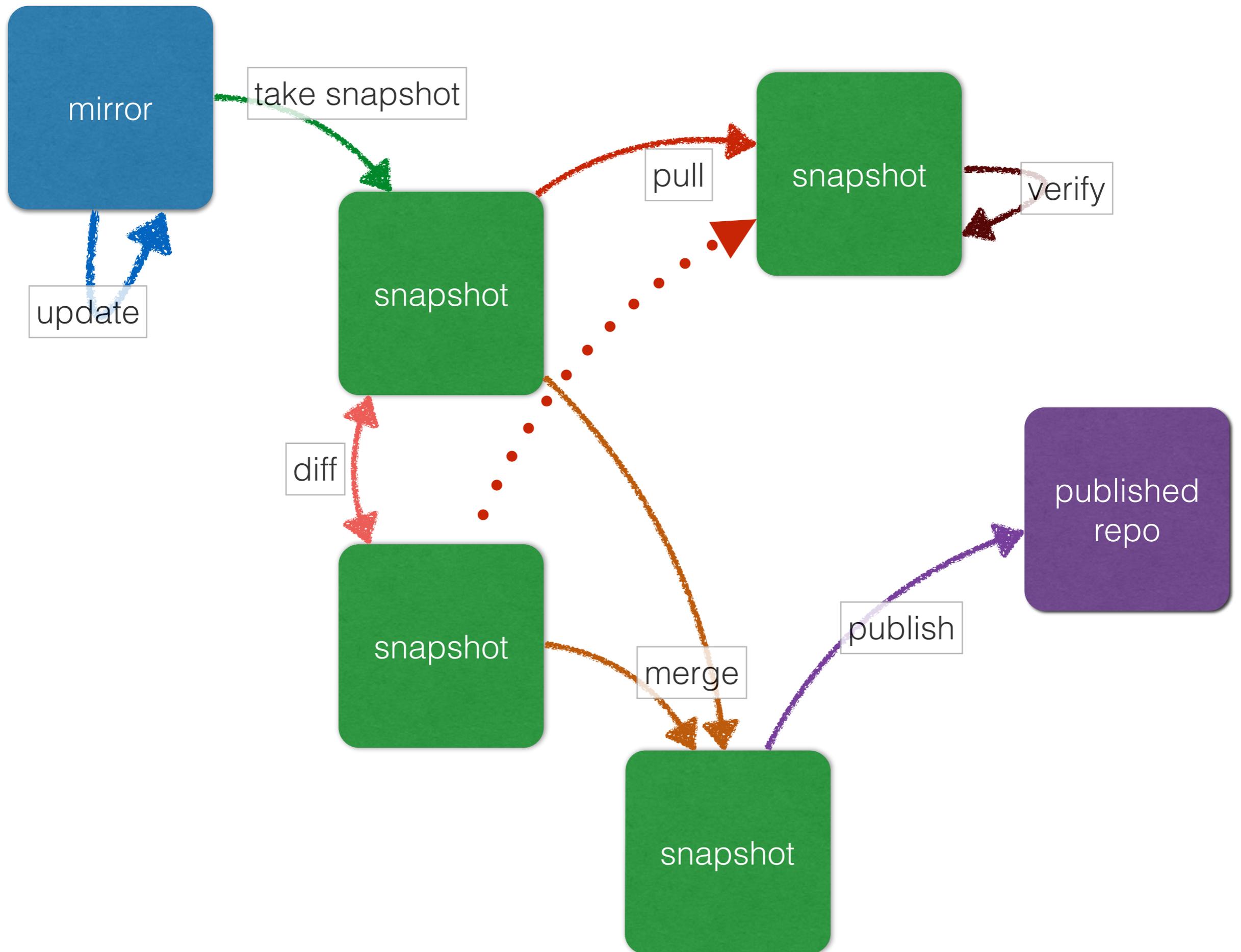
Snapshot deb-w-percona-250114 successfully created.

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

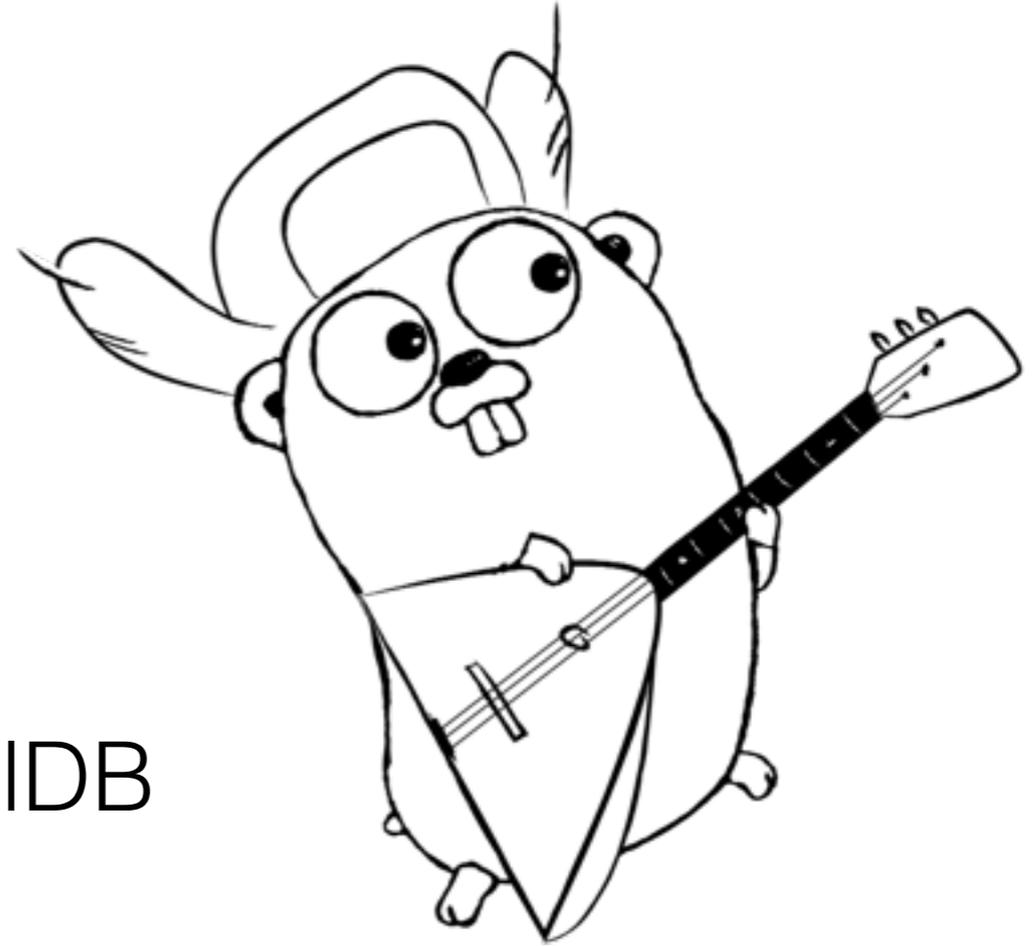
- deletion
- bash-completion
- flat-repositories
- download progress

# 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](mailto:me@smira.ru)
- Skype: smirnov.andrey