

Apt-mirror

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Introduction

Apt-mirror is part of the Advanced Package Tools (APT). Apt-mirror permits your PC or laptop to serve as a Debian mirror.

- 1993 Ian Murdok starts Debian Linux Release while at Purdue Univ.
- 1997 dselect replacement project started codename Diety
- 1998 apt-get very well received original UI effort abandoned

1. Debian

1.1 Packages

Packages (.deb) contain:

- metadata (name, description, version, dependencies, hash, etc.)

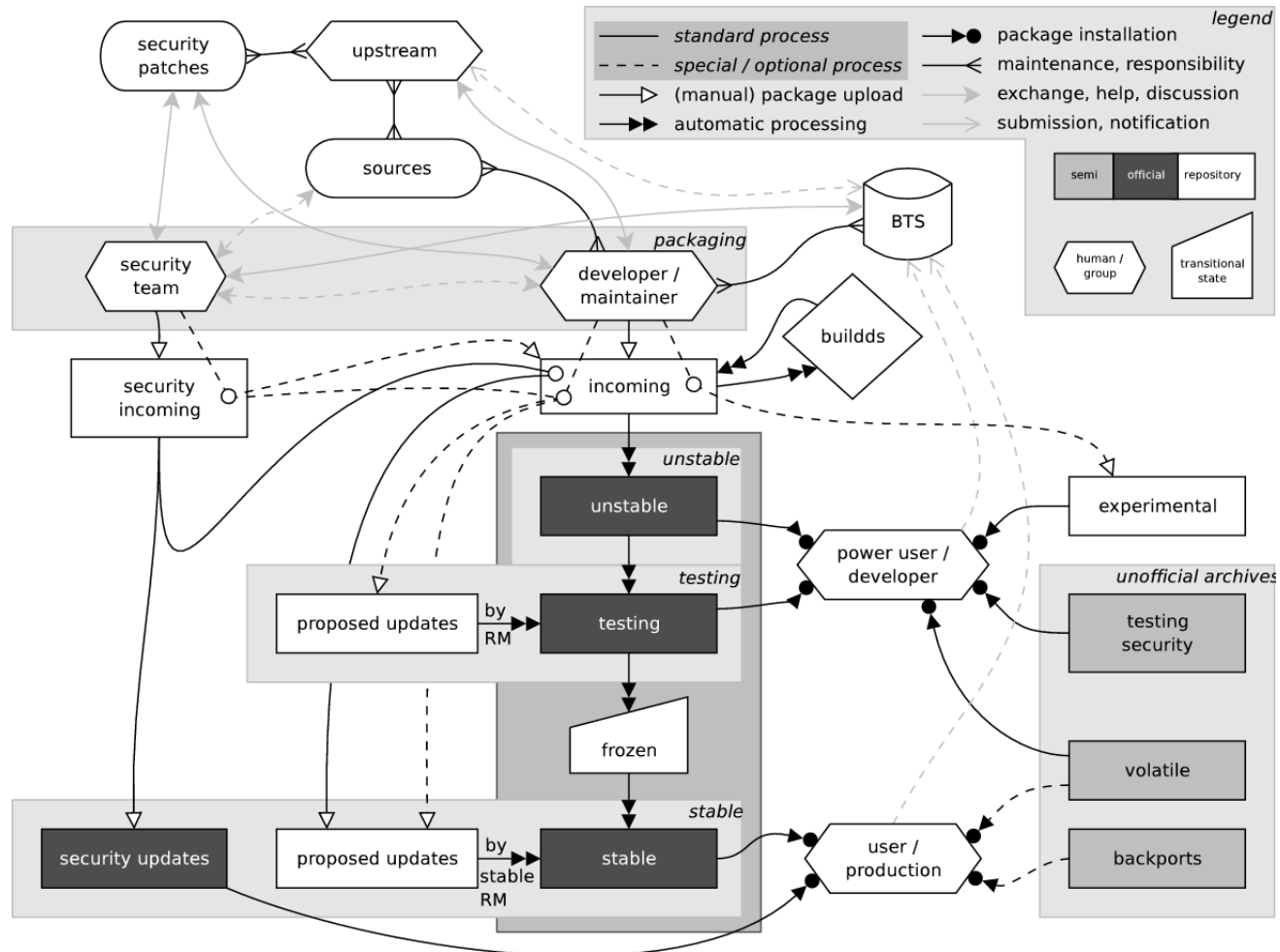
- software (source or binary).

Packages (over 20,000) are organized into a central repository

- mirrored by hundreds of systems around the world.

1. Debian

1.2 Package Life Cycle



1. Debain

1.3 Package Management

dpkg is the low-level tool that can: install, remove, and provide metadata for individual packages.

libapt is a library of high-level tools that can:

- connect to a variety of local and remote repositories,

- search for new packages,

- upgrade packages, or even an entire Debian release,

- automatically install and remove dependencies,

- topologically sort dependencies, then call dpkg in optimal sequence.

1. Debian

1.4 User Interface

apt-get is a CLI that calls libapt

(apt-cache, apt-cdrom, apt-zip, etc., also call libapt).

aptitude is a high-level text-based UI (alternative to dselect).

Several GUI alternatives also exist (synaptic, kpackage).

1. Debian

1.5 apt-mirror

Connects to a variety of repositories (via aptlib).

Allows user to copy:

- selected repositories (<ftp.us.debian.org>, <security.debian.org>)

- selected architectures (i386, amd64, alpha, sparc, arm, powerpc, hppa, ia64, mips, mipsel, s390)

- selected debian releases (lenny, etch, etc.)

2. Mirror Setup

2.1 Hardware

Install HDD	Use minimum 250GB.
Partition HDD	Recommend 40GB /var partition. Do not mirror every architecture, because most people need only i386 and amd64. Mirroring these two occupies a little over 30GB.

2. Mirror Setup

2.2 Software Packages

Install Debian	Recommend clean install
	Priority “Required” packages
	dpkg - Debian package management system
	Priority “Important” packages
	apt - Advanced front-end for dpkg
	aptitude - Terminal based package manager
Install mirror	Priority “Optional” packages
	apt-mirror - APT sources mirroring tool
	apache2 - Apache HTTP Server metapackage

2. Mirror Setup

2.3 /var/spool/apt-mirror

Put repository in recommended directory

```
# mkdir /var/spool/apt-mirror
# chown apt-mirror:apt-mirror /var/spool/apt-mirror
```

Note that apt-mirror names both a user and a group:

```
# cat /etc/passwd | grep apt-mirror
apt-mirror:x:108:114::/var/spool/apt-mirror:/bin/sh
# cat /etc/group | grep apt-mirror
apt-mirror:x:114:
```

2. Mirror Setup

2.4 /etc/apt/mirror.list

```
# apt-mirror configuration file
```

```
##
```

```
## The default configuration options (uncomment and change to override)
```

```
##
```

```
set base_path    /var/spool/apt-mirror
```

```
set mirror_path  $base_path/mirror
```

```
set skel_path    $base_path/skel
```

```
set var_path     $base_path/var
```

```
set defaultarch  amd64
```

```
set nthreads     20
```

```
set _tilde 0
```

2. Mirror Setup

2.4 /etc/apt/mirror.list (cont.)

##

Sources

##

Distribution

+--architectures [amd64 (default), and i386]

deb http://ftp.us.debian.org/debian lenny main contrib non-free

deb-i386 http://ftp.us.debian.org/debian lenny main contrib non-free

#deb-src http://ftp.us.debian.org/debian lenny main contrib non-free

+--debian installer

deb http://ftp.us.debian.org/debian lenny main/debian-installer

deb-i386 http://ftp.us.debian.org/debian lenny main/debian-installer

2. Mirror Setup

2.4 /etc/apt/mirror.list (cont.)

```
# +--security updates
```

```
deb      http://security.debian.org/debian-security lenny/updates main co
```

```
deb-i386 http://security.debian.org/debian-security lenny/updates main co
```

```
#deb-src http://security.debian.org/debian-security lenny/updates main co
```

```
# +--backports
```

```
deb      http://www.backports.org/debian lenny-backports main contrib non
```

```
deb-i386 http://www.backports.org/debian lenny-backports main contrib non
```

```
#deb-src http://www.backports.org/debian lenny-backports main contrib non
```

```
# +--moblock
```

```
deb      http://moblock-deb.sourceforge.net/debian lenny main
```

```
deb-i386 http://moblock-deb.sourceforge.net/debian lenny main
```

```
#deb-src http://moblock-deb.sourceforge.net/debian lenny main
```

2. Mirror Setup

2.4 /etc/apt/mirror.list (cont.)

```
##  
## Cleaner configuration  
##  
  
set cleanscript $var_path/clean.sh  
  
# Cleaning section  
# +--Remove files missing in up-to-date indexes  
clean http://ftp.us.debian.org/  
clean http://security.debian.org/  
clean http://www.backports.org/  
clean http://moblock-deb.sourceforge.net/
```


2. Mirror Setup

2.4 /etc/apt/mirror.list (cont.)

```
# +--Exclude directories not managed by apt or apt-mirror
skip-clean http://ftp.us.debian.org/doc/
skip-clean http://ftp.us.debian.org/tools/
skip-clean http://ftp.us.debian.org/debian-cd/
skip-clean http://ftp.us.debian.org/debian-minicd/
skip-clean http://ftp.us.debian.org/debian/dists/lenny/main/installer-i386/
skip-clean http://ftp.us.debian.org/debian/doc/
skip-clean http://ftp.us.debian.org/debian/tools/
skip-clean http://ftp.us.debian.org/debian/project/
skip-clean http://ftp.us.debian.org/debian-non-US/project/
```

2. Mirror Setup

2.5 /root/Makefile

For manual operations, recommend following Makefile:

apt-mirror:

```
# Synchronize local repository from remote repositories
su - apt-mirror -c apt-mirror
/var/spool/apt-mirror/var/clean.sh
```

upgrade:

```
mount -o remount,rw /usr
/etc/init.d/apache2 start
aptitude update
# Install newest versions of packages from sources
aptitude safe-upgrade
/etc/init.d/apache2 stop
mount -o remount,ro /usr
```

2. Mirror Setup

2.6 /etc/cron.d/apt-mirror

For automatic operations, recommend following Cron Job:

```
# Regular cron jobs for the apt-mirror package
# m h dom mon dow user  command
0 4 * * * apt-mirror /usr/bin/apt-mirror >
/var/spool/apt-mirror/var/cron.log && /var/spool/apt-mirror/var/clean.sh
> /var/spool/apt-mirror/var/cron.log
```

2. Mirror Setup

2.7 /var/www/*

Prepare web mirror by setting soft links to local repositories

```
# cd /var/www
# ls -l
lrwxrwxrwx 1 root root 54 2008-10-05 19:10 debian ->
/var/spool/apt-mirror/mirror/ftp.us.debian.org/debian/
lrwxrwxrwx 1 root root 54 2008-10-05 19:10 debian-backports ->
/var/spool/apt-mirror/mirror/www.backports.org/debian/
lrwxrwxrwx 1 root root 64 2008-10-05 19:10 debian-moblock ->
/var/spool/apt-mirror/mirror/moblock-deb.sourceforge.net/debian/
lrwxrwxrwx 1 root root 65 2008-10-05 19:10 debian-security ->
/var/spool/apt-mirror/mirror/security.debian.org/debian-security/
```

2. Mirror Setup

2.8 /etc/init.d/apache2

To let others use your mirror, you will need a web server. Start web server by typing:

```
# /etc/init.d/apache2 start
```

Whenever services are not needed for an extended period of time, stop them for security reasons.

```
# /etc/init.d/apache2 stop
```

2. Mirror Setup

2.9 /etc/apt/sources.list

Initially sources.list points to the CDROM or network repository from which you installed.

Test your mirror by pointing sources.list to the mirror.

```
deb http://localhost/debian lenny main contrib non-free
deb http://localhost/debian-security lenny/updates main contrib non-free
deb http://localhost/debian-moblock lenny main
```

and then type

```
# su - apt-mirror -c apt-mirror
# /var/spool/apt-mirror/var/clean.sh
# /etc/init.d/apache2 start
# aptitude update
# /etc/init.d/apache2 stop
```

3. Client Setup

3.1 Software Packages

Install Debian Recommend clean install
 Priority “Required” packages
 dpkg - Debian package management system
 Priority “Important” packages
 apt - Advanced front-end for dpkg
 aptitude - Terminal based package manager

3. Client Setup

3.2 /etc/apt/sources.list

Point client to your new local mirror

```
deb http://<mirror>/debian lenny main contrib non-free
deb http://<mirror>/debian-security lenny/updates main contrib non-free
deb http://<mirror>/debian-moblock lenny main
```


3. Client Setup

3.3 /root/Makefile

For manual operation, recommend following Makefile

upgrade:

```
mount -o remount,rw /usr
# Synchronize package index files from sources
aptitude update
# Install newest versions of packages from sources
aptitude safe-upgrade
mount -o remount,ro /usr
```