

# Distributing your own Debian packages

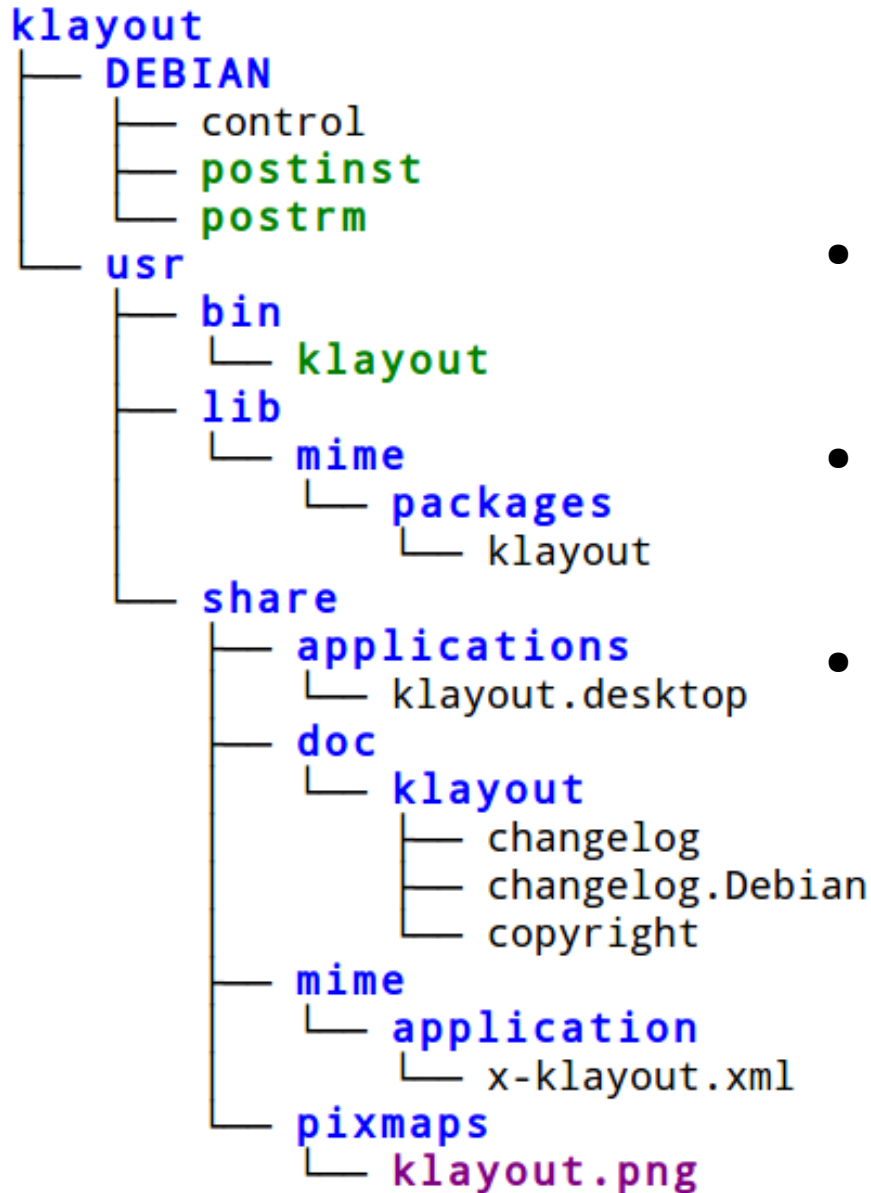
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# Contents

- What is inside a Debian package
  - How to distribute these packages
  - Live demo
- 
- Some handy tools use to create color directory layout:  
`tree -C <directory> | aha > paste.html`
  - Demonstration of commands in Courier:  
`gnome-terminal --zoom=2`

# What is a Debian package?



- Archive with ID, data.tar.gz, control.tar.gz
- **control:** files defining the installation or removal procedure
- **data:** binary executables, configuration files, ChangeLog, MIME etc.

# Control file example

- Control files define installation or removal procedure

Package: klayout

Version: **0.22.7-2**

Architecture: **amd64**

Maintainer: Matthias Köfferlein <matthias@koefflerlein.de>

Installed-Size: 88876

**Depends:** libqt4-designer (>= 4.8.1), libqt4-xml (>= 4.8.1), libqt4-sql (>= 4.8.1), libqt4-network (>= 4.8.1), libqtcore4 (>= 4.8.1), libqtgui4 (>= 4.8.1), zlib1g (>= 1.2.3.4), libruby1.9.1 (>= 1.9.3), libstdc++6 (>= 4.6.3), libc6 (>= 2.15)

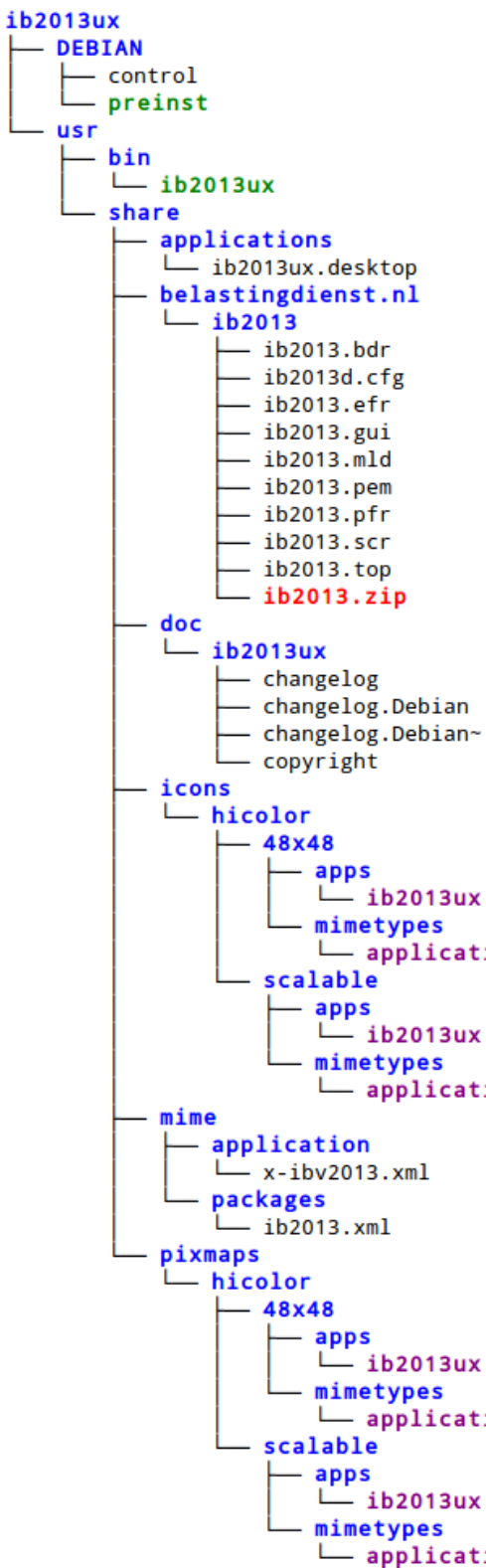
Section: **contrib**/misc

Priority: optional

Description: Chip mask layout review and edit utility

Klayout is a graphical viewer for a.o. GDSII and CIF files.

Its features include net highlighting and XOR-ing of two layouts.



# Verification of a package

- **lintian** to test package, before install
- Example of pre-compiled third party software is possible
- Copyright belastingdienst ( !=GPLv2 )
- Multi-Arch ??

E: va2013ux: embedded-library usr/bin/va2013ux: openssl  
 E: va2013ux: embedded-library usr/bin/va2013ux: expat  
 E: va2013ux: embedded-library usr/bin/va2013ux: zlib  
 E: va2013ux: embedded-library usr/bin/va2013ux: libjpeg

# Distribution methods

## *The quick method: Personal Package Archive (PPA)*

<https://help.launchpad.net/Packaging/PPA>

- ++ no software installation needed
- ++ no hardware nor connection needed
- ++ conversion from source to binary package
- limited size (2GB)
- only two architectures supported: **x86** and **amd64**
- public accessible by anyone: no legal way to distribute proprietary software on intranet.



Packaging/PPA

## Distribution methods

### ***The hard way (and more fun): own APT server***

Selected hardware: **Excito bubba3 (1TB, 8Watt)**

Required software:

**reprepro**, handles the content of the directories =  
(available packages)

**apache**, serves them via http

**gpg**, signing it



# Creating a signature

- First create signature on webserver:

```
gpg --gen-key
```

- List the key by:

```
root@b3:/home/peter# gpg --list-keys
```

```
/root/.gnupg/pubring.gpg
```

```
-----
```

```
pub      2048R/A598EDCB 2014-05-07 [expires: 2019-04-11]
```

```
uid           Peter C.S. Scholtens (Dutch Linux  
Enthusiast) <peter.scholtens@xs4all.nl>
```

```
sub      2048R/81E10924 2014-05-07 [expires: 2019-04-11]
```

- To distribute the public part of the key:

```
gpg --export --armor A598EDCB > /home/peter/PCS_2019-04-11.key
```



# Preparing the directory structure

- Install the software:

```
su  
apt-get install reprepro      # Found version 4.2.0-2squeeze1  
apt-get install apache2      # Found version 2.2.16-6+squeeze11
```

- To see if your server is actually running you may edit:

```
sudo gedit /var/www/index.html
```

- In a web browser, now have a look (*Default Apache installation varies from distro to distro!!!*):

```
http://localhost/
```

- Now create the following subdirectories:

```
su  
mkdir -p /var/www/apt.peterscholtens.net/htdocs/apt  
mkdir -p /var/www/apt.peterscholtens.net/htdocs/apt/conf  
mkdir -p /var/www/apt.peterscholtens.net/htdocs/apt/incoming
```

- Link to simplify command for clients:

```
cd /var/www/apt.peterscholtens.net  
ln -s htdocs/apt/ debstore
```

# Defining the supported distribution

- Create a distribution file:

**su**

```
touch /var/www/apt.peterscholtens.net/htdocs/apt/conf/distributions
```

```
nano /var/www/apt.peterscholtens.net/htdocs/apt/conf/distributions
```

- Put next 7 lines in this file:

```
Origin: Peter Scholtens
```

```
Label: Citizen
```

```
Suite: stable
```

```
Codename: precise
```

```
Architectures: i386 amd64
```

```
Components: main non-free contrib
```

```
Description: Some contributions for society 0.75.9ubuntu1.1
```

```
SignWith: E7542F2E
```

# Set the options file

- Create the options file:

```
su
```

```
touch /var/www/apt.peterscholtens.net/htdocs/apt/conf/options
```

```
nano /var/www/apt.peterscholtens.net/htdocs/apt/conf/options
```

- Put next 3 lines in this file:

```
verbose
```

```
basedir /var/www/apt.peterscholtens.net/htdocs/apt
```

```
ask-passphrase
```

- Now the APT repository is ready to use!

# Adding, listing packages

- Import a single (or multiple) Debian file with:

```
cd /var/www/apt.peterscholtens.net/htdocs/apt
```

```
su
```

```
reprepro -Vb . includedeb precise /home/peter/*2013ux*_i386.deb
```

- To see which Debian packages are currently present:

```
cd /var/www/apt.peterscholtens.net/htdocs/apt
```

```
su
```

```
reprepro list precise
```

- You'll see an output format like:

```
precise|non-free|i386: ib2012ux 0.0.4
```

```
precise|non-free|i386: ib2013ux 0.0.2
```

```
precise|non-free|i386: va2013ux 0.0.1
```

# Removing, force other section...

- To remove a Debian package, as an example (there no need to do that if you a higher release number, then it happens automatically):

```
cd /var/www/apt.peterscholtens.net/htdocs/apt
```

```
su
```

```
reprepro remove precise ib2012ux
```

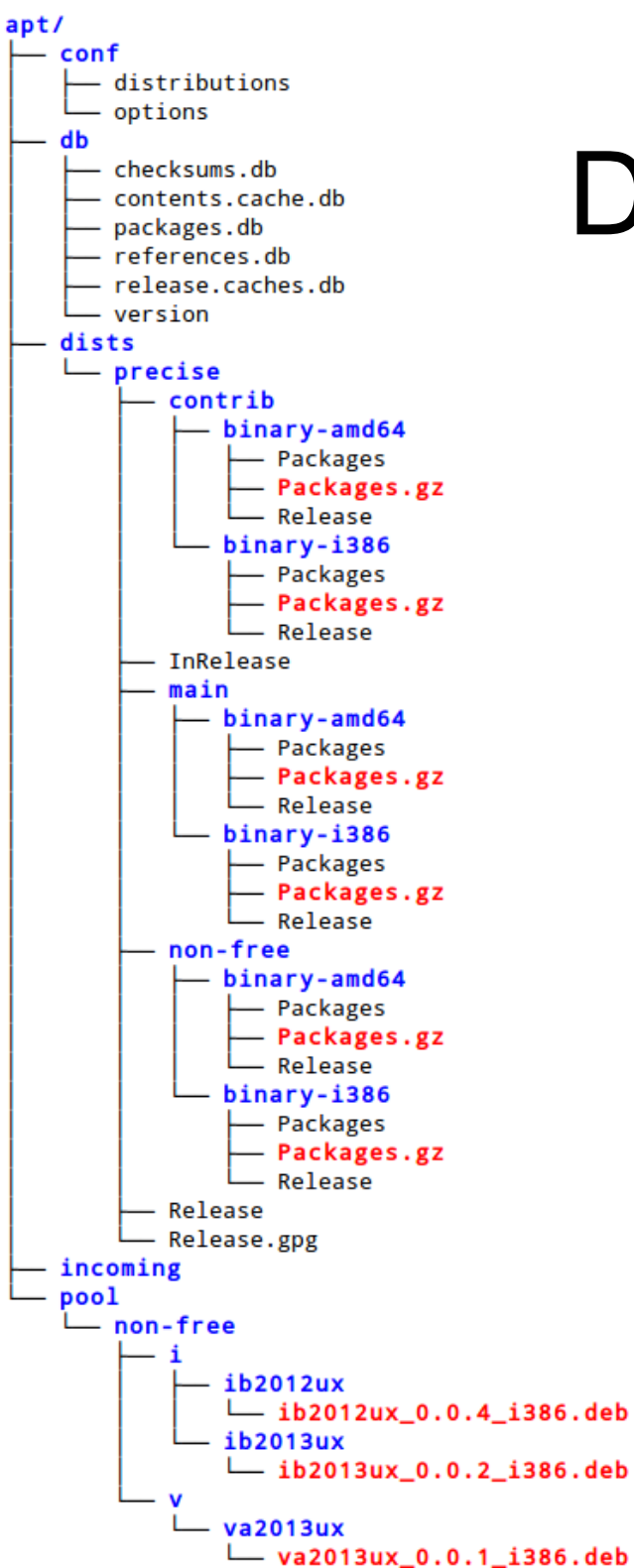
- To force usage of a different section do use option -S:

```
cd /var/www/apt.peterscholtens.net/htdocs/apt
```

```
su
```

```
reprepro -Vb . -S non-free includedeb precise  
/home/peter/cnijfilter*deb
```

# Disk layout of the server



- Every arch it's own directory with package descriptions
- File **InRelease** is gpg-signed content (md5sums of packages)
- Pool with alpha char dir's: you could mirror all packages locally (saving external bandwidth)

## Demonstration (32-bit only)

***“Leuker kunnen we het niet maken, wel gemakkelijker”***

Install key file (means **you trust me!**) from:

[http://scholtnp.home.xs4all.nl/publickeys/PCS\\_2019-04-11.key](http://scholtnp.home.xs4all.nl/publickeys/PCS_2019-04-11.key)

Add the repository (in one line, mind the spaces):

```
deb http://apt.peterscholtens.net/debstore precise main  
contrib non-free
```

After updating you'll have also the following packages in the software store:

*ib2012ux, ib2013ux, va2013ux,...*

Computer  
peter's Home  
Trash  
PCS\_2019-04-11.key

### Software Sources (as superuser)

Debian Software Third-Party Software Updates **Authentication** Statistics

#### Trusted software providers

F42584E6	2008-04-06	Lenny Stable Release Key <debian-release@lists.debian.org>
55BE302B	2009-01-27	Debian Archive Automatic Signing Key (5.0/lenny) <ftpmaster@debian.org>
6D849617	2009-01-24	Debian-Volatile Archive Automatic Signing Key (5.0/lenny)
B98321F9	2010-08-07	Squeeze Stable Release Key <debian-release@lists.debian.org>
473041FA	2010-08-27	Debian Archive Automatic Signing Key (6.0/squeeze) <ftpmaster@debian.org>
46925553	2012-04-27	Debian Archive Automatic Signing Key (7.0/wheezy) <ftpmaster@debian.org>
65FFB764	2012-05-08	Wheezy Stable Release Key <debian-release@lists.debian.org>
A598EDCB	2014-05-07	Peter C.S. Scholtens (Dutch Linux Enthousiast) <peter.scholtens@xs4all.nl>

+ Import Key File... Remove Restore Defaults

Revert Close





### Synaptic Package Manager (as superuser)

File Edit Package Settings Help

Reload Mark All Upgrades Apply Properties

Quick search  
 Search

Package	Installed Version	Latest Version	Description
---------	-------------------	----------------	-------------

- All
- Amateur Radio
- Communication
- Cross Platform
- Databases
- Debug
- Development
- Documentation
- Editors
- Electronics
- Email
- Embedded Devices
- Fonts
- GNOME Desktop E
- GNU R statistical s
- Games and Amuse
- GNUPLOT Desktop
- Sections
- Status
- Origin
- Custom Fil
- Search Res

### Software Sources (as superuser)

Debian Software Third-Party Software Updates Authentication Statistics

- cdrom:[Debian GNU/Linux 6.0.6 \_Squeeze\_ - Official i386 NETINST Binary-1 20120930-15:55]
- cdrom:[Debian GNU/Linux 6.0.6 \_Squeeze\_ - Official i386 NETINST Binary-1 20120930-15:55]
- http://ftp.nl.debian.org/debian
- http://ftp.nl.debian.org/debian
- http://apt.peterscholtens.net

#### Edit Source (as superuser)

Type: Binary

URI:

Distribution:

Components:

Comment:

Cancel OK

+ Add... Edit... Remove Add CD-ROM...

Revert Close



Computer



peter's Home



Trash



PCS\_2019-04-11.key

Software Sources (as superuser)

Debian Software Third-Party Software Updates Authentication Statistics

- cdrom:[Debian GNU/Linux 6.0.6 \_Squeeze\_ - Official i386 NET
- cdrom:[Debian GNU/Linux 6.0.6 \_Squeeze\_ - Official i386 NET
- <http://ftp.nl.debian.org/debian/> squeeze-updates main
- <http://ftp.nl.debian.org/debian/> squeeze-updates main (Source
- <http://apt.peterscholtens.net/debstore> precise main

+ Add... Edit... Remove Add CD-ROM... Revert Close

- Computer
- peter's Home
- Trash
- PCS\_2019-04-11.key

**Software Center**

File Edit Help

Get Software

Installed Software

Get Software Search Results

Inkomstenbelasting aangifte 2012  
ib2012ux

Inkomstenbelasting aangifte 2013  
ib2013ux

2 matching items