Slackware Software Packaging: How and Where To Start

How many of you are aware of the steps in creating Slackware packages

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Outline

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3 Preparation For Building

4 Building The Source Code

5 Creating The Package

6 The End

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Shell

- Some basic shell programming skills
- GNU Coreutils

Example

GNU Coreutils

- mkdir
- cat
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bzip2
xz/lzma

mime
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- http://tukaani.org/pkgtools/ an old forked version
- installpkg
- removepkg
- upgradepkg
- explodepkg
- makepkg - The Package Creator/Maker
- slackbuild scripting

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Definition: An archive format with/out instructions used for the installation of files on a system

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- t?z
- deb
- rpm

mime

- Slackware
- Debian
- Red Hat
- OpenSUSE

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Definition of a package

A Slacker's goal to world domination

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A package manager is a collection of software tools that

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- upgrade
- configure
- remove
- performs other related jobs on

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Create temporary files/directories that are predictable, safe and to avoid possible race conditions.

```
cd /tmp/$"Temporary Directory"
```

/tmp

The /tmp directory is assumed to cleaned regularly, sometimes assumed a tmpfs is mount over tmp
The source code is often extracted into /tmp directly.

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Copy The Source Code

Copy the source code archive into the tmp dir

```
cp ${old path}/${source code archive} .
```

Download The Source Code

Or Download the source code archive into the tmp dir

```
wget/curl
protocol://url/${source code archive}
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Extracting The Source Code

This step is optional

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Extract files into the ‘mktmp‘/tmp directory

```
tar -xvvf ../"${source code archive}"
```

$$/tmp \xrightarrow[D]{} \$PKG \xrightarrow[D]{} build$$

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Configuration of the source code

Pre-Configuration and Configuration

pre-configuration

Rarely is pre-configuration performed.

Example

autotools

- aclocal
- autoconf
- automake

configuration

Most of the times configuration is needed.

Example

- ./configure
- cmake
- python setup.py
- gem
- qmake

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Building the Source Code

After configuration, the code has to be compiled into machine code.

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- make
- perl Makefile.pl
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A Summary

A summary of the job done

$$Pre - Configuration \longrightarrow\!\!\!\!\!\rightarrow Configuration \longrightarrow\!\!\!\!\!\rightarrow Building$$

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Installation of Package Files in tmp directory

The package files are installed in a directory using the $PKG = \$TMP/package - \$PRGNAM$ shell path parameter.

```
make install DESTDIR=$PKG
python setup.py install --root=$PKG
gem install --install-dir $PKG/$DESTDIR
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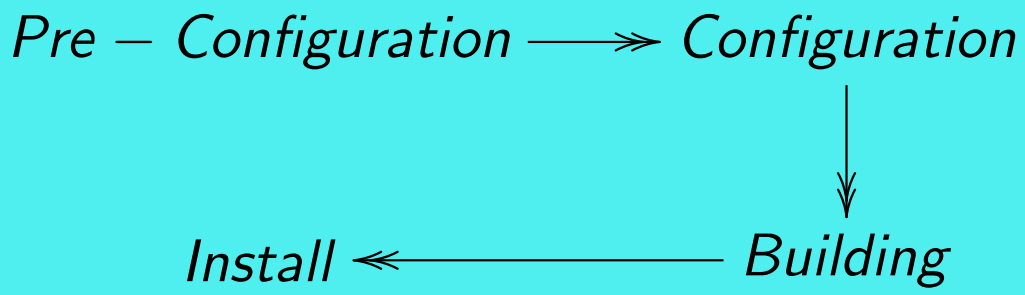

stripping of binaries

After installation of object files/binaries, they need to be stripped off of unnecessary symbols.

```
find $PKG -print0 | xargs -0 file \
| grep -e "executable" -e "shared object" \
| grep ELF \
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| xargs strip --strip-unneeded \
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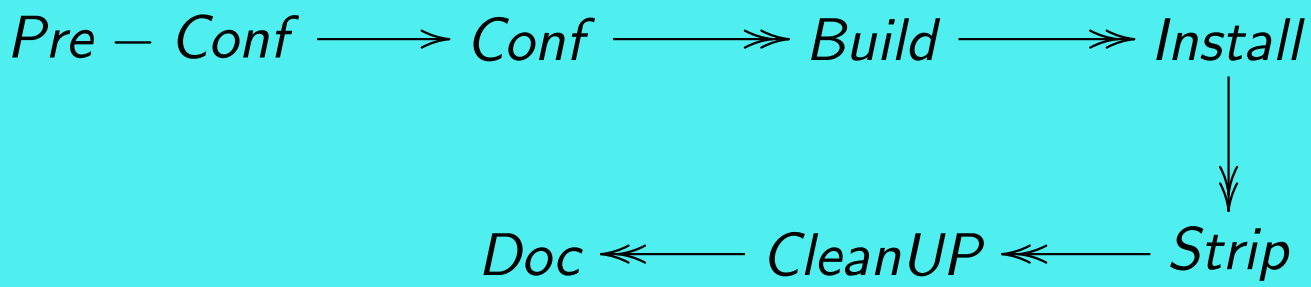
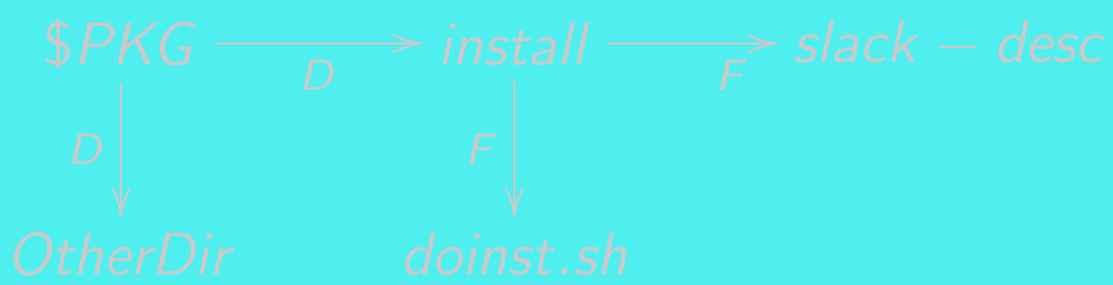


$PKG/install directory

An extra install directory exist in all Slackware Packages. This folder normally contains two files.

- slack-desc : This contains a summary and full description of the package.
- doinst.sh : contains instructions for the post installation stage, most of the time linking of files.



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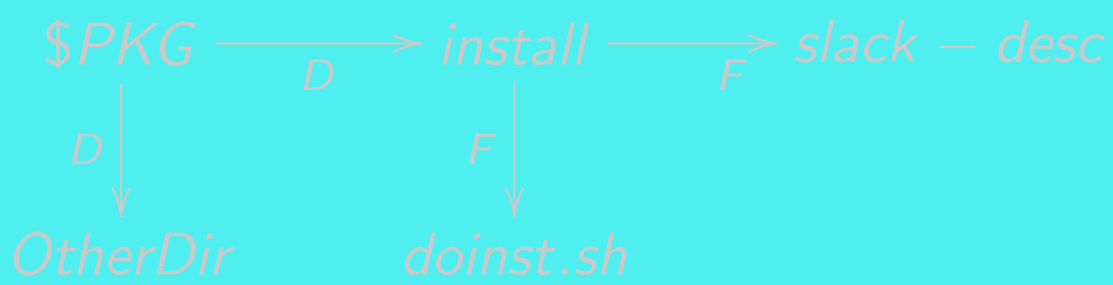

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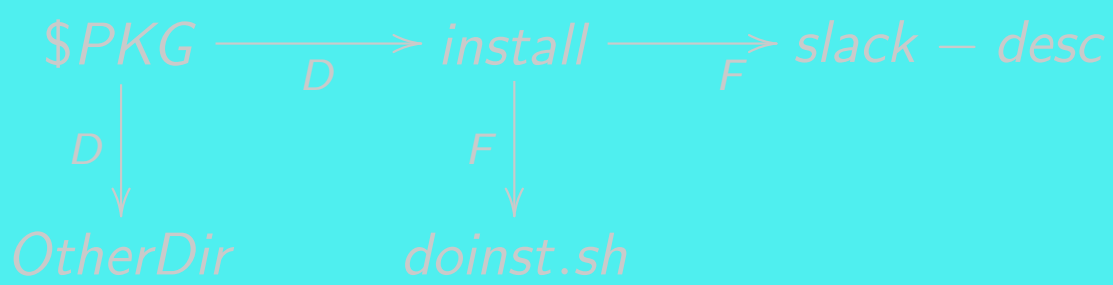

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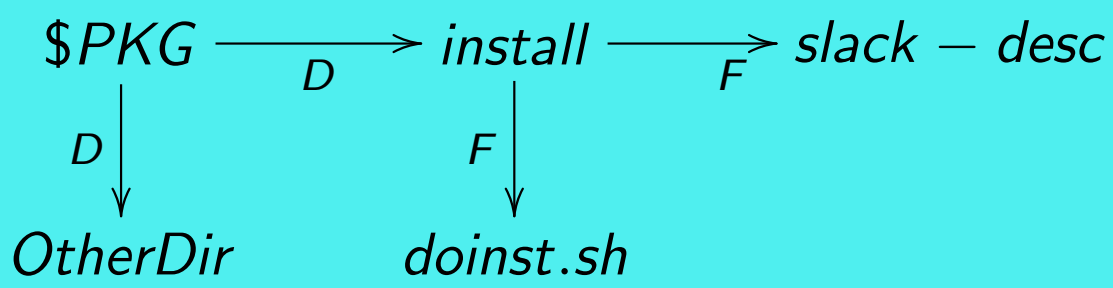

$PKG/install directory

Copy the slack-desc and a custom doinst.sh if necessary into ./install

```
mkdir -p $PKG/install

cat $CWD/slack-desc > $PKG/install/slack-desc

cat $CWD/doinst.sh > $PKG/install/doinst.sh
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Makepkg

makepkg creates a Slackware compatible package. The package is constructed using the contents of the current directory and all sub directories.

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cd $PKG
makepkg $PRGNAM.tgz
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makepkg options

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Makepkg

with makepkg full options

```
/sbin/makepkg -l y -c n \
/tmp/$PRGNAM-$VERSION-$ARCH-$BUILD$TAG.tgz
```

Package

This is it, your package is ready and waiting for you in /tmp.

Makepkg

with makepkg full options

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Package

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Slackbuilds

Want to Automate your package building, then the only sane way is maintaining a script that we commonly call slackbuild script. All the steps above are entered into a script and tada, its done.

```
#!/bin/bash

PKG=/tmp/package-$PRGNAM

rm -rf $PKG
mkdir -p $TMP $PKG
cd /tmp
rm -rf $PRGNAM-$VERSION
```

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```
#!/bin/bash

PKG=/tmp/package-$PRGNAM

rm -rf $PKG
mkdir -p $TMP $PKG
cd /tmp
rm -rf $PRGNAM-$VERSION
```

```
tar xvf $CWD/$PRGNAM-$VERSION.tar.gz
cd $PRGNAM-$VERSION

chown -R root:root .

./configure

make
make install DESTDIR=$PKG
```

```
find ... | xargs strip ...
mkdir -p $PKG/install

cat $CWD/slack-desc > $PKG/install/slack-desc
cat $CWD/doinst.sh > $PKG/install/doinst.sh

cd $PKG

/sbin/makepkg /tmp/$PRGNAM.tgz
```

slackbuilds.org

Templates can be found at http://slackbuilds.org/templates

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Goal

- slack the hard way
- sip some beer
- Take over the world
- Relax...

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- LaTeX Beamer
  http://latex-beamer.sourceforge.net/
- KDE Presentations
  http://www.kde.org/kdeslides/
- My Prezz at Github
  https://github.com/Bluetailedgecko/Slackware-Software-Packaging-Presentation

Slackware GNU/Linux

Questions ?

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