

System Linux od podszewki - budowanie pakietu

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Informacje wstępne

Budowanie pakietu przeprowadzę dla programu ImageMagick, który to instalowałem ze źródeł w poprzednim zadaniu domowym.

Strona domowa programu: [strona domowa](#)

GitHub: [ImageMagick na GitHub](#)

Budowanie pakietu

Zależności

Sprawdzam czy zainstalowane są zależności niezbędne do poprawnego działania **ImageMagick** oraz pakiety niezbędne do przeprowadzenia procesu budowania pakietu ImageMagick.

```
dpkg -s gcc
```

```
pc@osboxes:~$ dpkg -s gcc
Package: gcc
Status: install ok installed
Priority: optional
Section: devel
Installed-Size: 45
Maintainer: Debian GCC Maintainers <debian-gcc@lists.debian.org>
Architecture: amd64
Source: gcc-defaults (1.190)
Version: 4:10.2.1-1
Provides: c-compiler, gcc-x86-64-linux-gnu (= 4:10.2.1-1)
Depends: cpp (= 4:10.2.1-1), gcc-10 (>= 10.2.1-3~)
Recommends: libc6-dev | libc-dev
Suggests: gcc-multilib, make, manpages-dev, autoconf, automake, libtool, flex, bison, gdb, gcc-doc
Conflicts: gcc-doc (< 1:2.95.3)
Description: GNU C compiler
 This is the GNU C compiler, a fairly portable optimizing compiler for C.
.
 This is a dependency package providing the default GNU C compiler.
pc@osboxes:~$
```

```
dpkg -s build-essential
```

```
pc@osboxes:~$ dpkg -s build-essential
Package: build-essential
Status: install ok installed
Priority: optional
Section: devel
Installed-Size: 20
Maintainer: Matthias Klose <doko@debian.org>
Architecture: amd64
Version: 12.9
Depends: libc6-dev | libc-dev, gcc (>= 4:10.2), g++ (>= 4:10.2), make, dpkg-dev
(>= 1.17.11)
```

```
dpkg -s autoconf
```

```
pc@osboxes:~$ dpkg -s autoconf
dpkg-query: package 'autoconf' is not installed and no information is available
Use dpkg --info (= dpkg-deb --info) to examine archive files.
pc@osboxes:~$
```

autoconf nie jest zainstalowane, zatem:

```
sudo apt install autoconf
```

```
pc@osboxes:~$ sudo apt install autoconf
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  automake autotools-dev libsigsegv2 m4
Suggested packages:
  autoconf-archive gnu-standards autoconf-doc libtool gettext m4-doc
The following NEW packages will be installed:
  autoconf automake autotools-dev libsigsegv2 m4
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,443 kB of archives.
After this operation, 4,354 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

↓

```
Selecting previously unselected package automake.
Preparing to unpack .../automake_1%3a1.16.3-2_all.deb ...
Unpacking automake (1:1.16.3-2) ...
Setting up autotools-dev (20180224.1+nmul) ...
Setting up libsigsegv2:amd64 (2.13-1) ...
Setting up m4 (1.4.18-5) ...
Setting up autoconf (2.69-14) ...
Setting up automake (1:1.16.3-2) ...
update-alternatives: using /usr/bin/automake-1.16 to provide /usr/bin/automake (
automake) in auto mode
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for libc-bin (2.31-13+deb11u3) ...
pc@osboxes:~$
```

```
dpkg -s automake
```

```
pc@osboxes:~$ dpkg -s automake
Package: automake
Status: install ok installed
Priority: optional
Section: devel
Installed-Size: 1830
Maintainer: Eric Dorland <eric@debian.org>
Architecture: all
Multi-Arch: foreign
Source: automake-1.16
Version: 1:1.16.3-2
Provides: automake-1.16, automaken
```

```
dpkg -s autotools-dev
```

```
pc@osboxes:~$ dpkg -s autotools-dev
Package: autotools-dev
Status: install ok installed
Priority: optional
Section: devel
Installed-Size: 157
Maintainer: Henrique de Moraes Holschuh <hnh@debian.org>
Architecture: all
Multi-Arch: foreign
Version: 20180224.1+nmu1
Enhances: cdb, debhelper
```

```
dpkg -s dh-make
```

```
pc@osboxes:~$ dpkg -s dh-make
dpkg-query: package 'dh-make' is not installed and no information is available
Use dpkg --info (= dpkg-deb --info) to examine archive files.
pc@osboxes:~$
```

dh-make nie jest zainstalowane, zatem:

```
sudo apt install dh-make
```

```
pc@osboxes:~$ sudo apt install dh-make
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  autopoint debhelper dh-autoreconf dh-strip-nondeterminism dwz gettext
  intltool-debian libarchive-cpio-perl libarchive-zip-perl libdebhelper-perl
  libfile-stripnondeterminism-perl libltdl-dev libmail-sendmail-perl
  libsub-override-perl libsys-hostname-long-perl libtool po-debconf
Suggested packages:
  gettext-doc libasprintf-dev libgettextpo-dev libtool-doc gfortran
  | fortran95-compiler gcj-jdk libmail-box-perl
The following NEW packages will be installed:
  autopoint debhelper dh-autoreconf dh-make dh-strip-nondeterminism dwz
  gettext intltool-debian libarchive-cpio-perl libarchive-zip-perl
  libdebhelper-perl libfile-stripnondeterminism-perl libltdl-dev
  libmail-sendmail-perl libsub-override-perl libsys-hostname-long-perl libtool
  po-debconf
0 upgraded, 18 newly installed, 0 to remove and 0 not upgraded.
Need to get 4,446 kB of archives.
After this operation, 12.6 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

↓

```
Setting up libarchive-cpio-perl (0.10-1.1) ...
Setting up libsub-override-perl (0.09-2) ...
Setting up libsys-hostname-long-perl (1.5-2) ...
Setting up libfile-stripnondeterminism-perl (1.12.0-1) ...
Setting up po-debconf (1.0.21+nmul) ...
Setting up dh-autoreconf (20) ...
Setting up libmail-sendmail-perl (0.80-1.1) ...
Setting up dh-strip-nondeterminism (1.12.0-1) ...
Setting up debhelper (13.3.4) ...
Setting up dh-make (2.202003) ...
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for libc-bin (2.31-13+deb11u3) ...
pc@osboxes:~$
```

```
dpkg -s debhelper
```

```
pc@osboxes:~$ dpkg -s debhelper
Package: debhelper
Status: install ok installed
Priority: optional
Section: devel
Installed-Size: 1496
Maintainer: Debhelper Maintainers <debhelper@packages.debian.org>
Architecture: all
Multi-Arch: foreign
Version: 13.3.4
```

```
dpkg -s devscripts
```

```
pc@osboxes:~$ dpkg -s devscripts
dpkg-query: package 'devscripts' is not installed and no information is available
Use dpkg --info (= dpkg-deb --info) to examine archive files.
pc@osboxes:~$
```

nie jest zainstalowane, zatem:

```
sudo apt install devscripts
```

```
pc@osboxes:~$ sudo apt install devscripts
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  dctrl-tools debian-keyring diffstat dput equivs libaliased-perl
  libapt-pkg-perl libarray-intspan-perl libb-hooks-endofscope-perl
  libb-hooks-op-check-perl libcapture-tiny-perl libclass-data-inheritable-perl
  libclass-inspector-perl libclass-method-modifiers-perl
  libclass-xsaccessor-perl libcommon-sense-perl libconfig-tiny-perl
```

↓

```

Setting up liblist-someutils-xs-perl (0.58-2+b1) ...
Setting up devscripts (2.21.3+deb11u1) ...
Setting up libmoosex-aliases-perl (0.001006-1.1) ...
Setting up libparams-validate-perl:amd64 (1.30-1+b1) ...
Setting up libb-hooks-endofscope-perl (0.24-1.1) ...
Setting up libnamespace-clean-perl (0.27-1) ...
Setting up libgetopt-long-descriptive-perl (0.105-1) ...
Setting up libnamespace-autoclean-perl (0.29-1) ...
Setting up libgitlab-api-v4-perl (0.26-1) ...
Setting up libmoosex-struct-perl (0.020-1) ...
Setting up lintian (2.104.0) ...
Setting up licensecheck (3.1.1-2) ...
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for libc-bin (2.31-13+deb11u3) ...
pc@osboxes:~$

```

```
dpkg -s fakeroot
```

```

pc@osboxes:~$ dpkg -s fakeroot
Package: fakeroot
Status: install ok installed
Priority: optional
Section: utils
Installed-Size: 228
Maintainer: Clint Adams <clint@debian.org>
Architecture: amd64
Multi-Arch: foreign
Version: 1.25.3-1.1
Depends: libfakeroot (>= 1.25.3-1.1), libc6 (>= 2.15)
Description: tool for simulating superuser privileges
 fakeroot provides a fake "root environment" by means of LD_PRELOAD and
 SysV IPC (or TCP) trickery. It puts wrappers around getuid(), chown(),

```

```
dpkg -s xutils
```

```

pc@osboxes:~$ dpkg -s xutils
dpkg-query: package 'xutils' is not installed and no information is available
Use dpkg --info (= dpkg-deb --info) to examine archive files.
pc@osboxes:~$

```

nie jest zainstalowane, zatem:

```
sudo apt install xutils
```

```

pc@osboxes:~$ sudo apt install xutils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
 x11-xfs-utils
The following NEW packages will be installed:
 xutils
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 38.6 kB of archives.
After this operation, 47.1 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bullseye/main amd64 xutils all 1:7.7+22 [38.6
kB]
Fetched 38.6 kB in 0s (452 kB/s)
Selecting previously unselected package xutils.
(Reading database ... 155249 files and directories currently installed.)
Preparing to unpack .../xutils_1%3a7.7+22_all.deb ...
Unpacking xutils (1:7.7+22) ...
Setting up xutils (1:7.7+22) ...
pc@osboxes:~$

```

```
dpkg -s lintian
```

```
pc@osboxes:~$ dpkg -s lintian
Package: lintian
Status: install ok installed
Priority: optional
Section: devel
Installed-Size: 6121
Maintainer: Debian Lintian Maintainers <lintian-maint@debian.org>
Architecture: all
Multi-Arch: foreign
Version: 2.104.0
Replaces: funny-manpages (<< 1.3-5.1)
```

```
dpkg -s pbuilder
```

```
pc@osboxes:~$ dpkg -s pbuilder
dpkg-query: package 'pbuilder' is not installed and no information is available
Use dpkg --info (= dpkg-deb --info) to examine archive files.
pc@osboxes:~$
```

nie jest zainstalowane, zatem:

```
sudo apt install pbuilder
```

```
pc@osboxes:~$ sudo apt install pbuilder
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  arch-test debootstrap eatmydata libeatmydata1
Suggested packages:
  ubuntu-archive-keyring squid-deb-proxy-client cower gdebi-core
The following NEW packages will be installed:
  arch-test debootstrap eatmydata libeatmydata1 pbuilder
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 480 kB of archives.
After this operation, 1,629 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

↓

```
Unpacking pbuilder (0.231) ...
Setting up debootstrap (1.0.123) ...
Setting up pbuilder (0.231) ...
Setting up libeatmydata:amd64 (105-9) ...
Setting up arch-test (0.17-1) ...
Setting up eatmydata (105-9) ...
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for libc-bin (2.31-13+deb11u3) ...
pc@osboxes:~$
```

I to wszystkie pakiety które będą potrzebne.

Tworzę klucz gpg do podpisania pakietu...

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

Podaję kolejno:

- Real name: Marcin Sienkiewicz
- Email: mojEmail@gmail.com
- passphrase: k2022#MS

```
pc@osboxes:~$ gpg --gen-key
gpg (GnuPG) 2.2.27; Copyright (C) 2021 Free Software Foundation, Inc.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Note: Use "gpg --full-generate-key" for a full featured key generation dialog.

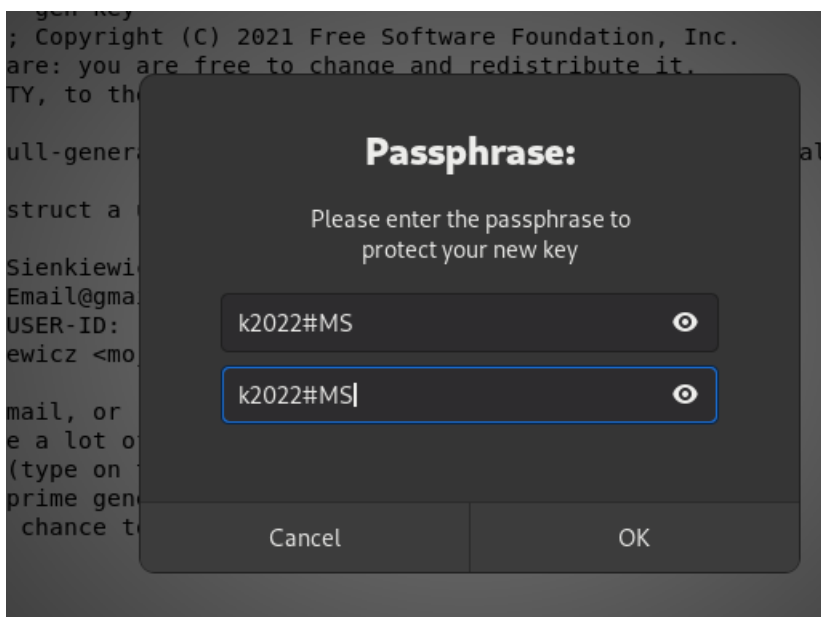
GnuPG needs to construct a user ID to identify your key.

Real name: Marcin Sienkiewicz
Email address: mojEmail@gmail.com
You selected this USER-ID:
    "Marcin Sienkiewicz <mojEmail@gmail.com>"          pass: k2022#MS

Change (N)ame, (E)mail, or (O)kay/(Q)uit? 0
We need to generate a lot of random bytes. It is a good idea to perform
some other action (type on the keyboard, move the mouse, utilize the
disks) during the prime generation; this gives the random number
generator a better chance to gain enough entropy.
We need to generate a lot of random bytes. It is a good idea to perform
some other action (type on the keyboard, move the mouse, utilize the
disks) during the prime generation; this gives the random number
generator a better chance to gain enough entropy.
gpg: key 85135377F3FAF046 marked as ultimately trusted
gpg: directory '/home/pc/.gnupg/openpgp-revocs.d' created
gpg: revocation certificate stored as '/home/pc/.gnupg/openpgp-revocs.d/393D8BF4C891023A9F60416685135377F3FAF046.rev'
public and secret key created and signed.

pub   rsa3072 2022-07-07 [SC] [expires: 2024-07-06]
       393D8BF4C891023A9F60416685135377F3FAF046
uid           Marcin Sienkiewicz <mojEmail@gmail.com>
sub   rsa3072 2022-07-07 [E] [expires: 2024-07-06]

pc@osboxes:~$
```



Wyodrębniam oraz opcjonalnie importuję klucz:

```
gpg -a --output ~/.gnupg/Marcin_Sienkiewicz.gpg --export 'Marcin Sienkiewicz'
```

```
pc@osboxes:~$ gpg -a --output ~/.gnupg/Marcin_Sienkiewicz.gpg --export 'Marcin Si  
enkiewicz'  
pc@osboxes:~$ █
```

```
gpg --import ~/.gnupg/Marcin_Sienkiewicz.gpg
```

```
pc@osboxes:~$ gpg --import ~/.gnupg/Marcin_Sienkiewicz.gpg  
gpg: key 85135377F3FAF046: "Marcin Sienkiewicz <mojEmail@gmail.com>" not changed  
gpg: Total number processed: 1  
gpg: unchanged: 1  
pc@osboxes:~$ █
```

Jeszcze sprawdzam czy wyodrębnienie klucza się powiodło (nie było komunikatu o błędzie ale)...

```
ls .gnupg
```

```
pc@osboxes:~$ ls .gnupg  
Marcin_Sienkiewicz.gpg private-keys-v1.d pubring.kbx~  
openpgp-revocs.d pubring.kbx trustdb.gpg  
pc@osboxes:~$
```

Jak widać wyżej, klucz został utworzony oraz wyeksportowany.

Przygotowanie struktury katalogów.

```
mkdir -p ~/build/imagemagick/7.1.0
```

```
cd ~/build/imagemagick/7.1.0
```

```
pc@osboxes:~$ mkdir -p ~/build/imagemagick/7.1.0  
pc@osboxes:~$ cd build/imagemagick/7.1.0/  
pc@osboxes:~/build/imagemagick/7.1.0$ █
```

Ponieważ tarball ImageMagick mam już pobrany na dysk, kopiuję go do tego katalogu:

```
cp /home/pc/ImageMagick.tar.gz .
```

```
pc@osboxes:~/build/imagemagick/7.1.0$ cp /home/pc/ImageMagick.tar.gz .  
pc@osboxes:~/build/imagemagick/7.1.0$
```

W dalszych krokach użyty będzie **dh-make** który nie akceptuje wielkich liter, zatem za wczasu pozbywam się ich z nazwy tarball:

```
mv ImageMagick.tar.gz imagemagick.tar.gz
```

```
ls
```

```
pc@osboxes:~/build/imagemagick/7.1.0$ mv ImageMagick.tar.gz imagemagick.tar.gz  
pc@osboxes:~/build/imagemagick/7.1.0$ ls  
imagemagick.tar.gz  
pc@osboxes:~/build/imagemagick/7.1.0$ █
```


Rozpakowuję archiwum; ponieważ domyślnie zostanie ono rozpakowane do ImageMagick (czyli folderu zawierającego wielkie litery których mieć nie mogę), stosuję:

```
mkdir imagemagick-7.1.0-40 && tar -xvf imagemagick.tar.gz -C imagemagick-7.1.0-40
--strip-components=1
```

```
ls
```

```
cd imagemagick-7.1.0-40
```

```
ls
```

```
pc@osboxes:~/build/imagemagick/7.1.0$ mkdir imagemagick-7.1.0-40 && tar -xvf image
magick.tar.gz -C imagemagick-7.1.0-40 --strip-components=1
ImageMagick-7.1.0-40/coders/
ImageMagick-7.1.0-40/coders/aai.h
ImageMagick-7.1.0-40/coders/art.h
ImageMagick-7.1.0-40/coders/ashlar.h
ImageMagick-7.1.0-40/coders/avs.h
ImageMagick-7.1.0-40/coders/bgr.h
ImageMagick-7.1.0-40/coders/hmn.h
```

↓

```
ImageMagick-7.1.0-40/www/composite.html
ImageMagick-7.1.0-40/www/conjure.html
ImageMagick-7.1.0-40/www/connected-components.html
ImageMagick-7.1.0-40/www/contact.html
ImageMagick-7.1.0-40/www/convex-hull.html
ImageMagick-7.1.0-40/www/display.html
ImageMagick-7.1.0-40/www/download.html
ImageMagick-7.1.0-40/www/examples.html
ImageMagick-7.1.0-40/www/export.html
ImageMagick-7.1.0-40/www/fx.html
ImageMagick-7.1.0-40/www/history.html
ImageMagick-7.1.0-40/www/import.html
ImageMagick-7.1.0-40/www/jp2.html
pc@osboxes:~/build/imagemagick/7.1.0$ ls
imagemagick-7.1.0-40  imagemagick.tar.gz
pc@osboxes:~/build/imagemagick/7.1.0$ cd imagemagick-7.1.0-40/
```

```
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$ ls
aclocal.m4      images          MagickCore      QuickStart.txt
AUTHORS.txt     index.html     magick.sh.in    README.md
coders          Install-mac.txt Magickshr.opt    README.txt
common.shi.in  Install-unix.txt MagickWand       scripts
config         Install-vms.txt Makefile.am     tests
configure      Install-windows.txt Makefile.in     utilities
configure.ac   LICENSE       NEWS.txt        winpath.sh
filters        m4            NOTICE         www
ImageMagick.spec.in  Magick++      PerlMagick      -
```

Konwersja

Dokonuję konwersji zwykłego pakietu kodu źródłowego na taki, który jest sformatowany zgodnie z wymaganiami Polityki Debiana:

```
dh_make -e mojEmail@gmail.com -f ../imagemagick.tar.gz
```

```
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$ dh_make -e mojEmail@gmail.com
m -f ../imagemagick.tar.gz
Type of package: (single, indep, library, python)
[s/i/l/p]?
Maintainer Name      : unknown
Email-Address        : mojEmail@gmail.com
Date                 : Thu, 07 Jul 2022 04:59:56 -0400
Package Name         : imagemagick-7.1.0
Version              : 40
License              : blank
Package Type         : single
Are the details correct? [Y/n/q]
Done. Please edit the files in the debian/ subdirectory now.

pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$
```

Na pytania odpowiadam 's' oraz 'y'.

W rezultacie działania `dh_make` pojawił się folder **debian**

```
ls
```

```
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$ ls
aclocal.m4      filters          LICENSE          Makefile.in      tests
AUTHORS.txt     ImageMagick.spec.in  m4              NEWS.txt          utilities
coders          images           Magick++         NOTICE           winpath.sh
common.shi.in   index.html        MagickCore       PerlMagick        www
config          Install-mac.txt    magick.sh.in     QuickStart.txt
configure       Install-unix.txt   Magickshr.opt    README.md
configure.ac     Install-vms.txt    MagickWand       README.txt
debian          Install-windows.txt Makefile.am       scripts
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$
```

Pozwalamy systemowi aby sprawdził, jakich zależności będzie potrzebował mój pakiet (wykona konfigurację pakietu `imagemagick`).

```
dpkg-depcheck -d ./configure
```

```
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$ dpkg-depcheck -d ./configure
WARNING: tempfile is deprecated; consider using mktemp instead.
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking target system type... x86_64-pc-linux-gnu
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
```

↓

```

mailcap
libffi7:amd64
libfakeroot:amd64
libidn2-0:amd64
libgs9-common
libjpeg62-turbo:amd64
libgs9:amd64
libfontconfig1:amd64
libnettle8:amd64
libjbig0:amd64
libpaper1:amd64
libjbig2dec0:amd64
libmagic1:amd64
libhogweed6:amd64
libbrotli1:amd64
libfreetype6:amd64
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$ █

```

Rezultatem działania powyższej komendy jest między innymi lista zależności które to wpisuję do pliku **control**. Przechodzę zatem do niego i odpowiednio uzupełniam dodając podane przez **depcheck** zależności do sekcji **Build-Depends**, dodaję również **Maintainer** – imię i nazwisko z klucza gpg.

```

cd debian
nano control

```

```

Source: imagemagick-7.1.0
Section: unknown
Priority: optional
Maintainer: Marcin Sienkiewicz <mojEmail@gmail.com>
Build-Depends:
 debhelper-compat (= 13),
 autotools-dev,
 mawk,
 libopenjp2-7:amd64,
 libp11-kit0:amd64,
 liblcms2-2:amd64,
 libunistring2:amd64,
 libavahi-client3:amd64,
 pkg-config,
 fonts-droid-fallback,
 tzdata,
 libcups2:amd64,
 libavahi-common3:amd64,
 libgl2.0-0:amd64,
 libgnutls30:amd64,
 ghostscript,
 libpng16-16:amd64,
 libmagic-mgc,
 file,
 libtasn1-6:amd64,
 libdeflate0:amd64,
 libwebp6:amd64,
 libperl5.32:amd64,
 libtiff5:amd64,
 libijs-0.35:amd64,
 mailcap,
 libffi7:amd64,
 libfakeroot:amd64,

```

↓

```

libidn2-0:amd64,
libgs9-common,
libjpeg62-turbo:amd64,
libgs9:amd64,
libfontconfig1:amd64,
libnettle8:amd64,
libjbig0:amd64,
libpaper1:amd64,
libjbig2dec0:amd64,
libmagic1:amd64,
libhogweed6:amd64,
libbrotli1:amd64,
libfreetype6:amd64
Standards-Version: 4.5.1
Homepage: <insert the upstream URL, if relevant>
#Vcs-Browser: https://salsa.debian.org/debian/imagemagick-7.1.0
#Vcs-Git: https://salsa.debian.org/debian/imagemagick-7.1.0.git
Rules-Requires-Root: no

```

Do pliku **control** dodaję również skrócony oraz długi opis programu.

```

Standards-Version: 4.5.1
Homepage: <insert the upstream URL, if relevant>
#Vcs-Browser: https://salsa.debian.org/debian/imagemagick-7.1.0
#Vcs-Git: https://salsa.debian.org/debian/imagemagick-7.1.0.git
Rules-Requires-Root: no

Package: imagemagick-7.1.0
Architecture: any
Depends: ${shlibs:Depends}, ${misc:Depends}
Description: ImageMagick - create, edit, compose and convert images.
Use ImageMagick to create, edit, compose, or convert digital images. It can read>

```

Następnie upewniam się, że w pliku **changelog** zawarte są poprawne informacje, przede wszystkim adres email oraz imię i nazwisko (takie same jak w kluczu którym podpiszemy paczkę):

```
nano changelog
```

```

GNU nano 5.4                                changelog
imagemagick-7.1.0 (40-1) unstable; urgency=medium

* Initial release (Closes: #nnnn) <nnnn is the bug number of your ITP>

-- Marcin Sienkiewicz <mojEmail@gmail.com> Thu, 07 Jul 2022 04:59:56 -0400

```

Sprawdzam plik copyright, chcę użyć licencji GPL v2 zatem komentuję 2 linie:

```
nano copyright
```

```

GNU nano 5.4                                     copyright
Format: https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/
Upstream-Name: imagemagick-7.1.0
Upstream-Contact: <preferred name and address to reach the upstream project>
Source: <url://example.com>

Files: *
Copyright: <years> <put author's name and email here>
          <years> <likewise for another author>
License: <special license>
        <Put the license of the package here indented by 1 space>
        <This follows the format of Description: lines in control file>
        .
        <Including paragraphs>

# If you want to use GPL v2 or later for the /debian/* files use
# the following clauses, or change it to suit. Delete these two lines
# Files: debian/*
# Copyright: 2022 unknown <mojEmail@gmail.com>
License: GPL-2+
This package is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
.
[ Wrote 43 lines ]

```

Kolejny krok to:

Budowa pakietu

Wychodzę 'wyżej' z folderu 'debian' i przystępuję do budowy pakietu:

```

cd ..
dpkg-buildpackage -rfakeroot

```

...w czasie wykonywania tego polecenia poproszeni zostaniemy o hasło do klucza gpg. Warto mieć go na podorędziu gdyż zbyt długo zwłoka z wpisaniem go spowoduje niepodpisanie pakietu.

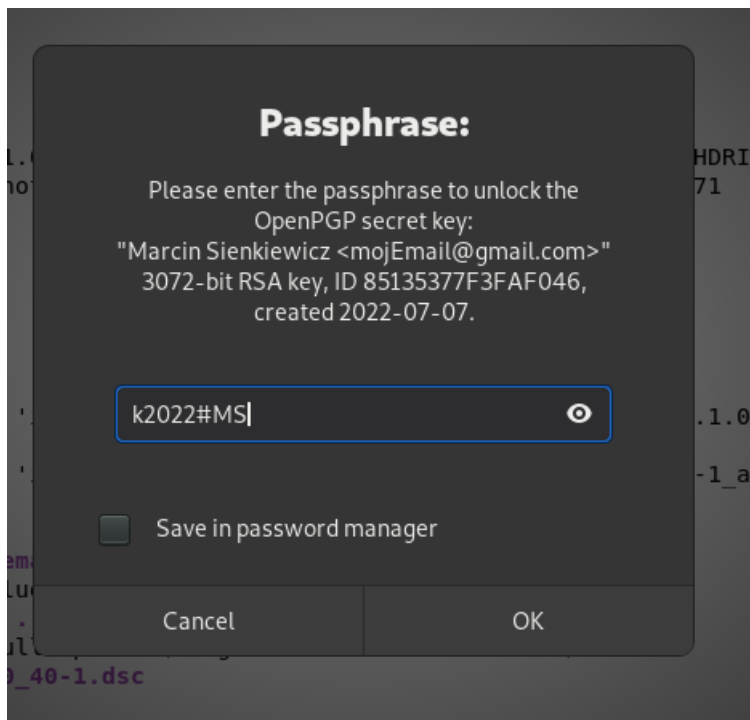
```

pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$ dpkg-buildpackage -rfakeroot
dpkg-buildpackage: info: source package imagemagick-7.1.0
dpkg-buildpackage: info: source version 40-1
dpkg-buildpackage: info: source distribution unstable
dpkg-buildpackage: info: source changed by Marcin Sienkiewicz <mojEmail@gmail.com>
dpkg-buildpackage: info: host architecture amd64
dpkg-source --before-build .
dpkg-source: clean
dh clean
dh_auto_clean
make -j4 distclean
make[1]: Entering directory '/home/pc/build/imagemagick/7.1.0/imagemagick-7.1.0-40'
test -z "" || rm -f

```

↓

podajemy hasło do klucza gpg



```
un_mussums
dh_builddeb
dpkg-deb: building package 'imagemagick-7.1.0-dbg' in '../imagemagick-7.1.0-dbg
sym_40-1_amd64.deb'.
dpkg-deb: building package 'imagemagick-7.1.0' in '../imagemagick-7.1.0_40-1_amd64
.deb'.
dpkg-genbuildinfo
dpkg-genchanges >../imagemagick-7.1.0_40-1_amd64.changes
dpkg-genchanges: info: including full source code in upload
dpkg-source --after-build .
dpkg-buildpackage: info: full upload (original source is included)
signfile imagemagick-7.1.0_40-1.dsc

signfile imagemagick-7.1.0_40-1_amd64.buildinfo

signfile imagemagick-7.1.0_40-1_amd64.changes
pc@osboxes:~/build/imagemagick/7.1.0/imagemagick-7.1.0-40$
```

Sukces! Pakiet został utworzony oraz podpisany!

Instalacja pakietu

Przystępuję do instalacji pakietu, przechodzę katalog 'wyżej':

```
cd ..
```

```
ls
```

i wykonuję instalację:

```
sudo dpkg -i imagemagick-7.1.0_40-1_amd64.deb
```

```
pc@osboxes:~/build/imagemagick/7.1.0$ sudo dpkg -i imagemagick-7.1.0_40-1_amd64.deb
[sudo] password for pc:
Selecting previously unselected package imagemagick-7.1.0.
(Reading database ... 155486 files and directories currently installed.)
Preparing to unpack imagemagick-7.1.0_40-1_amd64.deb ...
Unpacking imagemagick-7.1.0 (40-1) ...
Setting up imagemagick-7.1.0 (40-1) ...
Processing triggers for libc-bin (2.31-13+deb11u3) ...
Processing triggers for man-db (2.9.4-2) ...
pc@osboxes:~/build/imagemagick/7.1.0$
```

Weryfikacja instalacji.

Wyświetlam informację o wersji, jeśli zainstalowało się prawidłowo, będzie podana:

```
magick --version
```

```
pc@osboxes:~/build/imagemagick/7.1.0$ magick --version
Version: ImageMagick 7.1.0-40 beta Q16-HDRI x86_64 20210 https://imagemagick.org
Copyright: (C) 1999 ImageMagick Studio LLC
License: https://imagemagick.org/script/license.php
Features: Cipher DPC HDRI OpenMP(4.5)
Delegates (built-in):
Compiler: gcc (10.2)
pc@osboxes:~/build/imagemagick/7.1.0$
```

Wydaje się, że instalacja przebiegła prawidłowo.

Weryfikacja działania zainstalowanego pakietu.

Tym razem również (tak jak w przypadku zadania z kompilacji pakietu) sprawdzę działanie programu na bazie pliku graficznego **kot.bmp**

Plik wejściowy:



Przechodzę do katalogu domowego (w którym znajduje się ten plik) i tworzę kopię:

```
cd
cp kot.bmp nowy.bmp
```

```
pc@osboxes:~/build/imagemagick/7.1.0$ cd
pc@osboxes:~$ cp kot.bmp nowy.bmp
pc@osboxes:~$
```

Pamiętając instalację ze źródeł oraz błąd który wtedy wystąpił (a naprawienie którego opisane jest w dokumentacji ImageMagick), wykonuję dodatkowo:

```
sudo ldconfig /usr/local/lib
```

```
pc@osboxes:~$ sudo ldconfig /usr/local/lib
pc@osboxes:~$
```

Sprawdzenie działania programu.

W celu sprawdzenia działania programu, wykonam transformację obrazu polegającą na imitacji rysowania węglem drzewnym:

```
magick nowy.bmp -charcoal 2 przetworzony.bmp
```

```
pc@osboxes:~$ magick nowy.bmp -charcoal 2 przetworzony.bmp  
pc@osboxes:~$
```

Rezultat końcowy:



Podsumowanie i wnioski

Cały proces przebiegł bez żadnych problemów. Pakiet został utworzony, podpisany utworzonym kluczem oraz prawidłowo zainstalowany a program po instalacji działa tak jak powinien. Ponieważ program jest relatywnie mały, nawet najdłuższy etap czyli budowanie pakietu nie trwał zbyt długo – około dwóch minut. W przypadku niewielkich programów z niewielką liczbą zależności, cały proces nie stanowi problemu i gdyby przyszło mi wykonać cały proces ponownie nie byłoby to dla mnie wielki problem.