

# Budowanie pakietów



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## Co to jest?

Vim to wieloplatformowy klon edytora tekstu vi, napisany przez holenderskiego programistę Bramę Moolenaar. Należy do grupy wolnego oprogramowania o otwartym kodzie źródłowym. Pierwsza wersja została wydana w 1991 roku. Jest on znany z wielu swoich skrótów klawiszowych, które pozwalają na bardzo szybkie edytowanie plików, bez konieczności używania myszki.

## Instalacja oprogramowania ze źródeł

### Pobranie archiwum

Pobieramy odpowiedni plik z repozytorium Vim-a na githubie:

- `wget https://github.com/vim/vim/archive/refs/tags/v8.2.5106.tar.gz`

```
osboxes@osboxes:~$ cd Pobrane/
osboxes@osboxes:~/Pobrane$ vim
-bash: vim: command not found
osboxes@osboxes:~/Pobrane$ wget https://github.com/vim/vim/archive/refs/tags/v8.2.5106.tar.gz
--2022-06-16 07:03:23-- https://github.com/vim/vim/archive/refs/tags/v8.2.5106.tar.gz
Resolving github.com (github.com)... 140.82.121.4
Connecting to github.com (github.com)[140.82.121.4]:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://codeload.github.com/vim/vim/tar.gz/refs/tags/v8.2.5106 [following]
--2022-06-16 07:03:23-- https://codeload.github.com/vim/vim/tar.gz/refs/tags/v8.2.5106
Resolving codeload.github.com (codeload.github.com)... 140.82.121.10
Connecting to codeload.github.com (codeload.github.com)[140.82.121.10]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [application/x-gzip]
Saving to: 'v8.2.5106.tar.gz'

v8.2.5106.tar.gz           [          ] 15.75M  4.74MB/s   in 3.6s

2022-06-16 07:03:27 (4.39 MB/s) - 'v8.2.5106.tar.gz' saved [16511157]

osboxes@osboxes:~/Pobrane$
```

Należy wypakować archiwum:

- `tar -zxvf v8.2.5106.tar.gz`

```
osboxes@osboxes:~/Pobrane$ tar -zxvf v8.2.5106.tar.gz
vim-8.2.5106/
vim-8.2.5106/.appveyor.yml
vim-8.2.5106/.cirrus.yml
vim-8.2.5106/.codecov.yml
vim-8.2.5106/.coveralls.yml
vim-8.2.5106/.gitattributes
vim-8.2.5106/.github/
vim-8.2.5106/.github/CODEOWNERS
vim-8.2.5106/.github/FUNDING.yml

vim-8.2.5106/src/xd/Make_ming.mak
vim-8.2.5106/src/xd/Make_mvc.mak
vim-8.2.5106/src/xd/Make_vms.mms
vim-8.2.5106/src/xd/Makefile
vim-8.2.5106/src/xd/xd.c
vim-8.2.5106/tools/
vim-8.2.5106/tools/rename.bat
vim-8.2.5106/uninstall.txt
vim-8.2.5106/vimtutor.bat
vim-8.2.5106/vimtutor.com
osboxes@osboxes:~/Pobrane$ ls
aria2-1.36.0  aria2-1.36.0.tar.gz  v8.2.5106.tar.gz  vim-8.2.5106
osboxes@osboxes:~/Pobrane$ cd vim-8.2.5106/
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Uruchamiamy skrypt `configure`:

- `./configure`

Po jej wykonaniu dostajemy następujący błąd:

```
checking for tgetent in -ltermcap... no
checking for tgetent in -lcurses... no
no terminal library found
checking for tgetent()... configure: error: NOT FOUND!
You need to install a terminal library; for example ncurses.
On Linux that would be the libncurses-dev package.
Or specify the name of the library with --with-tlib.
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Po szybkim sprawdzeniu problemu w internecie, okazuje się, że brakuje biblioteki `ncurses-dev`. Trzeba ją doinstalować poleceniem:

- `sudo apt install libncurses5-dev libncursesw5-dev`

```
Preparing to unpack .../libncurses5-dev_6.1+20181013-2+deb10u2_i386.deb ...
Unpacking libncurses5-dev:i386 (6.1+20181013-2+deb10u2) ...
Selecting previously unselected package libncursesw5-dev:i386.
Preparing to unpack .../libncursesw5-dev_6.1+20181013-2+deb10u2_i386.deb ...
Unpacking libncursesw5-dev:i386 (6.1+20181013-2+deb10u2) ...
Setting up libncurses-dev:i386 (6.1+20181013-2+deb10u2) ...
Setting up libncursesw5-dev:i386 (6.1+20181013-2+deb10u2) ...
Setting up libncurses5-dev:i386 (6.1+20181013-2+deb10u2) ...
Processing triggers for man-db (2.8.5-2) ...
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Uruchamiamy ponownie skrypt `configure`. Tym razem zakończył się bez błędów.

```
osboxes@osboxes:~/Pobrane/vim-8.2.5106$ ./configure
configure: loading cache auto/config.cache
checking whether make sets $(MAKE)... yes
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking for gcc option to accept ISO C99... none needed
checking for dlsym()... yes
checking setjmp.h usability... yes
checking setjmp.h presence... yes
checking for setjmp.h... yes
checking for GCC 3 or later... yes
checking whether we need -D_FORTIFY_SOURCE=1... yes
checking whether we need to force -D_FILE_OFFSET_BITS=64... no
checking linker --as-needed support... yes
configure: updating cache auto/config.cache
configure: creating auto/config.status
config.status: creating auto/config.mk
config.status: creating auto/config.h
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Następnie uruchamiamy polecenie:

- `make -j2`

Początek:

```
osboxes@osboxes:~/Pobrane/vim-8.2.5106$ make -j2
Starting make in the src directory.
If there are problems, cd to the src directory and run make there
cd src && make first
make[1]: Entering directory '/home/osboxes/Pobrane/vim-8.2.5106/src'
/bin/sh install-sh -c -d objects
CC="gcc -Iproto -DHAVE_CONFIG_H" srcdir=. sh ./osdef.sh
touch objects/.dirstamp
creating auto/pathdef.c
gcc -c -I. -Ilibterm/include -Iproto -DHAVE_CONFIG_H -g -O2 -D_REENTRANT -U_FORTIFY_SOURCE -D_FORTIFY_SOURCE=1
-DINLINE="" -DVS_NPRINTF=vim_vsnprintf -DSNPRINTF=vim_snprintf -DIS_COMBINING_FUNCTION=utf_iscomposing_uint -DWCWIDTH_
FUNCTION=utf_uint2cells -o objects/vterm_encoding.o libterm/src/encoding.c
```

Koniec:

```
gcc -c -I. -Iproto -DHAVE_CONFIG_H -g -O2 -D_REENTRANT -U_FORTIFY_SOURCE -D_FORTIFY_SOURCE=1 version.c -o obj
ects/version.o
link.sh: $LINK_AS_NEEDED set to 'yes': invoking linker directly.
gcc -L/usr/local/lib -Wl,--as-needed -o vim objects/alloc.o objects/arabic.o objects/arglist.o objects/autocm
d.o objects/beval.o objects/buffer.o objects/change.o objects/blob.o objects/blowfish.o objects/cindent.o objects/client
server.o objects/clipboard.o objects/cmdexpand.o objects/cmdhist.o objects/crypt.o objects/crypt_zip.o objects/debugger.
o objects/dict.o objects/diff.o objects/digraph.o objects/drawline.o objects/drawscreen.o objects/edit.o objects/eval.o
objects/evalbuffer.o objects/evalfunc.o objects/evalvars.o objects/evalwindow.o objects/ex_cmds.o objects/ex_cmds2.o obj
ects/ex_docmd.o objects/ex_eval.o objects/ex_getln.o objects/fileio.o objects/filepath.o objects/findfile.o objects/floa
t.o objects/fold.o objects/getchar.o objects/gui_xim.o objects/hardcopy.o objects/hashtab.o objects/help.o objects/highl
ight.o objects/if_ctype.o objects/if_xcmdsrv.o objects/indent.o objects/insexpand.o objects/list.o objects/locale.o obj
ects/map.o objects/mark.o objects/match.o objects/mbyte.o objects/memline.o objects/menu.o objects/misc1.o objects/misc2
.o objects/mouse.o objects/move.o objects/normal.o objects/ops.o objects/option.o objects/optionstr.o objects/os_unix.o
objects/pathdef.o objects/popupmenu.o objects/popupwin.o objects/profiler.o objects/pty.o objects/quickfix.o objects/reg
exp.o objects/register.o objects/screen.o objects/scriptfile.o objects/search.o objects/session.o objects/sha256.o objec
ts/sign.o objects/sound.o objects/spell.o objects/spellfile.o objects/spellsuggest.o objects/strings.o objects/syntax.o
objects/tag.o objects/term.o objects/terminal.o objects/testing.o objects/textformat.o objects/textobject.o objects/text
prop.o objects/time.o objects/typval.o objects/ui.o objects/undo.o objects/usercmd.o objects/userfunc.o objects/version.
o objects/vim9cmds.o objects/vim9compile.o objects/vim9execute.o objects/vim9expr.o objects/vim9instr.o objects/vim9scri
pt.o objects/vim9type.o objects/viminfo.o objects/window.o objects/bufwrite.o objects/vterm_encoding.o objects/vterm_ke
yboard.o objects/vterm_mouse.o objects/vterm_parser.o objects/vterm_pen.o objects/vterm_screen.o objects/vterm_state.o o
bects/vterm_unicode.o objects/vterm_vterm.o objects/netbeans.o objects/job.o objects/channel.o objects/xdiffi.
o objects/xemitter.o objects/xprepare.o objects/xutils.o objects/xhistogram.o objects/xpatience.o objects/charset.o objects
/json.o objects/main.o objects/memfile.o objects/message.o -lm -ltinfo -ldl
link.sh: Linked fine
make[1]: Leaving directory '/home/osboxes/Pobrane/vim-8.2.5106/src'
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Z wielką chęcią bym uruchomił polecenie **make check**, jednak wygląda na to, że w tym pakiecie nie ma takiej możliwości.

```
osboxes@osboxes:~/Pobrane/vim-8.2.5106$ make -j2 check
make: *** No rule to make target 'check'. Stop.
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Instalujemy program poleceniem:

- **make install**

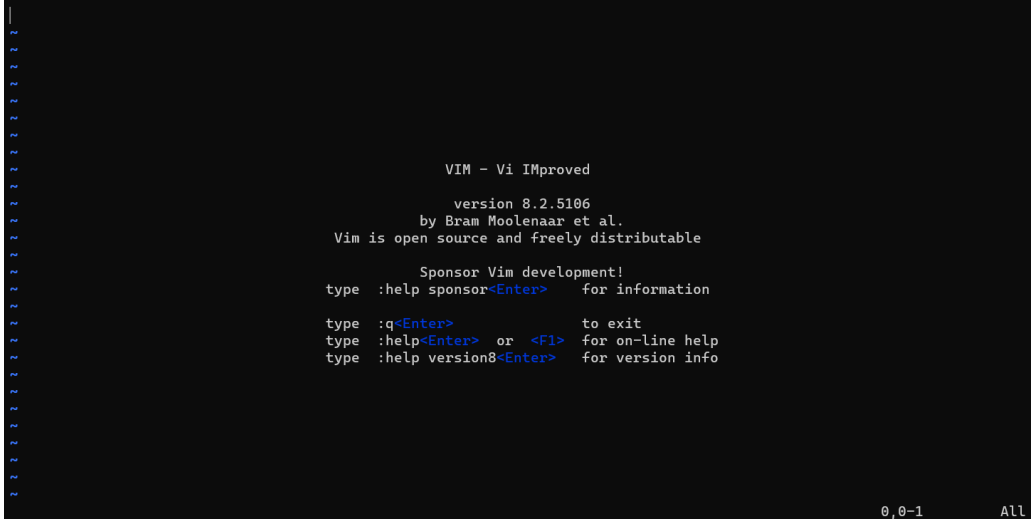
```
osboxes@osboxes:~/Pobrane/vim-8.2.5106$ sudo make install
[sudo] password for osboxes:
Starting make in the src directory.
If there are problems, cd to the src directory and run make there
cd src && make install
make[1]: Entering directory '/home/osboxes/Pobrane/vim-8.2.5106/src'
if test -f /usr/local/bin/vim; then \
  mv -f /usr/local/bin/vim /usr/local/bin/vim.rm; \
  rm -f /usr/local/bin/vim.rm; \
fi
cp vim /usr/local/bin
strip /usr/local/bin/vim
chmod 755 /usr/local/bin/vim
```

```
if test -f po/vim.desktop -a -f po/gvim.desktop; then \
  cp po/vim.desktop po/gvim.desktop \
  /usr/local/share/applications; \
else \
  cp ../runtime/vim.desktop \
  ../runtime/gvim.desktop \
  /usr/local/share/applications; \
fi; \
if test -z "" -a -x ""; then \
  -q /usr/local/share/applications; \
fi \
fi
make[1]: Leaving directory '/home/osboxes/Pobrane/vim-8.2.5106/src'
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Podobnie jak z **make check** sytuacja ma się z **make install check**. Wykonujemy polecenie **make clean**:

```
osboxes@osboxes:~/Pobrane/vim-8.2.5106$ make clean
Starting make in the src directory.
If there are problems, cd to the src directory and run make there
cd src && make clean
make[1]: Entering directory '/home/osboxes/Pobrane/vim-8.2.5106/src'
cd testdir; make -f Makefile clean
make[2]: Entering directory '/home/osboxes/Pobrane/vim-8.2.5106/src/testdir'
rm -rf *.out *.failed *.res *.rej *.orig XfakeHOME Xdir1 Xfind
if test -d po; then \
  cd po; make prefix=/usr/local clean; \
fi
make[2]: Entering directory '/home/osboxes/Pobrane/vim-8.2.5106/src/po'
rm -f *.ck
rm -f core core.* *.old.po *.mo *.pot sjisccorr
rm -f LINGUAS vim.desktop gvim.desktop tmp.*desktop
make[2]: Leaving directory '/home/osboxes/Pobrane/vim-8.2.5106/src/po'
make[1]: Leaving directory '/home/osboxes/Pobrane/vim-8.2.5106/src'
make[1]: Entering directory '/home/osboxes/Pobrane/vim-8.2.5106/runtime/indent'
rm -f testdir/*.fail testdir/*.out
make[1]: Leaving directory '/home/osboxes/Pobrane/vim-8.2.5106/runtime/indent'
osboxes@osboxes:~/Pobrane/vim-8.2.5106$ vim
osboxes@osboxes:~/Pobrane/vim-8.2.5106$
```

Program Vim został zainstalowany poprawnie.

A screenshot of the Vim editor's startup screen. The background is black with white text. The text is centered and reads: "VIM - Vi IMproved", "version 8.2.5106", "by Bram Moolenaar et al.", "Vim is open source and freely distributable". Below this, it says "Sponsor Vim development!" followed by three lines of instructions: "type :help sponsor<Enter> for information", "type :q<Enter> to exit", and "type :help<Enter> or <F1> for on-line help". The last line is "type :help version8<Enter> for version info". In the bottom right corner, it shows "0,0-1" and "All".

```
VIM - Vi IMproved
version 8.2.5106
by Bram Moolenaar et al.
Vim is open source and freely distributable

Sponsor Vim development!
type :help sponsor<Enter> for information
type :q<Enter> to exit
type :help<Enter> or <F1> for on-line help
type :help version8<Enter> for version info

0,0-1 All
```

## Wnioski

Instalacja pakietu nie była zbyt trudna oraz nie zajęła dużo czasu. Zaletą instalacji paczki tą metodą jest fakt, że mogę zainstalować najnowszą wersję, której jeszcze nie ma na oficjalnych repozytoriach apt.

## Tworzenie pakietu deb

Na początku musimy utworzyć nowy klucz poleceniem:

- `gpg --gen-key`

```
osboxes@osboxes:~$ gpg --gen-key
gpg (GnuPG) 2.2.12; Copyright (C) 2018 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: Filip Reka
Email address: filip.reka@gatesfoundation.org
You selected this USER-ID:
"Filip Reka <filip.reka@gatesfoundation.org>"

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 1A53334A04152B22 marked as ultimately trusted
gpg: revocation certificate stored as '/home/osboxes/.gnupg/openpgp-revocs.d/ADF7EFFC288A8D5D4CD4F5D11A53334A04152B22.rev'
public and secret key created and signed.

pub  rsa3072 2022-06-16 [SC] [expires: 2024-06-15]
    ADF7EFFC288A8D5D4CD4F5D11A53334A04152B22
uid                Filip Reka <filip.reka@gatesfoundation.org>
sub  rsa3072 2022-06-16 [E] [expires: 2024-06-15]
osboxes@osboxes:~$ |
```

Eksportujemy wygenerowany klucz poleceniem:

- `gpg -a --output ~/.gnupg/Filip_Reka.gpg --export 'Filip Reka'`

Instalujemy pakiety pomocne przy tworzeni swoich pakietów. (Tutaj nie będę wstawiał screanów, ponieważ robiłem już to na zajęciach razem z Panem, a jest to trywialny krok.)

- `sudo apt install dh-make debhelper devscripts fakeroot xutils pbuilder lintian`

Tworzymy folder i następnie przenosimy pobrane archiwum, oraz rozpakowujemy je:

- `mkdir -p build/vim/8.2.5106`
- `cd build/vim/8.2.5106/`
- `cp ~/Pobrane/v8.2.5106.tar.gz .`
- `tar -zxvf v8.2.5106.tar.gz`

```
osboxes@osboxes:~$ mkdir -p build/vim/8.2.5106
osboxes@osboxes:~$ cd build/vim/8.2.5106/
osboxes@osboxes:~/build/vim/8.2.5106$ cp ~/Pobrane/
aria2-1.36.0/ aria2-1.36.0.tar.gz vim-8.2.5106/
osboxes@osboxes:~/build/vim/8.2.5106$ cp ~/Pobrane/v8.2.5106.tar.gz .
osboxes@osboxes:~/build/vim/8.2.5106$ tar -zxvf v8.2.5106.tar.gz |
```

```
vim-8.2.5106/src/xxd/Makefile
vim-8.2.5106/src/xxd/xxd.c
vim-8.2.5106/tools/
vim-8.2.5106/tools/rename.bat
vim-8.2.5106/uninstall.txt
vim-8.2.5106/vimtutor.bat
vim-8.2.5106/vimtutor.com
osboxes@osboxes:~/build/vim/8.2.5106$ ls
v8.2.5106.tar.gz vim-8.2.5106
```

Używamy polecenia :

- `dh_make -e filip.reka@gatesfoundation.org -f ../v8.2.5106.tar.gz`

```
osboxes@osboxes:~/build/vim/8.2.5106$ cd vim-8.2.5106/
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$ ls
ci      CONTRIBUTING.md  LICENSE  nsis      READMEdir  README.txt  runtime  tools      vimtutor.bat
configure  Filelist      Makefile  pixmaps  README.md  README_VIM9.md  src      uninstall.txt  vimtutor.com
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$ dh_make -e filip.reka@gatesfoundation.org -f ../v8.2.5106.tar.gz
Type of package: (single, indep, library, python)
[s/i/l/p]?
Please respond with one of the following: s,i,l,p
Type of package: (single, indep, library, python)
[s/i/l/p]?
Maintainer Name      : osboxes.org
Email-Address        : filip.reka@gatesfoundation.org
Date                 : Thu, 16 Jun 2022 08:43:46 -0400
Package Name         : vim
Version              : 8.2.5106
License              : blank
Package Type         : single
Are the details correct? [Y/n/q]
Please respond with "yes", "no" or "quit" (or "y", "n" or "q")
Please respond with "yes", "no" or "quit" (or "y", "n" or "q")
Done. Please edit the files in the debian/ subdirectory now.
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$ |
```

Następnie, aby ustalić zależności, wykonujemy polecenie:

- `dpkg-depcheck -d ./configure`

```
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$ dpkg-depcheck -d ./configure
configure: creating cache auto/config.cache
checking whether make sets $(MAKE)... yes
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
```

```
libcroco3:i386
tzdata
perl-modules-5.28
mime-support
pkg-config
libc6:i386
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$ |
```

Za końcu wyniku, dostaliśmy nazwy pakietów, które teraz należy wpisać w plik `control` i są to: `file`, `libuchardet0:i386`, `libxml2:i386`, `mawk`, `libncurses-dev:i386`, `libunistring2:i386`, `libseccomp2:i386`, `man-db`, `libperl5.28:i386`, `manpages-dev`, `libmagic-mgc`, `libglib2.0-0:i386`, `gettext`, `libpipeline1:i386`, `libgdbm6:i386`, `groff-base`, `libmagic1:i386`, `libcroco3:i386`, `tzdata`, `perl-modules-5.28`, `mime-support`, `pkg-config`, `libc6:i386`.

Po edycji plik wygląda w następujący sposób:

```
Source: vim
Section: unknown
Priority: optional
Maintainer: osboxes.org <filip.reka@gatesfoundation.org>
Build-Depends: debhelper (>= 11), autotools-dev, file, libuchardet0:i386, libxml2:i386, mawk, libncurses-dev:i386, libunistring2:i386, libseccomp2:i386, man-db, libperl5.28:i386, manpages-dev, libmagic-mgc, libglib2.0-0:i386, gettext, libpeline1:i386, libgdbm6:i386, groff-base, libmagic1:i386, libcroc3:i386, tzdata, perl-modules-5.28, mime-support, pkg-config, libicu63:i386
Standards-Version: 4.1.3
Homepage: Insert the upstream URL, if relevant
#Vcs-Browser: https://salsa.debian.org/debian/vim
#Vcs-Git: https://salsa.debian.org/debian/vim.git

Package: vim
Architecture: any
Depends: ${shlibs:Depends}, ${misc:Depends}
Description: bardzo fajny edytor tekstowy
Vim is a highly configurable text editor built to make creating and changing any kind of text very efficient. It is included as "vi" with most UNIX systems and with Apple OS X.
~
```

Aby użyć licencji GPL-2 musimy zakomentować dwie linijki w pliku **debian/copyright** jak pokazano na obrazku poniżej:

```
# 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 osboxes.org <filip.reka@gatesfoundation.org>
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.
```

Uruchamiamy polecenie:

- **dpkg-buildpackage -rfakeroot**

Niestety kończy się ono u mnie błędem:

```
dpkg-source: info: using source format '3.0 (quilt)'
dpkg-source: info: building vim using existing ./vim-8.2.5106.orig.tar.gz
dpkg-source: warning: newly created empty file 'src/auto/config.h' will not be represented in diff
dpkg-source: info: local changes detected, the modified files are:
vim-8.2.5106/src/auto/config.mk
dpkg-source: info: you can integrate the local changes with dpkg-source --commit
dpkg-source: error: aborting due to unexpected upstream changes, see /tmp/vim-8.2.5106-1.diff.MHCtF5
dpkg-buildpackage: error: dpkg-source -b . subprocess returned exit status 2
```

Jednym z proponowanych rozwiązań, które udało mi się znaleźć jest zmiana w pliku **debian/source/format** z **3.0 (quilt)** na **3.0 (native)**.

Niestety to nie było to.

```
dpkg-source: error: can't build with source format '3.0 (native)': native package version may not have a revision
dpkg-buildpackage: error: dpkg-source -b . subprocess returned exit status 255
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$
```

Kolejny pomysł to użycie komendy **dpkg-source --commit**.

```
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$ dpkg-source --commit
dpkg-source: warning: newly created empty file 'src/auto/config.h' will not be represented in diff
dpkg-source: info: local changes detected, the modified files are:
vim-8.2.5106/src/auto/config.mk
Enter the desired patch name: proszeniechdziala

Select an editor. To change later, run 'select-editor'.
 1. /bin/nano          <---- easiest
 2. /usr/bin/vim.tiny

Choose 1-2 [1]: 1
dpkg-source: info: local changes have been recorded in a new patch: vim-8.2.5106/debian/patches/proszeniechdziala
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$
```



Komenda rozwiązała ten problem, jednak teraz pojawił się nowy:

```
dpkg-source: info: building vim in vim_8.2.5106-1.dsc
debian/rules build
dh build
dh_update_autotools_config
dh_autoconf
dh_auto_configure
./configure --build=i686-linux-gnu --prefix=/usr --includedir=${prefix}/include --mandir=${prefix}/share/man --infodir=${prefix}/share/info --sysconfdir=/etc --localstatedir=/var --disable-silent-rules --libdir=${prefix}/lib/i386-linux-gnu --libexecdir=${prefix}/lib/i386-linux-gnu --runstatedir=/run --disable-maintainer-mode --disable-dependency-tracking
configure: error: unrecognized option: '--runstatedir=/run'
Try 'auto/configure --help' for more information
dh_auto_configure: ./configure --build=i686-linux-gnu --prefix=/usr --includedir=${prefix}/include --mandir=${prefix}/share/man --infodir=${prefix}/share/info --sysconfdir=/etc --localstatedir=/var --disable-silent-rules --libdir=${prefix}/lib/i386-linux-gnu --libexecdir=${prefix}/lib/i386-linux-gnu --runstatedir=/run --disable-maintainer-mode --disable-dependency-tracking returned exit code 1
make: *** [debian/rules:18: build] Error 2
dpkg-buildpackage: error: debian/rules build subprocess returned exit status 2
osboxes@osboxes:~/build/vim/8.2.5106/vim-8.2.5106$
```

Na razie uznałem że nie będę zajmował się Vim-em tylko spróbuję coś innego. Traf padł na Python w wersji 3.10.5.

Ponownie wykonałem wszystkie te same polecenia co w vimie. I tym razem przy poleceniu **dpkg-buildpackage -rfakeroot** wyskoczył błąd.

```
make[1]: Leaving directory '/home/osboxes/build/python3/python-3.10.5'
dh_clean
dpkg-source -b .
dpkg-source: info: using source format '3.0 (quilt)'
dpkg-source: info: building python using existing ./python_3.10.5.orig.tar.xz
dpkg-source: info: building python in python_3.10.5-1.debian.tar.xz
dpkg-source: info: building python in python_3.10.5-1.dsc
debian/rules build
dh build
dh_update_autotools_config
dh_autoconf
configure.ac:18: error: possibly undefined macro: AC_MSG_ERROR
If this token and others are legitimate, please use m4_pattern_allow.
See the Autoconf documentation.
autoreconf: /usr/bin/autoreconf failed with exit status: 1
dh_autoconf: autoreconf -f -i returned exit code 1
make: *** [debian/rules:18: build] Error 2
dpkg-buildpackage: error: debian/rules build subprocess returned exit status 2
osboxes@osboxes:~/build/python3/python-3.10.5$
```

Znalazłem potencjalne rozwiązanie – instalacja pakietu **pkg-config**.

Rozwiązało to problem, jednak pojawił się kolejny błąd, tym razem z wywołaniem pliku pythonowego. Próbowałem jeszcze z kilkoma innymi programami, takimi jak git czy perl, jednak za każdym razem pokazywały się błędy, których nie byłem w stanie rozwiązać. Poza posługiwaniem się nagraniem z zajęć, aby się upewnić, korzystałem z tego poradnika, który powtarzał te same kroki.

Po wielu walkach, oraz aby nie zostawić Pana bez niczego, uznałem że chociaż pokażę, że da się zrobić jakikolwiek pakiet, dlatego następny krok pokażę na przykładzie programu z zajęć.

Powtórzyłem te same kroki jak dla pakietu Vim.

Niestety wystąpił u mnie ten sam błąd jak podczas zajęć z brakiem klucza prywatnego.

```
dh_md5sums
dh_builddeb
dpkg-deb: building package 'aria2-dbgSYM' in '../aria2-dbgSYM_1.36.0-1_i386.deb'.
dpkg-deb: building package 'aria2' in '../aria2_1.36.0-1_i386.deb'.
dpkg-genbuildinfo
dpkg-genchanges -> ../aria2_1.36.0-1_i386.changes
dpkg-genchanges: info: including full source code in upload
dpkg-source --after-build .
dpkg-buildpackage: info: full upload (original source is included)
signfile aria2_1.36.0-1.dsc
gpg: skipped "osboxes.org <filip.reka@gatesfoundation.org>": No secret key
gpg: dpkg-sign.vA8g2yxi/aria2_1.36.0-1.dsc: clear-sign failed: No secret key
```

Pomimo tego udało się utworzyć plik `.deb`.

Sprawdzałem we wszystkich miejscach i mail został podany poprawnie.

- wynik polecenia `gpg --list-keys`

```
osboxes@osboxes:~/build/aria2/1.36.0/aria2-1.36.0$ gpg --list-key
/home/osboxes/.gnupg/pubring.kbx
-----
pub   rsa3072 2022-06-16 [SC] [expires: 2024-06-15]
      ADF7E9FC288A8D5D4CD4F5D11A53334A04152B22
uid   [ultimate] Filip Reka <filip.reka@gatesfoundation.org>
sub   rsa3072 2022-06-16 [E] [expires: 2024-06-15]
```

- wewnątrz pliku `debian/changelog`

```
aria2 (1.36.0-1) unstable; urgency=medium

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

-- osboxes.org <filip.reka@gatesfoundation.org> Thu, 16 Jun 2022 14:58:14 -0400
```

Teraz jedyne co nam zostało to zainstalowanie zbudowanego pakietu i sprawdzenie czy uruchamia się poprawnie.

- `sudo dpkg -i aria2_1.36.0-1_i386.deb`

```
osboxes@osboxes:~/build/aria2/1.36.0/aria2-1.36.0$ cd ..
osboxes@osboxes:~/build/aria2/1.36.0$ ls
aria2_1.36.0          aria2_1.36.0-1_i386.buildinfo  aria2_1.36.0.orig.tar.gz
aria2_1.36.0-1.debian.tar.xz  aria2_1.36.0-1_i386.changes  aria2_1.36.0.tar.gz
aria2_1.36.0-1.dsc          aria2_1.36.0-1_i386.deb      aria2-dbgSYM_1.36.0-1_i386.deb
osboxes@osboxes:~/build/aria2/1.36.0$ sudo dpkg -i aria2_1.36.0-1_i386.deb
[sudo] password for osboxes:
Selecting previously unselected package aria2.
(Reading database ... 61245 files and directories currently installed.)
Preparing to unpack aria2_1.36.0-1_i386.deb ...
Unpacking aria2 (1.36.0-1) ...
Setting up aria2 (1.36.0-1) ...
Processing triggers for man-db (2.8.5-2) ...
osboxes@osboxes:~/build/aria2/1.36.0$ aria2c
Specify at least one URL.
Usage: aria2c [OPTIONS] [URI | MAGNET | TORRENT_FILE | METALINK_FILE]...
See 'aria2c -h'.
osboxes@osboxes:~/build/aria2/1.36.0$ |
```

Jak widać wszystko działa poprawnie pomimo braku podpisu.

## Wnioski

Wnioski są takie że mam trochę dość budowania pakietów. Przysporzyło mi to zdecydowanie więcej problemów niż spodziewałem się po pierwszej części zadania, która została wykonana dość sprawnie. Spędziłem na tym kroku zdecydowanie więcej czasu, niż mógłby wskazywać raport. Jest to zadanie długotrwałe ze względu czas wykonywania się komend `dpkg-depcheck -d ./configure` oraz `dpkg-buildpackage -rfakeroot`. Pierwsza część jest również w moim odczuciu przydatniejsza, ponieważ skoro jestem w stanie zainstalować oprogramowanie ze źródeł to nie będę musiał tworzyć do tego paczki. Nie mniej jednak jest to umiejętność, którą każdy użytkownik Linux-a powinien posiadać.