

How to build a Debian GNU/Linux Package (rdesktop 1.3.1 backport for "woody" on alpha)

For an old Digital/Compaq/HP Alphaserver 1000A 4/266 running Debian GNU/Linux 3.0 I've compiled the program "[rdesktop](#)" for accessing a Microsoft Windows 2000 terminal server. A few days later I think about building a debian package of my installation. I googled around and I found no reasonable documentation on doing this for a more complicated example. As a result of my efforts you can read this short manual. Relax and enjoy!

1. Perform the usual ./configure; make;... tasks. I won't describe them. As a hint I used to install my home build binaries in the /usr/local/ branch.
2. Now we have to retrieve the debian packages which rdesktop is linked against. There is a small bash shell script **fdp**" (find debian package) for doing this you will find it at the end of this page. If I run this script I've got the following information on my alpha system:

```
# ./fdp '/usr/local/bin/rdesktop'
/usr/local/bin/rdesktop is linked against:
Package: libc6.1
Version: 2.2.5-11.5

Package: libssl0.9.6
Version: 0.9.6c-2.woody.6

Package: xlibs
Version: 4.1.0-16woody3

#
```

3. At this step we have to identify the files rdesktop needs to execute succesfully. I found the information delivered by the "**Makefile**" would do the job:
 - o rdesktop (executable) resides in /usr/local/bin/
 - o rdesktop.1 (man page) resides in /usr/local/man/man1/
 - o The various keymap files resides in /usr/local/share/rdesktop/keymaps/
4. Now we can build the debian tree in our home directory. I created a directory "newpackages" including the needed subdirectories:

```
├─ rdesktop.woody.1.3.1
│   └─ DEBIAN
├─ usr
│   └─ local
│       ├── bin
│       ├── man
│       │   └─ man1
│       ├── share
│       └─ rdesktop
│           └─ keymaps
```

Copy the desired files into the created directories. All names are case sensitive! Our package will be named "**rdesktop.woody.1.3.1.deb**" and we must have a look onto the file permissions. If this is done it looks like the following:

```
hostname:/home/ickstadt/newpackages# ls -la -R
.:
total 104
drwxr-xr-x  3 ickstadt ickstadt  4096 Mar 30 10:26 .
drwxr-xr-x  7 ickstadt ickstadt  4096 Mar 30 09:22 ..
drwxr-xr-x  4 ickstadt ickstadt  4096 Mar 30 09:22 rdesktop.woody.1.3.1
-rw-r--r--  1 root    root      86266 Mar 30 10:26 rdesktop.woody.1.3.1.deb

./rdesktop.woody.1.3.1:
total 16
drwxr-xr-x  4 ickstadt ickstadt  4096 Mar 30 09:22 .
drwxr-xr-x  3 ickstadt ickstadt  4096 Mar 30 10:26 ..
drwxr-xr-x  2 ickstadt ickstadt  4096 Mar 30 10:23 DEBIAN
drwxr-xr-x  3 root    root      4096 Mar 30 09:22 usr
```

```

./rdesktop.woody.1.3.1/DEBIAN:
total 12
drwxr-xr-x  2 ickstadt ickstadt  4096 Mar 30 10:23 .
drwxr-xr-x  4 ickstadt ickstadt  4096 Mar 30 09:22 ..
-rwxr-xr-x  1 root    staff    519 Mar 30 10:26 control

./rdesktop.woody.1.3.1/usr:
total 12
drwxr-xr-x  3 root    root    4096 Mar 30 09:22 .
drwxr-xr-x  4 ickstadt ickstadt  4096 Mar 30 09:22 ..
drwxrwsr-x  5 root    staff    4096 Mar 30 09:22 local

./rdesktop.woody.1.3.1/usr/local:
total 20
drwxrwsr-x  5 root    staff    4096 Mar 30 09:22 .
drwxr-xr-x  3 root    root    4096 Mar 30 09:22 ..
drwxrwsr-x  2 root    staff    4096 Mar 30 09:54 bin
drwxrwsr-x  3 root    staff    4096 Mar 30 09:51 man
drwxrwsr-x  3 root    staff    4096 Mar 30 09:22 share

./rdesktop.woody.1.3.1/usr/local/bin:
total 176
drwxrwsr-x  2 root    staff    4096 Mar 30 09:54 .
drwxrwsr-x  5 root    staff    4096 Mar 30 09:22 ..
-rwxr-xr-x  1 root    staff    224944 Mar 22 11:51 rdesktop

./rdesktop.woody.1.3.1/usr/local/man:
total 12
drwxrwsr-x  3 root    staff    4096 Mar 30 09:51 .
drwxrwsr-x  5 root    staff    4096 Mar 30 09:22 ..
drwxr-sr-x  2 root    staff    4096 Mar 30 09:53 man1

./rdesktop.woody.1.3.1/usr/local/man/man1:
total 16
drwxr-sr-x  2 root    staff    4096 Mar 30 09:53 .
drwxrwsr-x  3 root    staff    4096 Mar 30 09:51 ..
-rw-r--r--  1 root    staff    4351 Mar 22 11:51 rdesktop.1

./rdesktop.woody.1.3.1/usr/local/share:
total 12
drwxrwsr-x  3 root    staff    4096 Mar 30 09:22 .
drwxrwsr-x  5 root    staff    4096 Mar 30 09:22 ..
drwxr-sr-x  3 root    staff    4096 Mar 30 09:22 rdesktop

./rdesktop.woody.1.3.1/usr/local/share/rdesktop:
total 12
drwxr-sr-x  3 root    staff    4096 Mar 30 09:22 .
drwxrwsr-x  3 root    staff    4096 Mar 30 09:22 ..
drwxr-sr-x  2 root    staff    4096 Mar 30 09:55 keymaps

./rdesktop.woody.1.3.1/usr/local/share/rdesktop/keymaps:
total 132
drwxr-sr-x  2 root    staff    4096 Mar 30 09:55 .
drwxr-sr-x  3 root    staff    4096 Mar 30 09:22 ..
-rw-r--r--  1 root    staff    2239 Mar 22 11:51 ar
-rw-r--r--  1 root    staff    2085 Mar 22 11:51 common
-rw-r--r--  1 root    staff    2576 Mar 22 11:51 da
-rw-r--r--  1 root    staff    2467 Mar 22 11:51 de
-rw-r--r--  1 root    staff    2541 Mar 22 11:51 de-ch
-rw-r--r--  1 root    staff    2581 Mar 22 11:51 en-gb
-rw-r--r--  1 root    staff    609 Mar 22 11:51 en-us
-rw-r--r--  1 root    staff    2236 Mar 22 11:51 es
-rw-r--r--  1 root    staff    2685 Mar 22 11:51 fi
-rw-r--r--  1 root    staff    907 Mar 22 11:51 fo
-rw-r--r--  1 root    staff    2588 Mar 22 11:51 fr

```

```
-rw-r--r-- 1 root staff 2876 Mar 22 11:51 fr-be
-rw-r--r-- 1 root staff 934 Mar 22 11:51 fr-ca
-rw-r--r-- 1 root staff 2471 Mar 22 11:51 fr-ch
-rw-r--r-- 1 root staff 2699 Mar 22 11:51 hr
-rw-r--r-- 1 root staff 1866 Mar 22 11:51 hu
-rw-r--r-- 1 root staff 2462 Mar 22 11:51 it
-rw-r--r-- 1 root staff 2034 Mar 22 11:51 ja
-rw-r--r-- 1 root staff 1096 Mar 22 11:51 lt
-rw-r--r-- 1 root staff 2840 Mar 22 11:51 lv
-rw-r--r-- 1 root staff 2366 Mar 22 11:51 mk
-rw-r--r-- 1 root staff 298 Mar 22 11:51 modifiers
-rw-r--r-- 1 root staff 2576 Mar 22 11:51 no
-rw-r--r-- 1 root staff 2672 Mar 22 11:51 pl
-rw-r--r-- 1 root staff 2450 Mar 22 11:51 pt
-rw-r--r-- 1 root staff 1354 Mar 22 11:51 pt-br
-rw-r--r-- 1 root staff 2554 Mar 22 11:51 ru
-rw-r--r-- 1 root staff 2293 Mar 22 11:51 sl
-rw-r--r-- 1 root staff 999 Mar 22 11:51 sv
-rw-r--r-- 1 root staff 3123 Mar 22 11:51 th
-rw-r--r-- 1 root staff 2649 Mar 22 11:51 tr
hostname:/home/ickstadt/newpackages#
```

5. Hmm, there is a file called `"/rdesktop.woody.1.3.1/DEBIAN/control"` what can it be? The answer is easy it is a plain text file full of information about the entire package. This file is mandatory and you will retrieve something interesting about it by typing `"man 5 deb-control"` on the shell. The content of our control file looks like:

```
Package: rdesktop
Version: 1.3.1
Section: x11
Priority: optional
Architecture: alpha
Depends: libc6.1 (>= 2.2.5-11.5), libssl0.9.6 (>= 0.9.6c-2), xlibs (>= 4.1.0-16)
Maintainer: Frank Ickstadt <my.email@address.tld>
Description: RDP client for Windows NT/2000 Terminal Server
 rdesktop is an open source client for Windows NT/2000 Terminal
 Server, capable of natively speaking its Remote Desktop Protocol
 (RDP) in order to present the user's NT/2000 desktop. Unlike
 Citrix ICA, no server extensions are required.
```

As you can see we use the data given from our `fdp` script to declare the dependencies. The description is gathered from the `rdesktop` web site. Beware: The blank at the beginning of the last four lines are not any kind of typos they have to be the first character in the lines!

6. Now we are ready to build our first debian package and `"dpkg-deb --build"` creates the final stuff:

```
hostname:/home/ickstadt/newpackages# dpkg-deb --build rdesktop.woody.1.3.1
dpkg-deb: building package `rdesktop' in `rdesktop.woody.1.3.1.deb'.
```

7. Just before reaching the end we make some tests to check the newly created package:
- o First we check the content of the package:

```
hostname:/home/ickstadt/newpackages# dpkg-deb --contents rdesktop.woody.1.3.1.deb
drwxr-xr-x ickstadt/ickstadt 0 2004-03-30 09:22:47 ./
drwxr-xr-x root/root 0 2004-03-30 09:22:30 ./usr/
drwxrwsr-x root/staff 0 2004-03-30 09:22:30 ./usr/local/
drwxrwsr-x root/staff 0 2004-03-30 09:54:15 ./usr/local/bin/
-rwxr-xr-x root/staff 224944 2004-03-22 11:51:54 ./usr/local/bin/rdesktop
drwxrwsr-x root/staff 0 2004-03-30 09:51:23 ./usr/local/man/
drwxr-sr-x root/staff 0 2004-03-30 09:53:11 ./usr/local/man/man1/
-rw-r--r-- root/staff 4351 2004-03-22 11:51:54 ./usr/local/man/man1/rdesktop.1
drwxrwsr-x root/staff 0 2004-03-30 09:22:30 ./usr/local/share/
```

```
drwxr-sr-x root/staff    0 2004-03-30 09:22:30 ./usr/local/share/rdesktop/
drwxr-sr-x root/staff    0 2004-03-30 09:55:43 ./usr/local/share/rdesktop/keymaps/
-rw-r--r-- root/staff   2239 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/ar
-rw-r--r-- root/staff   2085 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/common
-rw-r--r-- root/staff   2576 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/da
-rw-r--r-- root/staff   2467 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/de
-rw-r--r-- root/staff   2541 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/de-ch
-rw-r--r-- root/staff   2581 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/en-gb
-rw-r--r-- root/staff    609 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/en-us
-rw-r--r-- root/staff   2236 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/es
-rw-r--r-- root/staff   2685 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/fi
-rw-r--r-- root/staff    907 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/fo
-rw-r--r-- root/staff   2588 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/fr
-rw-r--r-- root/staff   2876 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/fr-be
-rw-r--r-- root/staff    934 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/fr-ca
-rw-r--r-- root/staff   2471 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/fr-ch
-rw-r--r-- root/staff   2699 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/hr
-rw-r--r-- root/staff   1866 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/hu
-rw-r--r-- root/staff   2462 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/it
-rw-r--r-- root/staff   2034 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/ja
-rw-r--r-- root/staff   1096 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/lt
-rw-r--r-- root/staff   2840 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/lv
-rw-r--r-- root/staff   2366 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/mk
-rw-r--r-- root/staff    298 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/modifiers
-rw-r--r-- root/staff   2576 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/no
-rw-r--r-- root/staff   2672 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/pl
-rw-r--r-- root/staff   2450 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/pt
-rw-r--r-- root/staff   1354 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/pt-br
-rw-r--r-- root/staff   2554 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/ru
-rw-r--r-- root/staff   2293 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/sl
-rw-r--r-- root/staff    999 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/sv
-rw-r--r-- root/staff   3123 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/th
-rw-r--r-- root/staff   2649 2004-03-22 11:51:54 ./usr/local/share/rdesktop/keymaps/tr
```

- As second step we are interested in information about the package:

```
hostname:/home/ickstadt/newpackages# dpkg-deb --info rdesktop.woody.1.3.1.deb
new debian package, version 2.0.
size 86266 bytes: control archive= 496 bytes.
 519 bytes, 12 lines * control
Package: rdesktop
Version: 1.3.1
Section: x11
Priority: optional
Architecture: alpha
Depends: libc6.1 (>= 2.2.5-11.5), libssl0.9.6 (>= 0.9.6c-2), xlibs (>= 4.1.0-16)
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 Citrix ICA, no server extensions are required.
```

The contents and info parameter shows us what we expected. We guess the package is quite correct.

8. Final we reach the end of this short manual. At last we have to rename the debian package to fit the debian nomenclature:

```
mv rdesktop.woody.1.3.1.deb rdesktop_1.3.1-1_alpha.deb
```

That's all folks! You can install the package using "dpkg -i rdesktop_1.3.1-1_alpha.deb" or uninstall with following syntax "dpkg -r rdesktop". If you might have a look to the repository just type "dpkg --get-selections | grep rde":

```
hostname:/home/ickstadt/newpackages# dpkg -i rdesktop_1.3.1-1_alpha.deb
Selecting previously deselected package rdesktop.
(Reading database ... 51340 files and directories currently installed.)
Unpacking rdesktop (from rdesktop_1.3.1-1_alpha.deb) ...
Setting up rdesktop (1.3.1) ...

hostname:/home/ickstadt/newpackages# dpkg -r rdesktop
(Reading database ... 51379 files and directories currently installed.)
Removing rdesktop ...
dpkg - warning: while removing rdesktop, directory `/usr/local/share' not empty so not removed.
dpkg - warning: while removing rdesktop, directory `/usr/local/man/man1' not empty so not removed.
dpkg - warning: while removing rdesktop, directory `/usr/local/man' not empty so not removed.

hostname:/home/ickstadt/newpackages# dpkg --get-selections | grep rde
rdesktop          install
```

You can download the rdesktop 1.3.1 package for [i386](#) [54 kB] and [alpha](#) [91 kB]. I would like to thank Martin Schmitt from [ScSy](#) for building the package for i386 architecture and the initial work on [fdp](#) [5 kB] shell script.

You can download this page as [pdf file](#) [121 kB].



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