

brainvisa-development - Defect #14673

Missing shared library dependencies in the installer packages under Linux

06/04/2016 10:58 AM - Leprince, Yann

Status:	Closed	Start date:	06/04/2016
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0:00 hour
Target version:	brainvisa-4.6	Spent time:	0:00 hour
Resolution:			

Description

I installed BrainVISA using the installer under Arch Linux (brainvisa_installer-4.5.0-linux64-glibc-2.15-online), and I get missing shared libraries when launching BrainVISA:

```
ImportError: libaudio.so.2: cannot open shared object file: No such file or directory
```

As this dependency does not seem to be very useful anyway (audio in BrainVISA?) maybe there is some way of avoiding it? I know that passing the flag **-WI,--as-needed** can avoid adding unused libraries as dependencies.

I made a small script to list the shared library dependencies that are not present in the packages:

```
PACKAGE_DIR=/home/yleprince/brainvisa/pkg-4.5.0
LD_LIBRARY_PATH="$PACKAGE_DIR/lib" find "$PACKAGE_DIR" -name '*.so' -exec ldd {} \; > libs.txt
LD_LIBRARY_PATH="$PACKAGE_DIR/lib" find "$PACKAGE_DIR/bin/real-bin" -execdir ldd {} \; > execs.txt
grep -vhF "$PACKAGE_DIR" libs.txt execs.txt | sed 's/(0x[0-9a-f]\+)$//\| | sort | uniq
```

The results for my system follow. Many of these libraries are probably best kept as dependencies, but it could be useful to bundle those that are really needed, and not present everywhere?

```
libapt-inst.so.1.4 => not found
libapt-pkg.so.4.12 => not found
libatk-1.0.so.0 => /usr/lib/libatk-1.0.so.0
libaudio.so.2 => not found
libavcodec.so.53 => not found
libavformat.so.53 => not found
libavutil.so.51 => not found
libBLT.2.4.so.8.5 => not found
libbonobo-2.so.0 => not found
libbonobo-activation.so.4 => not found
libbonoboui-2.so.0 => not found
libcap.so.2 => /usr/lib/libcap.so.2
libCosmo.so.5.8 => not found
libcrypt.so.1 => /usr/lib/libcrypt.so.1
libc.so.6 => /usr/lib/libc.so.6
libcurl-gnutls.so.4 => not found
libdatrie.so.1 => /usr/lib/libdatrie.so.1
libdb-5.1.so => not found
libdbus-1.so.3 => /usr/lib/libdbus-1.so.3
libdbus-glib-1.so.2 => /usr/lib/libdbus-glib-1.so.2
libdhash.so.1 => /usr/lib/libdhash.so.1
libdl.so.2 => /usr/lib/libdl.so.2
libexslt.so.0 => /usr/lib/libexslt.so.0
libffi.so.6 => /usr/lib/libffi.so.6
libfontconfig.so.1 => /usr/lib/libfontconfig.so.1
libfreetype.so.6 => /usr/lib/libfreetype.so.6
libgconf-2.so.4 => /usr/lib/libgconf-2.so.4
libgcrypt.so.11 => not found
libgcrypt.so.20 => /usr/lib/libgcrypt.so.20
libgdbm.so.3 => not found
```

libgdk_pixbuf-2.0.so.0 => /usr/lib/libgdk_pixbuf-2.0.so.0
libgdk-x11-2.0.so.0 => /usr/lib/libgdk-x11-2.0.so.0
libgd.so.2 => not found
libgio-2.0.so.0 => /usr/lib/libgio-2.0.so.0
libgirepository-1.0.so.1 => /usr/lib/libgirepository-1.0.so.1
libgl2ps.so.0 => not found
libglade-2.0.so.0 => /usr/lib/libglade-2.0.so.0
libGLdispatch.so.0 => /usr/lib/libGLdispatch.so.0
libglib-2.0.so.0 => /usr/lib/libglib-2.0.so.0
libGL.so.1 => /usr/lib/libGL.so.1
libGLU.so.1 => /usr/lib/libGLU.so.1
libGLX.so.0 => /usr/lib/libGLX.so.0
libgmodule-2.0.so.0 => /usr/lib/libgmodule-2.0.so.0
libgmp.so.10 => /usr/lib/libgmp.so.10
libgnome-2.so.0 => not found
libgnomecanvas-2.so.0 => not found
libgnomeui-2.so.0 => not found
libgnomevfs-2.so.0 => not found
libgobject-2.0.so.0 => /usr/lib/libgobject-2.0.so.0
libgpg-error.so.0 => /usr/lib/libgpg-error.so.0
libgraphite2.so.3 => /usr/lib/libgraphite2.so.3
libgstapp-0.10.so.0 => /usr/lib/libgstapp-0.10.so.0
libgstbase-0.10.so.0 => /usr/lib/libgstbase-0.10.so.0
libgstinterfaces-0.10.so.0 => /usr/lib/libgstinterfaces-0.10.so.0
libgstpbutils-0.10.so.0 => /usr/lib/libgstpbutils-0.10.so.0
libgststreamer-0.10.so.0 => /usr/lib/libgststreamer-0.10.so.0
libgstvideo-0.10.so.0 => /usr/lib/libgstvideo-0.10.so.0
libgthread-2.0.so.0 => /usr/lib/libgthread-2.0.so.0
libgtksourceview-2.0.so.0 => /usr/lib/libgtksourceview-2.0.so.0
libgtk-x11-2.0.so.0 => /usr/lib/libgtk-x11-2.0.so.0
libharfbuzz.so.0 => /usr/lib/libharfbuzz.so.0
libICE.so.6 => /usr/lib/libICE.so.6
liblcms.so.1 => /usr/lib/liblcms.so.1
libldb.so.1 => /usr/lib/libldb.so.1
liblz4.so.1 => /usr/lib/liblz4.so.1
liblzma.so.5 => /usr/lib/liblzma.so.5
libminc2.so.1 => not found
libmng.so.1 => not found
libmpi_cxx.so.0 => not found
libmpi.so.0 => not found
libm.so.6 => /usr/lib/libm.so.6
libmysqlclient.so.18 => not found
libncursesw.so.5 => not found
libncursesw.so.6 => /usr/lib/libncursesw.so.6
libnetcdf_c++.so.5 => not found
libnetcdf.so.6 => not found
libnewt.so.0.52 => /usr/lib/libnewt.so.0.52
libnsl.so.1 => /usr/lib/libnsl.so.1
libnspr4.so => /usr/lib/libnspr4.so
libnss3.so => /usr/lib/libnss3.so
libnssutil3.so => /usr/lib/libnssutil3.so
libopenjpeg.so.2 => not found
libORBit-2.so.0 => not found
libORBit-imodule-2.so.0 => not found
liborc-0.4.so.0 => /usr/lib/liborc-0.4.so.0
libpam_misc.so.0 => /usr/lib/libpam_misc.so.0
libpam.so.0 => /usr/lib/libpam.so.0
libpanelw.so.5 => not found
libpango-1.0.so.0 => /usr/lib/libpango-1.0.so.0
libpangocairo-1.0.so.0 => /usr/lib/libpangocairo-1.0.so.0
libpangoft2-1.0.so.0 => /usr/lib/libpangoft2-1.0.so.0
libpcre.so.1 => /usr/lib/libpcre.so.1
libpcre.so.3 => not found
libpgm-5.1.so.0 => not found
libpixmap-1.so.0 => /usr/lib/libpixmap-1.so.0
libplc4.so => /usr/lib/libplc4.so
libplds4.so => /usr/lib/libplds4.so

```
libpng16.so.16 => /usr/lib/libpng16.so.16
libpopt.so.0 => /usr/lib/libpopt.so.0
libpq.so.5 => not found
libpthread.so.0 => /usr/lib/libpthread.so.0
libpyglib-2.0-python2.7.so.0 => not found
libpyglib-gi-2.0-python2.7.so.0 => not found
libQtAssistantClient.so.4 => not found
libreadline.so.6 => /usr/lib/libreadline.so.6
libresolv.so.2 => /usr/lib/libresolv.so.2
librt.so.1 => /usr/lib/librt.so.1
libselinux.so.1 => not found
libslang.so.2 => /usr/lib/libslang.so.2
libSM.so.6 => /usr/lib/libSM.so.6
libswscale.so.2 => not found
libsystemd.so.0 => /usr/lib/libsystemd.so.0
libtalloc.so.2 => /usr/lib/libtalloc.so.2
libtcl8.5.so.0 => not found
libtevent.so.0 => /usr/lib/libtevent.so.0
libthai.so.0 => /usr/lib/libthai.so.0
libtinfo.so.5 => not found
libtk8.5.so.0 => not found
libumfpack.so.5.4.0 => not found
libunistring.so.0 => not found
libutil.so.1 => /usr/lib/libutil.so.1
libuuid.so.1 => /usr/lib/libuuid.so.1
libvolume_io2.so.1 => not found
libVPIC.so.5.8 => not found
libvtkalglib.so.5.8 => not found
libvtkWidgetsAddOn.so => not found
libX11.so.6 => /usr/lib/libX11.so.6
libxapian.so.22 => not found
libXau.so.6 => /usr/lib/libXau.so.6
libxcb-render.so.0 => /usr/lib/libxcb-render.so.0
libxcb-shm.so.0 => /usr/lib/libxcb-shm.so.0
libxcb.so.1 => /usr/lib/libxcb.so.1
libXcomposite.so.1 => /usr/lib/libXcomposite.so.1
libXcursor.so.1 => /usr/lib/libXcursor.so.1
libXdamage.so.1 => /usr/lib/libXdamage.so.1
libXdmcp.so.6 => /usr/lib/libXdmcp.so.6
libXext.so.6 => /usr/lib/libXext.so.6
libXfixes.so.3 => /usr/lib/libXfixes.so.3
libXinerama.so.1 => /usr/lib/libXinerama.so.1
libXi.so.6 => /usr/lib/libXi.so.6
libXrandr.so.2 => /usr/lib/libXrandr.so.2
libXrender.so.1 => /usr/lib/libXrender.so.1
libxslt.so.1 => /usr/lib/libxslt.so.1
libXt.so.6 => /usr/lib/libXt.so.6
libyaml-0.so.2 => not found
libz.so.1 => /usr/lib/libz.so.1
```

Associated revisions

Revision 72575 - 11/04/2016 05:19 PM - Riviere, Denis

added libaudio and libtinfo in packaging rules
#14673

Revision 72575 - 11/04/2016 05:19 PM - Riviere, Denis

added libaudio and libtinfo in packaging rules
#14673

Revision 75510 - 22/11/2016 07:40 PM - Riviere, Denis

fixing some packaging dependencies (broken or missing on some systems)
#14673

Revision 75510 - 22/11/2016 07:40 PM - Riviere, Denis

fixing some packaging dependencies (broken or missing on some systems)
#14673

History

#1 - 06/04/2016 08:56 PM - Riviere, Denis

For libaudio, anatomist may make some kind of sound (in a very very non-needed part...) so when it is built with, it is a required dependency. So the best is probably that I remove it or load dynamically libaudio in anatomist.

For other libs, the situation is often not so clear:

- some may depend on the system, on hardware, drivers etc like libGL, so this one must normally not be shipped with brainvisa
- many of other missing libs are only used in some python modules that we are not using at all. As python provides links to many C libs, and generally to almost all of the system, the full dependencies of python would be, more or less, a whole linux system. We don't really want to package libs we are not using (many of them are big)... The "real" problem here is that we ship python as a single package instead of hundreds of different ones like on most linux distros. But it's too much work to split it into so many pieces and dependencies...

#2 - 07/04/2016 06:47 PM - Riviere, Denis

Actually Qt is already linked against libaudio, so it's a required dependency of Qt:

```
ldd /usr/lib/x86_64-linux-gnu/libQtGui.so.4 | fgrep audio
libaudio.so.2 => /usr/lib/x86_64-linux-gnu/libaudio.so.2 (0x00007fecacc26000)
```

It's strange that libaudio is not installed on some systems...

#3 - 11/04/2016 01:44 PM - Leprince, Yann

Well, libaudio is not a general-purpose audio library, but it is only used for some weird network-based audio setups, so I guess that is why it is not installed on many systems.

The problem with libaudio is that it isn't even *packaged* on some distributions (including Arch and Gentoo), so that we cannot simply tell the user to install the relevant package. Then, I see two possible solutions for addressing this problem:

1. Quick, sub-optimal solution: package libaudio.so.2 with the Qt libraries;
2. More involved solution: ship a version of Qt that only has useful features enabled, however this means that we cannot simply use the Debian/Ubuntu package but probably have to compile it from source...

#4 - 11/04/2016 01:55 PM - Riviere, Denis

The problem with libaudio is that it isn't even packaged on some distributions (including Arch and Gentoo),

So How does Qt work on such distributions ? Without audio support ?

Moreover libaudio has neither cmake config nor pkg-config setup, so we will have to do it on our own.

I still prefer solution 1 because when possible we ship the Qt lib of the system we build on, it allows system compatibility for the same system, and avoids the work of rebuilding Qt with all fancy options. And then we ship a full-featured Qt.

By the way, I think the Mandriva-based distrib of Brainvisa doesn't have this audio support/dependency.

#5 - 11/04/2016 03:45 PM - Leprince, Yann

Yes, it probably supports audio through other libraries, only not the esoteric network-based setup of libaudio...

By the way, I hit another missing library on my Arch system: libtinfo.so.5. It is required by the packaged version of libreadline.so.6, which is itself needed by the shell (system bash); as a result all shell scripts fail to run when LD_LIBRARY_PATH points to the package's lib/ directory.

The situation with libtinfo is a little different compared to libaudio: this library is part of the ncurses library, but there is the option to build it separately during ncurses configuration. While Debian chose to separate the library, Arch chose not to so it does not exist on this distribution. Gentoo provides a choice, but even when libtinfo is there the shell fails with undefined symbol: rl_signal_event_hook. Life is hard... In the meantime I installed an Ubuntu virtual machine to run BrainVISA on my Arch workstation.

So I guess that for this case the right thing would be to include libtinfo.so.5 in the package that already distributes libreadline?

#6 - 26/09/2017 02:47 PM - Riviere, Denis

- Target version set to brainvisa-4.6

#7 - 26/09/2017 02:48 PM - Riviere, Denis

- Status changed from New to Closed