QGIS Application - Feature request #1518
python binding does not link with libpython

2009-01-27 05:58 AM - fundawang -

Status:	Closed		
Priority:	Low		
Assignee:	nobody -		
Category:	Build/Install		
Pull Request or Patch supplied:		**Resolution:**	wontfix
Easy fix?:	No	**Copied to github as #:**	11578

Description

python binding of qgis does not have any direct link references to libpython, which will cause undefined references when linking. Furthermore, the linker does not obby cmake's linker flag.

Please consider merging following patch:
http://svn.mandriva.com/cgi-bin/viewvc.cgi/packages/cooker/qgis/current/SOURCES/qgis_1.0.0-linkage.patch

Associated revisions

Revision dc696527 - 2009-08-05 11:45 PM - Jürgen Fischer

use linker flags when compiling python bindings (fixes #1518)

git-svn-id: http://svn.osgeo.org/qgis/trunk/qgis@11279 c8812cc2-4d05-0410-92ff-de0c093fc19c

Revision 669b6940 - 2009-08-05 11:45 PM - Jürgen Fischer

use linker flags when compiling python bindings (fixes #1518)

git-svn-id: http://svn.osgeo.org/qgis/trunk@11279 c8812cc2-4d05-0410-92ff-de0c093fc19c

History

#1 - 2009-02-01 09:56 AM - Martin Dobias

Hi,

[[PyQGIS]] bindings are generated using makefiles produced by SIP. Looking at output of ldd, niether [[PyQt]]4 nor SIP (both using sipconfig) link directly to libpython on my ubuntu box, so I'm in doubt whether linking directly is desired. Do [[PyQt]]4 modules link to libpython on mandriva?

Martin

#2 - 2009-03-21 06:54 PM - fundawang -

well, if it is not directly linked against libpython, then there is no signal that python bindings is using python. i.e., packagers will need to put "Depends: python" into python binding packagers, otherwise end users may leave a qgis-python but without python interpreter.

Linking directly against libpython will generate binary dependencies to python packages.

#3 - 2009-03-22 02:19 AM - Martin Dobias

I think it's a reasonable requirement for packagers to add "depends: python" statement for the package for qgis python bindings, isn't it? :-)

My concern is that trying to change these linking things might actually break something, so I think we're better of with using default compilation parameters.

#4 - 2009-05-16 06:35 AM - Jean-Roc Morreale

The proposed patch doesn't seem to be the final solution for Mandriva 2009.1 as even with qgis-python & others python deps installed, the python plugin manager doesn't show up. I've users who reports the same behaviour with ubuntu intrepid.

#5 - 2009-07-05 12:41 AM - Markus Neteler

I am Mandriva 2009.1 user, the patch helps to compile QGIS (Version 1.0.x svn) and the Python plugins work.

#6 - 2009-07-05 01:47 AM - Jean-Roc Morreale

Thank for the info Markus, I'll relay it to Buchan Milne (mdv's maintener for qgis) so we can ship a correct backport to 2009 and 2009.1

#7 - 2009-07-05 01:55 AM - Markus Neteler

jrm: FYI, the original poster (Funda Wang) is now the maintainer: e.g. http://sophie.zarb.org/srpm/cooker,ia64/qgis

#8 - 2009-07-05 07:18 AM - Jürgen Fischer

Replying to [comment:3 wonder]:

> *I think it's a reasonable requirement for packagers to add "depends: python" statement for the package for qgis python bindings, isn't it? :-)*
>
> *My concern is that trying to change these linking things might actually break something, so I think we're better of with using default compilation parameters.*

This patch breaks compiling on Windows - and I still don't see why the python bindings need to be linked with the python libraries - as they obviously don't need them.

What's the problem with adding a dependency to the mandriva package manually?

#9 - 2009-07-05 08:09 AM - fundawang -

The "Depends: python" is a packaging issue. Without the patch, qgis even won't built with LDFLAGS="-WI,--as-needed -WI,--no-undefined".

#10 - 2009-08-02 03:39 AM - Giovanni Manghi

Hi,

what is the status of this patch now we are closing in to feature freeze for qgis 1.2?

#11 - 2009-08-02 03:43 AM - Markus Neteler

Did you try to compile with LDFLAGS="-Wl,--as-needed -Wl,--no-undefined" on an e.g. Ubuntu box?

#12 - 2009-08-02 04:25 AM - Giovanni Manghi

Replying to [comment:11 neteler]:

> *Did you try to compile with LDFLAGS="-Wl,--as-needed -Wl,--no-undefined" on an e.g. Ubuntu box?*

Hi,

yes, it compiles fine under Ubuntu 9.04

#13 - 2009-08-02 08:54 AM - Jürgen Fischer

Replying to [comment:12 lutra]:

> *Replying to [comment:11 neteler]:*
>
> > *Did you try to compile with LDFLAGS="-Wl,--as-needed -Wl,--no-undefined" on an e.g. Ubuntu box?*
>
> *Hi,*
>
> *yes, it compiles fine under Ubuntu 9.04*

And Debian unstable. And the resulting library is already linked with python:

    $ ldd /usr/lib/libqgispython.so|grep pyth
        libpython2.5.so.1.0 => /usr/lib/libpython2.5.so.1.0 (0x00007f79d8fa3000)

Maybe this was fixed in [[PyQt]]4 or SIP - it would make sense to fix it there.

I'm using SIP 4.8.1 and [[PyQt]]4 4.5.1.

#14 - 2009-08-02 09:39 AM - Markus Neteler

On Mandriva 2009.1, I have python-sip-4.7.9-3, python-qt4-4.4.4-6 and qt4-common-4.5.2-1.3. Your version seems to be more recent (but Debian **unstable**).

The resulting library is also here linked with python:

    ldd /home/local/lib/qgis/lib/libqgispython.so |grep pyth
        libpython2.6.so.1.0 => /usr/lib64/libpython2.6.so.1.0 (0x00007f19e0f18000)

Not sure what to do.

#15 - 2009-08-02 10:45 AM - Jürgen Fischer

Replying to [comment:14 neteler]:

> *On Mandriva 2009.1, I have python-sip-4.7.9-3, python-qt4-4.4.4-6 and qt4-common-4.5.2-1.3. Your version seems to be more recent (but Debian* ***unstable****).*
>
> *The resulting library is also here linked with python:*
>
> > ldd /home/local/lib/qgis/lib/libqgispython.so |grep pyth
> >   libpython2.6.so.1.0 => /usr/lib64/libpython2.6.so.1.0 (0x00007f19e0f18000)
>
> *Not sure what to do.*

With or without the patch?   Mine is without the patch.   And I thought the patch's intent was to get that explicit link - which is there now. I guess the patch is obsolete now.

And this might have been a bug in [[PyQt]]4 (or probably even SIP) in the first place as that link is probably as useful for every other python binding as it is for qgis' and should have been - and probably was in the meantime - added there.

I'd opt for leaving things as the are in qgis and consider this a problem with older systems and declare it a packaging problem.

#16 - 2009-08-04 12:59 PM - Jean-Roc Morreale

Hi, I did a try against mandriva's cooker (python-qt4-4.5.2, python-sip-4.8.2, qt4-common-4.5.2), qgis version 1.0 svn still need the patch to be built without undefined references and svn trunk is rejecting this part (python/configure.py.in.rej) :

```
  1. common settings for both core and gui libs
    for mk in [ makefile_core, makefile_gui ]:
  +  mk.extra_lflags = [[CMAKE_MODULE_LINKER_FLAGS]]
     mk.extra_libs = [[qgis_core]]
     if geos_library!="":
       mk.extra_libs.append(geos_library)
```

#17 - 2009-08-04 03:47 PM - Jürgen Fischer

Replying to [comment:16 jrm]:

> *Hi, I did a try against mandriva's cooker (python-qt4-4.5.2, python-sip-4.8.2, qt4-common-4.5.2), qgis version 1.0 svn still need the patch to be built without undefined references*

Can you quote the error message you get?

#18 - 2009-08-05 01:13 AM - Jean-Roc Morreale

$ rpmbuild -ba qgis_trunk.spec

Exécution_de(%prep): /bin/sh -e /home/jrm/rpm/tmp/rpm-tmp.z46fV4

+ umask 022

+ cd /home/jrm/rpm/BUILD

+ '[' 1 -eq 1 ']'

+ '[' 1 -eq 1 ']'

+ '[' 1 -eq 1 ']'

+ cd /home/jrm/rpm/BUILD

+ rm -rf qgis_1.2

+ /usr/bin/gzip -dc /home/jrm/rpm/SOURCES/qgis_1.2.tar.gz

+ /bin/tar -xf -

+ STATUS=0

+ '[' 0 -ne 0 ']'

+ cd qgis_1.2

+ echo 'Patch #3906 (qgis_1.0.0-linkage.patch):'

Patch #3906 (qgis_1.0.0-linkage.patch):

+ /usr/bin/patch -U -s -p0 -b --suffix .link --fuzz=0 -i /home/jrm/rpm/SOURCES
/qgis_1.0.0-linkage.patch

1 out of 2 hunks FAILED -- saving rejects to file python/configure.py.in.rej

#19 - 2009-08-05 02:51 PM - Jürgen Fischer
- Status changed from Open to Closed
- Resolution set to fixed

Replying to [comment:18 jrm]:

> *+ echo 'Patch #3906 (qgis_1.0.0-linkage.patch):'*

> *Patch #3906 (qgis_1.0.0-linkage.patch):*

> + /usr/bin/patch -U -s -p0 -b --suffix .link --fuzz=0 -i /home/jrm/rpm/SOURCES

/qgis_1.0.0-linkage.patch

> 1 out of 2 hunks FAILED -- saving rejects to file python/configure.py.in.rej

<pre>

<pre>
# This made an appearence in Qt v4.4rc1 and breaks extension modules so
# remove it. It was removed at my request but some stupid distros may
# have kept it.
self.LFLAGS.remove('-Wl,--no-undefined')
</pre>

<pre>

commit:669b6940 (SVN r11280) now passes on the linker flags in splitted form and there are no linker errors.

#20 - 2009-08-06 01:49 AM - Jean-Roc Morreale

Sorry for the mistake, I did a try without the patch and with rev 11281 but still get the undefined references. I tryed to save cmake's output with '| tee errors.log' but it doesn't save the errors' lines so there is a part of my terminal's log : http://dl.free.fr/tAGYVq6e2

#21 - 2009-08-06 02:20 AM - Markus Neteler

I have recompiled the current unpatched trunk and it now compiles on Mandriva 2009.1.

#22 - 2009-08-06 02:28 AM - fundawang -

Replying to [comment:21 neteler]:

> ⁇
> *I have recompiled the current unpatched trunk and it now compiles on Mandriva 2009.1.*

⁇
I think you should use %cmake macro when compiling, as it will produce correct compile flags, especially LDFLAGS.

#23 - 2009-08-06 03:19 AM - fundawang -

- Status changed from Closed to Feedback

- Resolution deleted (fixed)

Patch against qgis 1.1 (I couldn't find any information on how to checkout svn tarball)

```
    --- src/core/CMakeLists.txt~   2009-04-14 05:03:52.000000000 -0400
    +++ src/core/CMakeLists.txt    2009-08-06 05:51:15.000000000 -0400
    @@ -272,7 +272,7 @@
        TARGET_LINK_LIBRARIES(qgis_core ${ICONV_LIBRARY})
      ENDIF (WIN32 OR APPLE)
      IF (UNIX)
    -   TARGET_LINK_LIBRARIES(qgis_core pthread)
    +   TARGET_LINK_LIBRARIES(qgis_core pthread dl)
      ENDIF (UNIX)
     ELSE (WITH_INTERNAL_SPATIALITE)
      TARGET_LINK_LIBRARIES(qgis_core ${SQLITE3_LIBRARY})
    --- python/qgisconfig.py.in~    2007-01-08 21:39:15.000000000 -0500
    +++ python/qgisconfig.py.in     2009-08-06 05:57:33.000000000 -0400
    @@ -1,4 +1,5 @@
     import [[PyQt]]4.pyqtconfig
    +import sys

     # These are installation specific values created when QGIS was configured.
     # The following line will be replaced when this template is used to create
    @@ -34,6 +35,7 @@
         # Make sure our C++ library is linked.
         self.extra_libs.append("qgis_core")
         self.extra_libs.append("qgis_gui")
    +    self.extra_libs.append("python"+sys.version[0:3])

         # Let the super-class do what it needs to.
         pyqtconfig.QtModuleMakefile.finalise(self)
    --- python/configure.py.in~    2009-02-25 14:15:23.000000000 -0500
    +++ python/configure.py.in     2009-08-06 05:58:43.000000000 -0400
    @@ -126,6 +126,7 @@

     # common settings for both core and gui libs
     for mk in [ makefile_core, makefile_gui ]:
    +  mk.extra_lflags = [[@CMAKE_MODULE_LINKER_FLAGS@]]
      mk.extra_libs = [[qgis_core]]
      if geos_library!="":
        mk.extra_libs.append(geos_library)
    @@ -144,7 +145,8 @@
                    build_path, # qgsconfig.h, qgssvnversion.h
                    gdal_inc_dir,
                    geos_inc_dir]
    -  mk.extra_cxxflags = [[-DCORE_EXPORT=]]
    +  mk.extra_cxxflags = [[-DCORE_EXPORT="+export "@CMAKE_CXX_FLAGS@]]
    +  mk.extra_libs.append("python"+sys.version[0:3])

     # more settings for gui lib
```

```
makefile_gui.extra_libs.append("qgis_gui")
```

if you wont' accept the patch, and think it is a packaging problem, just close this as won't fix, but not fixed, please.

#24 - 2009-08-11 02:06 PM - Giovanni Manghi

- Resolution set to wontfix

- Status changed from Feedback to Closed

#25 - 2009-08-15 09:13 AM - Jürgen Fischer

I'm revisiting this, because Markus seems to have hit this Mandriva specific problem again.

Replying to [comment:23 fundawang]:

> *Patch against qgis 1.1 (I couldn't find any information on how to checkout svn tarball)*

1.1 isn't part of the unstable branch and there not maintained.

This patch still breaks the Windows build. I didn't find a portable way to get the name of the python library (ie. python25 on Windows, python2.5 and something else on [[MacOS]]). And I dislike hardcoding that without real need.

Python extensions are only useful when loaded into python and there the python library already exists. So there's no real reason why extension must be linked explicitly with the python library. So the usual case is, that the library isn't linked. And that's probably also why sipconfig filters out link options that try to make this trigger an error - because that would break each an every extension using sipconfig. See my comment above.

What I understand is that this could mask problems when extensions are not only not linked to the python library, but also not linked to other libraries they actually use and that are not always loaded into python (OTOH python might be able to cope with this - dunno).

Anyway, the applied change splits the link arguments up, so that the filter can actually remove the offending option. In that way this bug is actually fixed: The build doesn't break, if you pass pedantic link flags.

If this doesn't help on Mandriva, I suspect that the filter was removed there from sipconfig, but in that case I don't understand why sipconfig wasn't also modified to link with the python library by default. The Makefile class actually has a *python* parameter to do just that. Unfortunately it cannot be used through [[ModuleMakefile]]. But a modification to allow that and/or make that default should not have been difficult.

#26 - 2009-08-15 09:41 AM - William Kyngesburye

Just a note from the OSX side. Python modules on OSX shouldn't link the Python library directly, since they are loaded by Python, the Python library is expected to be available to modules. Extra libraries directly used by the module DO need to be linked.

Linking flags are taken care of in both python distutils and SIP: no libpython, but including -bundle -undefined dynamic_lookup flags (bundle is an OSX special loadable module type of library, dynamic_lookup finds the python library symbols at runtime).

#27 - 2009-08-15 10:47 AM - Markus Neteler

Hi, while I am unable to follow the technical details of this report I have attached a patch to fix compile problem on Mandriva (in QGIS trunk) based on the

original patch for QGIS 1.0. If the patch os good or bad I cannot say, at least I can compile QGIS trunk.

Files

python_patch_QGIS_trunk.diff	1020 Bytes	2009-08-15	Markus Neteler