QGIS Application - Bug report #12228
deadlock from parallel rendering
2015-02-19 02:29 AM - Sandro Santilli

Status: Closed
Priority: High
Assignee:
Category: Symbology
Affected QGIS version: 2.8.3
Operating System:
Pull Request or Patch supplied:
Crashes QGIS or corrupts data:
Regression?: No
Easy fix?: No
Resolution: fixed/implemented
Copied to github as #: 20416

Description

I was testing a project I have and qgis (master) froze.
strace shows it hanging in: futex(0x45b791c, FUTEX_WAIT_PRIVATE, 1, NULL

gdb shows this backtrace:

```
(gdb) bt
#0  pthread_cond_wait@GLIBC_2.3.2 () at ../nptl/sysdeps/unix/sysv/linux/x86_64/pthread_cond_wait.S:185
#1  0x00007fc6914ae816 in QWaitCondition::wait(QMutex*, unsigned long) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#2  0x00007fc69149b8e4 in QFutureInterfaceBase::waitForFinished() () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#3  0x00007fc6926b60af in QgsMapRendererParallelJob::cancel (this=0x522b360) at /usr/src/qgis/qgis/src/core/qgsmaprendererparalleljob.cpp:92
#4  0x00007fc692224e9 in QgsMapCanvas::stopRendering (this=0x1f3c3c0) at /usr/src/qgis/qgis/src/gui/qgsmapcanvas.cpp:770
#5  0x00007fc692223c2 in QgsMapCanvas::refreshMap (this=0x1f3c3c0) at /usr/src/qgis/qgis/src/gui/qgsmapcanvas.cpp:649
#6  0x00007fc6922b4b14 in QgsMapCanvas::qt_static_metacall (_o=0x1f3c3c0, _c=QMetaObject::InvokeMetaMethod, _id=40, _a=0x7fff919dca60) at /usr/src/qgis/build/src/gui/moc_qgsmapcanvas.cxx:166
#7  0x00007fc69f15487a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#8  0x00007fc69f15cd7a0 in ?? () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#9  0x00007fc69f15831 in QObject::event(QEvent*) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#10 0x00007fc69949e2c in QMetaObject::activate(QObject*, QEvent*, void**) () from /usr/lib/x86_64-linux-gnu/libQtGui.so.4
#11 0x00007fc69f150a0 in ?? () from /usr/lib/x86_64-linux-gnu/libQtGui.so.4
#12 0x00007fc69f150b5cb in QgsApplication::notify (this=0x7fff919d910, receiver=0x45c7b80, event=0x7fff919dced0, _a=0x45b791c, _c=QMetaObject::InvokeMetaMethod, _id=40, _a=0x7fff919dca60) at /usr/src/qgis/build/src/gui/moc_qgsapplication.cpp:252
#13 0x00007fc69f150b04dd in QCoreApplication::notifyInternal(QObject*, QEvent*) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#14 0x00007fc69f15e0323 in ?? () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#15 0x00007fc69f15dd5f1 in ?? () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#16 0x00007fc68c26ae04 in g_main_context_dispatch () from /lib/x86_64-linux-gnu/libglib-2.0.so.0
#17 0x00007fc68c26b048 in ?? () from /lib/x86_64-linux-gnu/libglib-2.0.so.0
#18 0x00007fc68c26b00ec in g_main_context_iteration () from /lib/x86_64-linux-gnu/libglib-2.0.so.0
#19 0x00007fc69f15dd7a1 in QEventDispatcherGlib::processEvents(QFlags<QEventLoop::ProcessEventsFlag>) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#20 0x00007fc6990eabb6 in ?? () from /usr/lib/x86_64-linux-gnu/libQtGui.so.4
#21 0x00007fc69f15a0af in QEventLoop::processEvents(QFlags<QEventLoop::ProcessEventsFlag>) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#22 0x00007fc69f15af3a5 in QEventLoop::exec(QFlags<QEventLoop::ProcessEventsFlag>) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
```

2021-11-12
All I did to trigger it was changing visibility of a couple of layers and navigate. 
I'm tagging it as "Causes crash or corruption" as you can't exit from a deadlock w/out killing the process.

History
#1 - 2015-02-19 04:32 AM - Martin Dobias

What about the worker threads - what were they waiting for?

#2 - 2015-02-19 04:51 AM - Jürgen Fischer

Martin Dobias wrote:

What about the worker threads - what were they waiting for?

Good question :) 

<strk> master branch
<strk> Process 10380 attached
<strk> futex(0x45b791c, FUTEX_WAIT_PRIVATE, 1, NULL
<strk> ^^^ that's coming from strace, it's stuck there, deadlock!
   <jef> strk: where?
<strk> jef: #12228
<sigq> Title: QGIS Application - Bug report #12228: deadlock from parallel rendering - QGIS Issue Tracking (at hub.qgis.org)
   <jef> strk: and the other threads?
   <strk> I killed the process now
   <strk> jef: but nothing was coming out from strace, so I guess all were quiet
   <strk> helgrind tool of valgrind might help

#3 - 2015-02-19 04:57 AM - Jürgen Fischer

BTW thread apply all bt in gdb produces backtraces for all threads.

#4 - 2015-02-19 04:59 AM - Jürgen Fischer

- Tag set to mtr

#5 - 2015-05-10 01:03 AM - Giovanni Manghi

- Target version changed from Version 2.8 to Version 2.8.2

#6 - 2015-05-14 03:02 AM - Giovanni Manghi

- Target version changed from Version 2.8.2 to Version 2.10

#7 - 2015-05-27 11:33 PM - Andreas Neumann
Strk - what are the data sources? Postgis, perhaps?

I have similar issues with Postgis connections and MTR if my number of cores for rendering goes beyond 2-3. If I limit the nr of cores to 2, the problem disappears.

I would really like to see a fix for this. I have not created a bug report, because it was very hard to reproduce and apparently shows up on my Windows version more often than on Linux. But that is perhaps because on Linux my Postgis connections are local, whereas on Windows the connections are remote.

#8 - 2015-05-28 12:59 AM - Giovanni Manghi
- Target version changed from Version 2.10 to Future Release - High Priority

Hi Andreas,

I would really like to see a fix for this. I have not created a bug report, because it was very hard to reproduce and apparently shows up on my Windows version more often than on Linux. But that is perhaps because on Linux my Postgis connections are local, whereas on Windows the connections are remote.

it seems there are different tickets with issues apparently caused by mtr, them main seems to be this #11141

#9 - 2015-05-28 02:27 AM - Sandro Santilli

I don't remember what the datasource was. Yes, debugging threading issues is an hell (thus the name of the valgrind tool, I guess)

#10 - 2015-05-28 03:14 AM - Jürgen Fischer
- Status changed from Open to Feedback

not reproduceable

#11 - 2015-06-14 01:46 AM - Giovanni Manghi
- Status changed from Feedback to Closed
- Resolution set to not reproducible

closing for lack of feedback.

#12 - 2015-07-31 03:19 AM - Sandro Santilli
- Status changed from Closed to Reopened
- Resolution deleted (not reproducible)

I've just reproduced this, in 2.8.3 (lacking an entry in the "Affected version" pull-down menu).
What I did:

1) Load the POSTGIS_SRC/topology/test/invalid_topology.sql script into a topology-enabled PostgreSQL database
2) Load the "invalid_topology" schema in qgis via DBManager (select the schema, pick Topology Viewer from the "schema" menu)
What I got: a blocked GUI

The backtrace:

(gdb) bt
#0  pthread_cond_wait @@GLIBC_2.3.2 () at ../nptl/sysdeps/unix/sysv/linux/x86_64/pthread_cond_wait.S:185
#1 0x00007f8953cc816 in QWaitCondition::wait(QMutex*, unsigned long) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#2 0x00007f8953b9e8e in QFutureInterfaceBase::waitForFinished() () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#3 0x00007f895568ca81 in QgsMapRendererParallelJob::cancel (this=0x57c2ba0) at /usr/src/qgis/qgis-2.8/src/core/qgsmaprendererparalleljob.cpp:92
#4 0x00007f8954d4d629 in QgsMapCanvas::stopRendering (this=0x26c7680) at /usr/src/qgis/qgis-2.8/src/gui/qgsmapcanvas.cpp:778
#5 0x00007f8954d4d5012 in QgsMapCanvas::refreshMap (this=0x26c7680) at /usr/src/qgis/qgis-2.8/src/gui/qgsmapcanvas.cpp:657

13 - 2015-07-31 03:23 AM - Sandro Santilli

wioth thread apply all bt

, as suggested by Jurgen:

(gdb) thread apply all bt

Thread 13 (Thread 0x7f89394ee700 (LWP 24245)):
#0 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#1 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#2 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#3 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#4 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#5 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81

Thread 12 (Thread 0x7f8938ced700 (LWP 24246)):
#0 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#1 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#2 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#3 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#4 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#5 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81

Thread 11 (Thread 0x7f8931333700 (LWP 24253)):
#0 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#1 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#2 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#3 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#4 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81

Thread 10 (Thread 0x7f8925296700 (LWP 24254)):
#0 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#1 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#2 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#3 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81
#4 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81

Thread 9 (Thread 0x7f8933ff700 (LWP 24256)):
#0 0x00007f8954d4d5012 in poll () at ./sysdeps/unix/syscall-template.S:81

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Thread 5 (Thread 0x789337fe700 (LWP 24293)):
#0 0x0000789550b2a5f in __libc_wait (stat_loc=0x789337fc460) at /sysdeps/unix/sysv/linux/x86_64/...:35
#1 0x0000000000580193 in dumpBacktrace (depth=20) at /usr/src/qgis/qgis-2.8/src/app/main.cpp:236
#2 0x00000000005802c8 in myMessageOutput (type=QtWarningMsg, msg=0x78920015108 "\"GEOS exception: \"\"") at /usr/src/qgis/qgis-2.8/src/app/main.cpp:349
#3 0x00007895536c1b1 in qt_message_output(QMsgType, char const*) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#4 0x000000000098e61 in QDebug::QDebug() ()
#5 0x0000789556f866 in throwGEOSException (fmt=0x789523a8bc "%s") at /usr/src/qgis/qgis-2.8/src/core/qgsgeometry.cpp:101
#6 0x0000789553ae0d in GEOSContextHandle_HS::ERROR_MESSAGE (this=0x789256890, fmt=...) at geos_ts_c.cpp:243
#7 0x0000789553a5e7e in GEOSGeom_createLineString_r (extHandle=0x2256890, cs=<optimized out>) at geos_ts_c.cpp:4100
#8 0x00007895561033e in createGeoLineString (polyline=...) at /usr/src/qgis/qgis-2.8/src/core/qgsgeometry.cpp:265
#9 0x00007895561d347 in QgsGeometry::exportWkbToGeos (this=0x78920015320) at /usr/src/qgis/qgis-2.8/src/core/qgsgeometry.cpp:4118
#10 0x000078955561b50 in QgsGeometry::asGeos (this=0x78920015320) at /usr/src/qgis/qgis-2.8/src/core/qgsgeometry.cpp:625
#11 0x00007895556d8f4c in QgsPalLayerSettings::registerFeature (this=0x5925208, f=..., context=..., dxLayer=...) at /usr/src/qgis/qgis-2.8/src/core/qgsparselabeling.cpp:1782
#12 0x000078955565e3cf in QgsPalLabeling::registerFeature (this=0x514b990, layerID=..., f=..., context=..., dxLayer=...) at /usr/src/qgis/qgis-2.8/src/core/qgsparselabeling.cpp:3405
#13 0x0000789555792a1b in QgsVectorLayerRenderer::drawRendererV2 (this=0x540f470, fit=...) at /usr/src/qgis/qgis-2.8/src/core/qgsvectorlayerrenderer.cpp:280
#14 0x00007895557921cf in QgsVectorLayerRenderer::render (this=0x540f470) at /usr/src/qgis/qgis-2.8/src/core/qgsvectorlayerrenderer.cpp:216
#15 0x00007895556b60 in QgsMapRendererParallelJob::renderLayerStatic (job=...) at /usr/src/qgis/qgis-2.8/src/core/qgsmaprendererparalleljob.cpp:215
#16 0x00007895556b93ae in QgsMapRendererParallelJob::createGeosLineString (polyline=...) at /usr/src/qgis/qgis-2.8/src/core/qgsmaprendererparalleljob.cpp:290
#17 0x00007895556b93ae in QgsMapRendererParallelJob::createGeosLineString (polyline=...) at /usr/src/qgis/qgis-2.8/src/core/qgsmaprendererparalleljob.cpp:290

Thread 4 (Thread 0x789337fe700 (LWP 24294)):
#0 pthread_cond_wait@GLIBC_2.3.2 () at /sysdeps/unix/sysv/linux/x86_64/...:185
#1 0x0000789553fc816 in QWaitCondition::wait(QMutex*, unsigned long) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#2 0x0000789553f85b5 in QSemaphore::acquire(int) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#3 0x0000789553f85dcb in QgsConnectionPoolGroup<QgsPostgresConn>::acquire (this=0x788b8012f0d0) at /usr/src/qgis/qgis-2.8/src/providers/postgres/.../core/qgsconnectionpool.h:81
#4 0x0000789553f85dcb in QgsConnectionPoolQgsPostgresConnQgsPostgresConnPoolGroup::acquireConnection (this=0x788d84ca460 <QgsPostgresConnPool::sInstance>, connInfo=...) at /usr/src/qgis/qgis-2.8/src/providers/postgres/.../core/qgsconnectionpool.h:218
#5 0x0000789553f85dcb in QgsPostgresFeatureLayer::QgsPostgresFeatureLayer (this=0x788d800fa40, source=0x5429a70, ownSource=false, request=...) at /usr/src/qgis/qgis-2.8/src/providers/postgres/qgspostgresfeaturelayer.cpp:38
Thread 1 (Thread 0x7f8959f500800 (LWP 24244)):

```
#0  pthread_cond_wait@Glibc_2.3.2 () at /usr/lib/x86_64-linux-gnu/libpthread.so.0.3.5
#1  0x00007f8950e3c816 in QWaitCondition::wait(QMutex*, unsigned long) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#2  0x00007f8950e3c81e in QFutureInterfaceBase::waitForFinished() () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#3  0x00007f8955c58281 in QgsMapRendererParallelJob::cancel (this=0x57c2ba0) at /usr/src/qgis/2.8/src/core/qgsmaprendererparalleljob.cpp:92

#4  0x00007f8950e3d219 in QgsMapCanvas::stopRendering (this=0x26c7680) at /usr/src/qgis/2.8/src/gui/qgsmapcanvas.cpp:778
#5  0x00007f8950e3d212 in QgsMapCanvas::refreshMap (this=0x26c7680) at /usr/src/qgis/2.8/src/gui/qgsmapcanvas.cpp:657
#6  0x00007f8950e3d21df in QgsMapCanvas::qt_static_metacall (_a=0x26c7680, _c=QMetaObject::InvokeMetaMethod, _id=41, _a=0x7ff26747150)
    at /usr/src/qgis/build/2.8/src/gui/moc_qgsmapcanvas.cxx:168
#7  0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#8  0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#9  0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#10 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#11 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#12 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#13 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#14 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#15 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#16 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#17 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#18 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#19 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#20 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#21 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#22 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#23 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
#24 0x00007f8950e3d217a in QMetaObject::activate(QObject*, QMetaObject const*, int, void**) () from /usr/lib/x86_64-linux-gnu/libQtCore.so.4
```

#14 - 2015-07-31 03:26 AM - Sandro Santilli
- Target version deleted (Future Release - High Priority)
- Affected QGIS version changed from 2.6.0 to 2.8.2

#15 - 2015-07-31 03:26 AM - Sandro Santilli
Could it be the lack of exception handling in Thread 2?

```
msg=0x7f88a402a718 "\"GEOS exception: IllegalArgumentException: point array must contain 0 or >1 elements\n\""
```

#16 - 2015-07-31 05:48 AM - Sandro Santilli
- File invalid_topo.sql.gz added
I'm attaching a dump to reproduce this. I could reproduce it just fine with 2.8.
Master doesn't seem to have the problem.

#17 - 2015-07-31 06:23 AM - Giovanni Manghi
- Affected QGIS version changed from 2.8.2 to 2.8.3

#18 - 2015-10-05 03:26 AM - Jürgen Fischer
- Category set to Symbology

#19 - 2016-06-09 03:17 AM - Sandro Santilli
- Status changed from Reopened to In Progress

I cannot reproduce with current master either (2.15 -- d1cac84).
Given 2.14 is the new LTR I'll test that one and if fixed would close this bug.

#20 - 2016-06-09 03:47 AM - Sandro Santilli
- Target version set to Version 2.14
- Status changed from In Progress to Closed
- Resolution set to fixed/implemented

2.14.3 is not affected either, while I confirm 2.8.9 is.
Given 2.14 is the new LTR, I'm closing this as fixed.

Files
invalid_topo.sql.gz  83.6 KB  2015-07-31  Sandro Santilli