

Debugging QGIS Project Hangs When Opening Older Projects in Newer QGIS

Scenario: QGIS 3.22 (Debian 12) projects hanging in QGIS 3.40 (Debian 13)

This guide lists practical ways to diagnose QGIS projects that appear to freeze during load. In most cases the root cause is a single problematic layer/provider, a network timeout, or a plugin/profile issue.

1) Isolate whether the problem is the project, your profile, or plugins

- Try opening the project using a clean QGIS profile. If it works, the issue is likely a plugin or settings in your main profile.

```
qgis --profile /tmp/qgis-clean
```

If you suspect plugins, check QGIS command line options on your system and test with plugins/Python disabled if supported:

```
qgis --help | grep -i plugin
```

2) Start QGIS from a terminal and capture logs

- Launch QGIS from a terminal so warnings/errors print to stdout.
- If QGIS opens, enable View -> Panels -> Log Messages and focus on Warnings/Errors. The last message before the freeze is often the clue (WMS/WMTS requests, database auth, missing paths, etc.).

```
qgis /path/to/project.qgz
```

3) Check if QGIS is waiting on a data source (very common)

A project can look frozen while QGIS is waiting on: a network mount, WMS/WMTS/XYZ tiles, a PostGIS connection (DNS/auth/SSL), or slow/locked local files.

While QGIS is stuck, run these commands in another terminal:

```
lsof -p $(pidof qgis) | tail -n 50
ss -tpe | grep qgis
strace -f -p $(pidof qgis) -s 200
```

4) Get a stack trace (best for real deadlocks, futex waits, etc.)

If the process is truly unresponsive (your strace shows futex() with no progress), attach gdb and capture backtraces:

```
gdb -p $(pidof qgis)
(gdb) thread apply all bt
(gdb) detach
(gdb) quit
```

5) Safest way to identify a bad layer: remove layers via binary search

If only some projects hang, you can usually find one offending layer by temporarily removing layers in the project file. Do this on a copy.

- If your project is a .qgz: rename it to .zip and extract it.
- Edit the contained .qgs (XML).
- Remove suspicious layers first (WMS/WMTS/XYZ tiles, remote databases, network paths).
- Do a 'binary search': remove half the layers, test, then narrow down.

6) Common culprits and quick fixes once identified

- WMS/WMTS/XYZ tiles: can hang due to network timeouts. Remove or disable them first.
- PostGIS: test the DB connection in a new empty project; check DNS, credentials, SSL, auth manager.
- Network-mounted files: verify mounts are connected; copy the data locally as a test.
- Corrupt/slow GeoPackage: try opening the .gpkg alone in a new project to see if it hangs outside the project.

7) If you report a bug upstream, include the right evidence

- Exact QGIS versions and Debian versions.
- Whether the issue reproduces with a clean profile.
- The gdb backtrace (thread apply all bt).
- Terminal output and the last relevant log messages.
- Which layer/provider causes the hang (if you found it via layer removal).

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