

Cellular Network Infrastructure - Bug #4123

gcc & LTO related issues

07/19/2019 11:22 PM - Hoernchen

Status:	Stalled	Start date:	07/19/2019
Priority:	Normal	Due date:	
Assignee:	Hoernchen	% Done:	0%
Category:			
Target version:			
Spec Reference:			

Description

The new and shiny gcc 9.x will happily do cross-TU analysis, and LTO allows discovering hidden "issues", i.e. FSMs that *could in theory* access uninitialized data. This is not really helpful, but our own compilation flags kill the builds completely:

```
grep -rill "error=null" | grep \.ac$ | xargs grep null-deref
osmo-bsc/configure.ac:AX_CHECK_COMPILE_FLAG([-Werror=null-dereference], [CFLAGS="$CFLAGS -Werror=null-dereference"])
osmo-sgsn/configure.ac:AX_CHECK_COMPILE_FLAG([-Werror=null-dereference], [CFLAGS="$CFLAGS -Werror=null-dereference"])
osmo-msc/configure.ac:AX_CHECK_COMPILE_FLAG([-Werror=null-dereference], [CFLAGS="$CFLAGS -Werror=null-dereference"])
osmo-mgw/configure.ac:AX_CHECK_COMPILE_FLAG([-Werror=null-dereference], [CFLAGS="$CFLAGS -Werror=null-dereference"])
```

As evident by https://gcc.gnu.org/bugzilla/show_bug.cgi?id=80922 there is no way to influence warnings and errors by using pragmas, which is not entirely unexpected due to the way LTO works.

There is also no other way to tell the compiler not to warn, we can only prove the non-nullness by throwing obvious wrenches into the code, like `if(!x) exit();` which would at most please the compilerbeast while providing no additional benefits.

And there is the *minor* issue that `Werror` will even turn messages like "error: potential null pointer dereference [-Werror=null-dereference]" into errors, where gcc doesn't even know if there is an issue. Breaking the build due warnings that involve the word "potential" is bad idea.

Additionally LTO breaks `-Wl,-wrap`, https://gcc.gnu.org/bugzilla/show_bug.cgi?id=88643 - this might get fixed, but it breaks all tests that are using this feature.

Related issues:

Related to OsmoSGSN - Bug #4116: osmo-sgsn fails to compile on openSUSE Tumbleweed...	New	07/17/2019
Related to OsmoMSC - Bug #4115: osmo-msc fails to compile on openSUSE Tumbleweed...	New	07/17/2019
Related to OsmoGGSN (former OpenGGSN) - Bug #4114: osmo-ggsn fails to compile...	New	07/17/2019
Related to OsmoBSC - Bug #4113: osmo-bsc fails to compile on openSUSE Tumbleweed...	New	07/17/2019
Related to OpenBSC - Bug #4112: OpenBSC fails to compile on openSUSE Tumbleweed...	New	07/17/2019

History

#1 - 07/19/2019 11:22 PM - Hoernchen

- Assignee set to Hoernchen

#2 - 07/19/2019 11:29 PM - Hoernchen

- Related to Bug #4116: osmo-sgsn fails to compile on openSUSE Tumbleweed (gcc 9.1 with LTO enabled) added

#3 - 07/19/2019 11:29 PM - Hoernchen

- Related to Bug #4115: osmo-msc fails to compile on openSUSE Tumbleweed (gcc 9.1 with LTO enabled) added

#4 - 07/19/2019 11:30 PM - Hoernchen

- Related to Bug #4114: osmo-ggsn fails to compile on openSUSE Tumbleweed (gcc 9.1 with LTO enabled) added

#5 - 07/19/2019 11:30 PM - Hoernchen

- Related to Bug #4113: osmo-bsc fails to compile on openSUSE Tumbleweed (gcc 9.1 with LTO enabled) added

#6 - 07/19/2019 11:30 PM - Hoernchen

- Related to Bug #4112: OpenBSC fails to compile on openSUSE Tumbleweed (gcc 9.1 with LTO enabled) added

#7 - 07/22/2019 04:46 PM - Hoernchen

- Status changed from New to Stalled