OsmoSGSN - Bug #2577

Ensure meaningful default loglevels.

10/17/2017 09:52 AM - dexter

<table>
<thead>
<tr>
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<th>Stalled</th>
<th>Start date:</th>
<th>10/17/2017</th>
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<tr>
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<td>dexter</td>
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<td>Target version:</td>
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<td>Spec Reference:</td>
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</table>

Description

There are some loglevels configured to LOGL_DEBUG by default in osmo-sgsn. Find meaningful defaults and also check the other products.

(We should also add a test that checks if some application registers odd log levels by default.)

History

#1 - 04/15/2019 07:34 AM - laforge
- Assignee set to lynxis

#2 - 01/08/2020 10:47 PM - laforge
- Assignee changed from lynxis to dexter

#3 - 01/13/2020 12:51 PM - dexter
- Status changed from New to In Progress
- % Done changed from 0 to 50

To ensure proper default loglevel I think it makes sense to print a message as a reminder. Maybe later when we fixed the problem in every osmocom project, then we can migrate to an OSMO_ASSERT()

https://gerrit.osmocom.org/c/libosmocore/+/16832 logging.c: Add valuestrings for loglevels
https://gerrit.osmocom.org/c/libosmocore/+/16833 application.c: check default loglevels on startup

#4 - 01/15/2020 02:58 PM - pespin

I think it makes much more sense to test this as a unit test for apps where we really want to avoid DEBUG being default. I (or someone else) may be writing an app which uses DEBUG by default for whatever reason, and we must not reject that.

#5 - 01/15/2020 04:04 PM - laforge

I would think it's sufficient to go through all applications (it's not that many, after all) and ensure that the current code doesn't have any compiled-in default log level below NOTICE or INFO. In the future we should pay attention during code review to prevent new such bugs from being introduced. I would expect they date back to our pre-gerrit development days.

This way there's no need for enforcement in libosmocore, which may create problems as pau indicates.

#6 - 01/17/2020 10:34 AM - dexter
- % Done changed from 50 to 90

I have now checked the applications. LOGL_NOTICE seems to be the standard everywhere. I have found some odd loglevels in osmocom-bb and osmo-bsc which I have corrected. There is also some old stuff bs_11_config and openBSC which I did not touch.

#7 - 01/20/2020 11:40 AM - fixeria

Looking at the commits related to this ticket, I noticed that we're basically changing all logging categories to use LOGL_NOTICE. In the end I see an array of struct log_info_cat where every entry has the same line: `loglevel = LOGL_NOTICE`. This looks odd and cumbersome, so I've got an idea.
LOGL_DEBUG has the lowest value, and it starts from 1:

```c
#define LOGL_DEBUG 1 /*! debugging information */
#define LOGL_INFO 3 /*! general information */
#define LOGL_NOTICE 5 /*! abnormal/unexpected condition */
#define LOGL_ERROR 7 /*! error condition, requires user action */
#define LOGL_FATAL 8 /*! fatal, program aborted */
```

This means that we can omit those repeating lines, and leave it up to log_init() to initialize the default logging level:

```c
diff --git a/src/logging.c b/src/logging.c
index 4d6224d5..60719d50 100644
--- a/src/logging.c
+++ b/src/logging.c
@@ -1056,6 +1056,8 @@ int log_init(const struct log_info *inf, void *ctx)
         for (i = 0; i < inf->num_cat; i++) {
             memcpy((struct log_info_cat *) &osmo_log_info->cat[i],
                     &inf->cat[i], sizeof(struct log_info_cat));
+            if (!inf->cat[i].loglevel)
+                !inf->cat[i].loglevel = LOGL_NOTICE;
         }
     }
```

#8 - 01/20/2020 12:19 PM - dexter

I like the idea, let's integrate that.

#9 - 03/30/2020 08:26 PM - dexter

I have integrated what fixeria suggested, when no loglevel is set it will automatically switch to notice. [https://gerrit.osmocom.org/c/libosmocore/+/17604](https://gerrit.osmocom.org/c/libosmocore/+/17604)

I also had a look at the default loglevels in the various osmocom projects. The following projects have loglevels other than LOGL_NOTICE set as default loglevel. Many of them are minor cases, LOGL_INFO vs. LOGL_NOTICE but in some even LOGL_DEBUG is the default, see also:

- openbsc [https://gerrit.osmocom.org/c/openbsc/+/17605](https://gerrit.osmocom.org/c/openbsc/+/17605)
- osmo-bts [https://gerrit.osmocom.org/c/osmo-bts/+/17606](https://gerrit.osmocom.org/c/osmo-bts/+/17606)
- osmo-ggsn [https://gerrit.osmocom.org/c/osmo-ggsn/+/17607](https://gerrit.osmocom.org/c/osmo-ggsn/+/17607)
- osmo-iuh [https://gerrit.osmocom.org/c/osmo-iuh/+/17608](https://gerrit.osmocom.org/c/osmo-iuh/+/17608)
- osmo-pcu [https://gerrit.osmocom.org/c/osmo-pcu/+/17609](https://gerrit.osmocom.org/c/osmo-pcu/+/17609)
- osmo-trx [https://gerrit.osmocom.org/c/osmo trx/+/17610](https://gerrit.osmocom.org/c/osmo trx/+/17610)

Then I inspected the default configs. It is important to notice that the default configs (at least one of them) is also used in the packages and installed as default config to etc. I think it is important not only to have same loglevels here but also have a "harmonic" configuration. This means that the IP-Addresses in the configs should match up. Its indeed possible to use only loopback addresses when every network component including bts-pcu runs on the same host. Here is what I think should be improved:

- osmo-ggsn: [https://gerrit.osmocom.org/c/osmo-ggsn/+/17601](https://gerrit.osmocom.org/c/osmo-ggsn/+/17601) (Default IP)
- [https://gerrit.osmocom.org/c/osmo-ggsn/+/17584](https://gerrit.osmocom.org/c/osmo-ggsn/+/17584) (Problematic loglevels)
- [https://gerrit.osmocom.org/c/osmo-ggsn/+/17576](https://gerrit.osmocom.org/c/osmo-ggsn/+/17576) (Random IPs for DNS)

- osmo-hlr: [https://gerrit.osmocom.org/c/osmo-hlr/+/17600](https://gerrit.osmocom.org/c/osmo-hlr/+/17600) (Problematic loglevels)

- osmo-mgw: [https://gerrit.osmocom.org/c/osmo-mgw/+/17599](https://gerrit.osmocom.org/c/osmo-mgw/+/17599) (Binds to random IP)

- osmo-mac: [https://gerrit.osmocom.org/c/osmo-mac/+/17598](https://gerrit.osmocom.org/c/osmo-mac/+/17598) (Random MGW IP address)

- osmo-trx: [https://gerrit.osmocom.org/c/osmo-trx/+/17594](https://gerrit.osmocom.org/c/osmo-trx/+/17594) (Problematic loglevels)

(The patches suggest to stick strictly to LOGL_NOTICE which might be debatable)

#10 - 04/09/2020 09:55 AM - dexter

Setting not-set log categories to NOTICE is more difficult then expected. I
have questions about that, see my comment in gerrit:

https://gerrit.osmocom.org/c/libosmocore/+/17604

From the patches above, the following are still open:

https://gerrit.osmocom.org/c/osmo-bts/+/17606
https://gerrit.osmocom.org/c/osmo-ggsn/+/17607
https://gerrit.osmocom.org/c/osmo-iuh/+/17608
https://gerrit.osmocom.org/c/osmo-pcu/+/17609

https://gerrit.osmocom.org/c/osmo-ggsn/+/17601 (Default IP)
https://gerrit.osmocom.org/c/osmo-hlr/+/17600 (Problematic loglevels)
https://gerrit.osmocom.org/c/osmo-msc/+/17598 (Random MGW IP address)
https://gerrit.osmocom.org/c/osmo-trx/+/17594 (Problematic loglevels)

#11 - 04/20/2020 04:47 PM - dexter

I have rebased and fixed the review issues for the patches that are still in review:

https://gerrit.osmocom.org/c/libosmocore/+/17604 logging: use LOGL_NOTICE when not loglevel is set
https://gerrit.osmocom.org/c/libosmo-sccp/+/17597 doc: make sure all log categories are set to level notice
https://gerrit.osmocom.org/c/osmo-ggsn/+/17607 debug: use LOGL_NOTICE instead of LOGL_DEBUG
https://gerrit.osmocom.org/c/osmo-hlr/+/17600 doc: do not use loglevel info for log category ss
https://gerrit.osmocom.org/c/osmo-pcu/+/17609 gprs_debug: Use only LOGL_NOTICE as default loglevel
https://gerrit.osmocom.org/c/osmo-trx/+/17594 doc: switch log levels to notice

#12 - 05/12/2020 11:45 AM - dexter

I have gone through the patches again, fixed and rebased everything. This is what still remains:

https://gerrit.osmocom.org/c/libosmocore/+/17604 logging: use LOGL_NOTICE when not loglevel is set
https://gerrit.osmocom.org/c/libosmo-sccp/+/17597 doc: do not use loglevel info for log category ss
https://gerrit.osmocom.org/c/osmo-pcu/+/17609 gprs_debug: Use only LOGL_NOTICE as default loglevel
https://gerrit.osmocom.org/c/osmo-trx/+/17594 doc: switch log levels to notice

#13 - 05/12/2020 12:12 PM - laforge

- Status changed from In Progress to Stalled