

Erlang Front-end Framework - Bug #21672

ps_lxi_driver downloads problem at startup, alarms fail

01/11/2019 04:52 PM - Dennis Nicklaus

Status:	Feedback	Start date:	01/11/2019
Priority:	High	Due date:	
Assignee:	Richard Neswold	% Done:	0%
Category:	Sorenson XG/SG Power Supply Driver	Estimated time:	0.00 hour
Target version:	dev-ps_lxi v1.0		

Description

When starting clx30e, there appear to be startup order/race conditions.

I upgraded it to erlang 21.1 and daq 1.7. Daq 1.7 now prints a message to the log when an alarm scan dies.

At startup, a lot (all?) the alarm scans die, apparently. The 'DOWN' message shows that they exit with status=normal.

That would generally happen when the driver returns ERR_DEVFAILED for a reading.

I attempted to make things work by using acl to run "download node=clx30e" and re-start all the alarms. When I did that, I noticed a lot of setting messages "Set current to ..." printed out that otherwise didn't get printed at startup.

So it appears that the driver isn't really ready for downloads when the downloads happen.

I don't think going to 21.1 or daq 1.7 had anything to do with causing this failure. Just with the new version, printing the 'DOWN' messages when the alarm scans die is new and that makes the problem apparent.

History

#1 - 01/11/2019 05:04 PM - Dennis Nicklaus

Just to clarify -- generally, it is the framework that would return the DEVFAILED error when it cannot find a driver process, not the individual driver code itself that would return that error.

#2 - 01/16/2019 11:19 AM - Richard Neswold

- Category changed from ACSys/FE Framework to Sorenson XG/SG Power Supply Driver

The driver doesn't accept settings until it's communicating with the power supply. If we don't have communications with the power supply when a setting comes in, the driver needs to remember and apply it when we regain communications.

#3 - 01/16/2019 11:40 AM - Richard Neswold

Here's a proposed fix:

Delete the setting record property in the database for each device so that settings are not sent down when the front-end is restarted.

- For front-end restarts, it connects to each power supply and reads the current setting.
- When the front-end and power supplies are off for a long time (a shutdown, for example) and then turned back on, we won't try to use a setting that's weeks (or months) old. The supply will come up off and the operators will decide what the setting should be.

Chip: comments?

#4 - 02/01/2019 10:46 AM - Richard Neswold

We should retry this with the latest version of the framework. Dennis and I found code that was still using sync:to_ms/1. We fixed it here: [b35acc53](#).

#5 - 02/04/2019 01:27 PM - Richard Neswold

- Status changed from New to Feedback

Two fixes:

commit [14f337f8](#) -- In this change, after the front-end software is up and running, we start a background task which sleeps for 5 seconds before asking for settings and alarms to be downloaded. This gives drivers a little time to initialize themselves before the settings start appearing.

commit [dev-ps_lxi6016c96](#) -- In this change, the driver doesn't wait 15 seconds before attempting communications, it tries right away (if it fails, it uses the 15 second delay before trying again.) This, with the previous change, removes the race condition.

If this works, I'll close out the issue.

#6 - 09/17/2019 03:21 PM - Richard Neswold

- Target version set to dev-ps_lsi v1.0

Did these changes help the situation? Are we still seeing boot problems?

#7 - 10/16/2019 03:59 PM - Dennis Nicklaus

Still seeing the problem, but to a lesser degree. See the erlang.log.2 file from a boot today 10/16/19 15:52.

The front-end starts, gives the "connected to supply" messages, then 2 seconds later, "Restored communications with " messages, but mixed in, before it is completely up are two "alarmloop received unknown message {'DOWN...'" messages which mean that an alarm scan died.

There were other problems earlier today, which I think were caused by not having the recent version of the ps_lxi software installed on clx30. I rebuilt and installed it and it seems OK now.

#8 - 10/25/2019 12:42 PM - Richard Neswold

[dev-ps_lxil4eea2826](#) : Added an option to gen_tcp:connect/4 to only wait 2 seconds for a connection. This lets the worker process wake up much sooner to respond to requests from the driver process.

[dev-ps_lxilc836d2ef](#) : Removed initial, 1 second delay so the worker process tries to connect sooner to the power supply.