Zephyr Project Networking Forum 2023

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Prior Years: Networking Forum Meeting Minutes

- 2018 - 2022 Meeting Minutes

Zephyr Project Networking Forum - 5 December 2023

Meeting Recording

- https://zoom.us/rec/share/S_JGjPvAAPVaIZaXCQ0p3TUnd2Pz_dqhmWCVobkzvvBUoJBu_f5KK8GogYPvOGhS.PRQC7jmMWMbpdRxI

Zephyr Project Networking Forum - 1 August 2023

Agenda

- GSoC 2023: HTTP2 server project presentation (Emna Rekik)
    - Will replace civetweb an external module to zephyr RFC 46
    - Works through poll system and provides 3 functions, start, stop and init
    - Supports HTTP1.1 and upgradable to 2.0 and is backward compatible with HTTP1
    - Concurrent streams are supported
    - Static sources/resources supported as is done in today's HTTP server and it is possible to have multiple instances of a server that can share data
    - Q&A
        - (Jukka) Is there a PR already submitted? -> yes there is a draft PR -> link in chat ->#59669
        - (Jukka) What's the plan with the draft? -> Emna has her own branch and is gradually adding more commits there.
        - (Chris) Can you list some of the things you would like to do performance metrics for? Since we would like to compare this HTTP server to the old version? -> Some of the things for perf are already in the flame graph. But since there is no HTTP2 support it is somewhat difficult for that comparison.
        - (Chris) Some things that may be interesting to compare between the new HTTP server and civetweb are
            - How long to serve page
            - How long to handle request
            - How many resources are utilized
            - Memory usage
            - New HTTP server is being tested for vulnerabilities
- Two questions from Sjors Hettinga:

- ~~Is there someone willing to help on Zperf testing the TCP collision avoidance PR:~~ https://github.com/zephyrproject-rtos/zephyr/pull/60112
  - (Robert) Verified on my side, no noticeable TCP throughput changes
- Does it make sense to make the priority of TCP configurable, what would be a sensible default? The same holds for PPP and maybe other ethernet layers en net_tc. Does someone has any input on that?
  - TCP is currently running at the highest priority (default -16). In combination with PPP, which is running at priority -1, the effect is that TCP consumes a lot of buffers, queueing them for PPP, which only starts processing them when TCP is done. Causing the system to often run out of buffers. By lowering the TCP prio below the PPP threshold this problem is largely solved.
  - (Robert) The reasonable approach is that the lowest layer should get priority. Allowing buffers to be released sooner. Which could have performance impact from context switching. Further avoiding congestion. So this suggestion makes sense.
  - (Robert) What should the priority defaults be? -> Leave them as is?
  - (Chris) If buffering is the issue maybe a separate pool of buffers makes for PPP sense?
    - (Jukka) This probably doesn't make much sense you are just splitting system resources into smaller pieces
    - (Robert) One other solution is limiting window sizes, which could fix the buffer issue. This works for a single TCP connection, but with multiple connections this isn't really feasible.
    - (Jukka) One solution may be to drop packets for a while?
    - **(Jukka) In any case it makes sense to be configurable**

- AOB
  - (Chris) Should there be a Kconfig option to enable ioctl for FIONBIO and FIONREAD #60849
    - (Chris)It probably wouldn't be resource intensive and it is nice to be able to turn things off
    - (Robert) It probably doesn't make sense since the functionality is fairly basic
    - (Chris) This is tangentially related to the HTTP server implementation
    - (Jukka) Is it possible to have multiple packets in the receive queue? -> Not sure it only currently checks the first packet -> it seems to be possible to have multiple packets so a loop is needed to ensure we check all of the packets.

Zephyr Project Networking Forum - 4 April 2023

Agenda

- Introduction to 802.15.4 support in BabbleSim (Alberto)
- L2-agnostic connectivity management update (new PR: https://github.com/zephyrproject-rtos/zephyr/pull/55946)

Zephyr Project Networking Forum - 7 February 2023

Agenda

- (Georges) L2-agnostic connectivity management update: (PR https://github.com/zephyrproject-rtos/zephyr/pull/53118)
- (Sjors) Maxwell Pro testing:
    - Should we create an issue to make a high performance profile for the echo server, for testing with Maxell and for power users?
        - https://github.com/hakehuang/zephyr/tree/tcp_ip_testing_maxwell/samples/net/sockets/echo_server
        - Sjors to create a Zephyr issue to add an overlay to the echo_server sample for testing
    - Hake identified issues with IPv4 and IPv6 defragmentation. What is required to create issues for that?
        - https://github.com/zephyrproject-rtos/test_results/issues
        - Sjors will create umbrella issues for IPv4/6 fragmentation failures
        - David will talk to Hake wrt rerunning tests with IPv4 fragmentation support enabled

Zephyr Project Networking Forum - 3 January 2023

Agenda

- IEEE 802.15.4-2015ff (TSCH, CSL, PHYs, …) in Zephyr
    - RFC/Feature Request for TSCH: https://github.com/zephyrproject-rtos/zephyr/issues/50336
    - Quick presentation of the current state of the proposal and implementation.
    - Questions re alignment of Net Mgmt API, Radio API/Capabilities, KConfig, devicetree with concepts from the 2015ff spec version (relevant examples: CSL, channel pages, TSCH, security, ranging): What goes where and how?
    - Next steps? (PRs, review, …)
- Maxwell Pro test results discussion - can't expose too much details about test cases/failures due to license.