Michal Simon

From diary of a XRootD developer

Few facts ;-)

- First commit (29/05/2015): *RPM: Remove xrootd-libs dependency for xrootd-client-compat*

- First PR (#247): *Release Stream lock before invoking callbacks. #216*

- First release (29/05/2015): 4.2.1
  - Single commit: *[XrdCl] Make sure kXR_mkpath is set for classic copy jobs when the destination is xrootd (backward compatibility fix)*.

- Last release (18/08/2022): 5.5.1

- Commits: 1'819
  - Which makes me the second most active contributor after Andy ;-)

- Releases: 55 (1 major, 16 feature, 38 bugfix)

Year 2015

- **Multiple event loops**
  - Event loop can get CPU bound

- Athena (Gaudi, Root, Geant4, XRootD, etc.)
  - **GSI authentication failure after fork**
  - What is a **hardware breakpoint**?
  - **Guilty**: COOL / CORAL

Year 2016

- **Matalink support**

- **ZIP support**
  - Extracting files (non-compressed)

Year 2016

- Custom Semaphore implementation vs gcc 5.1.1
- We were using futexes with
  - ***extern long int syscall (long int __sysno, ...) __THROW***
  - The ***__THROW*** means throws nothing

- pthread_cleanup_push (installs thread cancelation handler, uses stack unwinding)
- Segmentation fault in _***Unwind_Resume***

- What happened? Because of ***__THROW*** the compiler optimized away the frame pointer

- Fix: ***-fno-omit-frame-pointer***

Year 2017

- **SLC5 EOL** :-)

- Extreme copy

- Who knows what this is (hint: **gdb** on SLC6):

  - *p /a (*(void***) objptr)[0] @10*

Year 2018

- Local file support & **local redirect**

- **Python binding vs Ctrl+C** (occasionally hangs)
  - **atexit** handlers:
    - Clean up *File* objects
    - Stop **worker threads**

Year 2019

- First implementation of **declarative API :-)**

- **Proxy delegation** (TPC lite)

- ForceDisconnect (a pain in the back until this very day)

Year 2020

We released XRootD 5 :-)

- **SLC6 EOL**
  - We can drop custom semaphore implementation ;-)

Year 2021

- **PgRead / PgWrite** (xrdcp)**; XrdEc**

- **GPFS vs sendfile** syscall

  - Recalling missing pages **amplifies CPU** usage

    - Instead of fetching data using 8MB block we effectively used 4KB

Year 2022

- **Record / replay** plug-in

- **SSS authentication** vs **OpenSSL 3**

  - Fixed in: *[XrdCrypto] bf32: respect the key length when encrypting/decrypting.*

Thank you!

- Big thank you to the whole XRootD community! :-)

- … and a **special, big thank you to Andy!** :-)

Don't be a stranger, Please!

Michal Simon