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# Compression Plugins in h5wasm (javascript/webassembly)

*Tuesday 19 September 2023 15:30 (30 minutes)*

H5wasm is a webassembly-based library for reading and writing HDF5 files, which can be used natively in a web browser or in a local nodejs environment. The library has no external runtime dependencies, and is used in some online HDF5 viewers that don't require server-side processing: https://h5web.panosc.eu/h5wasm and https://myhdf5.hdfgroup.org/

The community has requested more compression plugins (e.g. ZSTANDARD) for h5wasm beyond the (included) DEFLATE, SHUFFLE, FLETCHER32 and SCALEOFFSET filters. In my talk I will discuss issues associated with adding plugins to h5wasm
For collaborative work on h5wasm, a change from single-maintainer in a private organization (github/usnistgov)
Incomplete support for dynamic linking in emscripten (MAIN_MODULE/SIDE_MODULE)
Complex dependency chains for some plugins (all libraries have to be compiled to WASM)
Browser limitations (e.g. max 4KB dynamic WASM loading in Chrome)
I will demonstrate a proof-of-concept build of h5wasm including a ZSTANDARD plugin, and discuss why I was not able to easily build an LZ4 plugin.
We can discuss a shared effort on building a repository for h5wasm like the the h5py plugins at https://github.com/silx-kit/hdf5plugin, also based on https://github.com/HDFGroup/hdf5_plugins. We could use people with skills in CMake, Emscripten, TypeScript and of course the HDF5 C API.

## Website

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