Math Special Interest Group

Session 2

May 17, 2023

Agenda

- Welcoming remarks – 5 minutes
- Updates from last meeting – 5 minutes
- Support of Discrete Fourier Transforms domain in oneMKL interfaces – Finlay Marno (30 minutes)
- Wrap-up and next steps – 5 minutes

Updates from last meeting

- Please feel free to extend invitations to others to join Math SIG
- Open source oneMKL interfaces updates:
  - DFT domain with support for Intel® oneMKL and NVIDIA cuFFT backends
  - SYCL-BLAS (pure SYCL, open-source BLAS implementation) added as a backend

	x86 CPU	Intel GPU	NVIDIA GPU	AMD GPU
BLAS	Intel® oneMKL NETLIB LAPACK SYCL-BLAS	Intel® oneMKL SYCL-BLAS	NVIDIA cuBLAS SYCL-BLAS	AMD rocBLAS SYCL-BLAS
LAPACK	Intel® oneMKL	Intel® oneMKL	NVIDIA cuSOLVER	AMD rocSOLVER
RNG	Intel® oneMKL	Intel® oneMKL	NVIDIA cuRAND	AMD rocRAND
DFT	Intel® oneMKL	Intel® oneMKL	NVIDIA cuFFT	-

- Intel® oneMKL 2023.1 was released

Support of Discrete Fourier Transforms domain in oneMKL interfaces

Wrap-up

Next Steps

- Focuses for next meeting(s):
  - Integrating SYCL-BLAS into oneMKL interfaces
  - Any topics from Math SIG members?

- If anyone has content that they would like posted on oneAPI.io, please let us know
- Please feel free to extend invitations to others to join Math SIG

Resources

- oneAPI Main Page: https://www.oneapi.io/
- Latest release of oneMKL Spec (currently v. 1.2): https://spec.oneapi.com/versions/latest/elements/oneMKL/source/index.html
- GitHub for oneAPI Spec: https://github.com/oneapi-src/oneAPI-spec
- GitHub for oneAPI Community Forum: https://github.com/oneapi-src/oneAPI-tab
- GitHub for open source oneMKL interfaces (currently BLAS, RNG, LAPACK, and DFT domains): https://github.com/oneapi-src/oneMKL