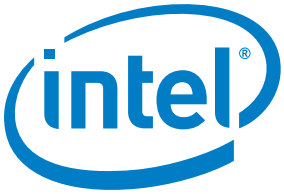


oneAPI Ultrasound Beamforming Library Release Notes

Release Notes

15 June 2022

Version History/Revision History

This is the main releases of oneAPI Ultrasound Beamforming Library:

Date	Revision	Description
June, 2022	1.0	Initialize version

Intended Audience

Software developers from OEM / ODM / SI / ISV

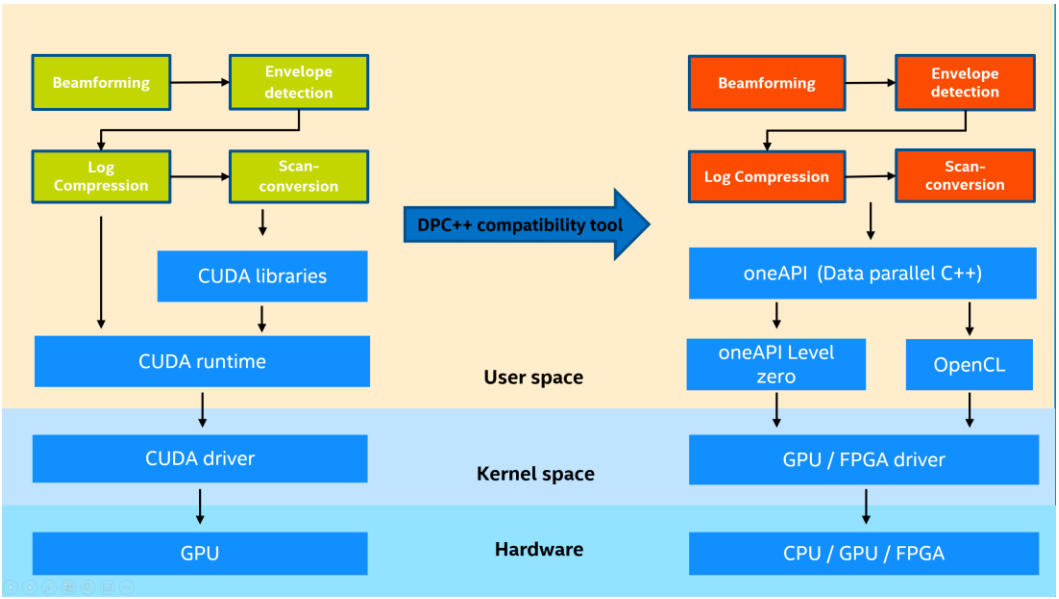
Customer Support

For technical support, including answers to questions not addressed in this product, please report issues on GitHub.

Contents:

1 Introduction

The purpose of this document is to guide users in using oneAPI Ultrasound Beamforming Library project. This project contains 2 ultrasound software beamforming samples, which process ultrasound raw data into images human readable. The project uses Intel OneAPI to do computation acceleration with Intel GPU and FPGA. The functions are developed based on Supra.



Using oneAPI toolkit -- Intel® DPC++ Compatibility Tool to implement the migration from CUDA to standard DPC++ has been released. For more details, please refer to: https://github.com/intel/supra-on-oneapi. The purpose of this project is for extracting and rewriting the kernel code for easily utilization and running on Intel xPU devices.

To learn more about this product, see:

- New features listed in the New in this Release section below
- Reference documentation listed in the Related Documentation section below

2 New in This Release

New Features

- Provide oneAPI ultrasound beamforming library code for Intel GPU.
- Provide oneAPI ultrasound beamforming standalone library code for Intel FPGA.
- Provide oneAPI ultrasound beamforming pipeline library code for Intel FPGA.
- Provide getting start guide.

3 Fixed Issues

Reference ID	Description	Status	Solution
1	Intel DGx cannot support 'double' format.	Fixed.	If you need to run on Intel DGx GPU, you need to run "export IGC_EnableDPEmulation=1" to make it support 'double'.

4 Known Issues

There is no information available. Non-Intel Issues

There is no information available.

5 Related Documentation

oneAPI Ultrasound Beamforming Library Getting Start Guide.pdf

6 Where to Find the Release

Please use git to download source code from git project, https://github.com/intel/oneAPI-Ultrasound-Beamforming-Library

How to Install this Release

- Please refer to **oneAPI Ultrasound Beamforming Library Getting Start Guide.pdf**.

7 Release Content

Table 1-1 Revision numbers of components of the Production Candidate release.

Subproject (component)	Location	Revision
Source Code	https://github.com/intel/oneAPI-Ultrasound-Beamforming-Library	1.0
Getting start guide	https://github.com/intel/oneAPI-Ultrasound-Beamforming-Library	1.0

External Dependencies

- oneAPI 2022.2. https://software.intel.com/content/www/us/en/develop/tools/oneapi/base-toolkit.html
- stb. https://github.com/nothings/stb
- Supra. https://github.com/IFL-CAMP/supra

8 Best Known Configuration

Please refer to **oneAPI Ultrasound Beamforming Library Getting Start Guide.pdf**.

9 Hardware and Software Compatibility

- For system requirement, please refer to https://software.intel.com/content/www/us/en/develop/articles/intel-oneapi-base-toolkit-system-requirements.html
- We have verified on below systems:
  An X86 desktop with below configuration:
  CPU: Intel Core i7-8700K CPU @3.7GHz x12
  GPU: Intel UHD Graphics 630
  GPU: Intel DG1
  FPGA Intel Arria 10 FPGA
  OS: Ubuntu 18.04

Supported Operating Systems

Ubuntu 18.04

10 Acronyms and Terms

The following acronyms and terms are used in this document (arranged in alphabetic order):

Acronym/Term	Description
Intel® oneAPI™	oneAPI is a cross-industry, open, standards-based unified programming model that delivers a common developer experience across accelerator architectures—for faster application performance, more productivity, and greater innovation. Please refer to https://www.oneapi.com/. Intel® oneAPI products will deliver the tools needed to deploy applications and solutions across the architectures. Please refer to https://software.intel.com/content/www/us/en/develop/tools/oneapi.html
SUPRA	An open-source pipeline for fully software defined ultrasound processing for real-time applications. Covering everything from beamforming to output of B-Mode images, SUPRA can help reproducibility of results and allows modifications to the image acquisition.
DPC++	At the core of the oneAPI specification is DPC++, an open, cross-architecture language built upon the ISO C++ and Khronos SYCL standards.
Intel® DPC++ Compatibility Tool	The Intel® DPC++ Compatibility Tool assists in migrating your existing CUDA code to Data Parallel C++ (DPC++) code. Refer to https://software.intel.com/content/www/us/en/develop/tools/oneapi/components/dpc-compatibility-tool.html

11 Legal Information

Component	License
oneAPI Ultrasound Beamforming Library	LGPL 2.1