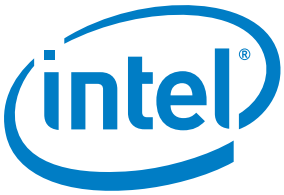

Hetero Streams Library 1.0

Release Notes for release of Hetero Streams Library 1.0

March 2016

US

Revision: 1.0

World Wide Web: http://www.intel.com

Legal Disclaimer

Contents

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1 Introduction

The Hetero Streams Library is a library that supports task concurrency on heterogeneous platforms.

The concurrency may be across nodes; within a node for small matrix operations; and in the overlapping of computation and communication, particularly for tiled solutions. It relieves the user of complexity in dealing with thread affinitization, offloading, memory types, and memory affinitization. The formal name of this product is Hetero Streams Library, and the casual name is hStreams.

2 Changes

2.1 New features

2.1.1 Using the host as the sink for streaming operations on Windows

With Intel® MPSS 3.6 release hStreams library provided functionality that enables the use of streams on the host physical domain. With the current release, treating the host as the sink is enabled under Windows.

2.1.2 New logging mechanism

With new logging mechanism, the user is able to set up log output in 2 different dimensions: level e.g. ERROR, WARN and type of information.

The minimal level output can be set using *hStreams_Cfg_SetLogLevel*. The info type mask can be set using *hStreams_Cfg_SetLogInfoType*.

For more details Please refer to *hStreams_UserGuide.doc*

2.1.3 Intel® MKL 64 bit support

The user has the ability to use either 32- or 64-bit Intel® MKL functions e.g. *hStreams_app_dgemm()*. This setting can be changed using *hStreams_Cfg_SetMKLInterface().*

2.1.4 COI & Intel® MKL dynamic loading

COI (Coprocessor Offload Infrastructure, part of the Intel® MPSS package) & Intel® MKL are now loaded dynamically. Therefore the dependencies of *hstreams_source* library will not show either of them.

All errors related to loading these libraries will be provided at the initialization phase, via the logging mechanism.

2.1.5 Independent release, github, and downloads

As of the 1.0 release of the hStreams library, it is separate from Intel® MPSS package.

hStreams library binaries will be available on 01.org webpage. The link is provided on the Intel® MPSS download page or it can be found under https://01.org/hetero-streams-library, in the Downloads section.

The github https://github.com/01org/hetero-streams webpage is regularly updated with the most recent hStreams library source. This is where users will be encouraged to contribute to this open source project.

2.1.6 Sink-side kernel incorporated into hstreams_source library

With Intel® MPSS 3.6 release hStreams library has deprecated libhstreams_mic.so. Currently this functionality is incorporated into hstreams_source.so (or dll under Windows) binary.

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3 Known issues and limitations

3.1 Using host as a target

The following app initialization APIs below,

- hStreams_app_init()
- hStreams_app_init_domains()

do not yet automatically make use of resources on the host. Use of host resources is supported with the core APIs, below. The value of the physical domain ID for the host as source is HSTR_SRC_PHYS_DOMAIN, and this should be used in the APIs below.

- hStreams_Init()
- hStreams_GetAvailable()
- hStreams_AddLogDomain()
- hStreams_StreamCreate()

3.2 Extended buffer properties

Support for a memory type other than HSTR_MEM_TYPE_NORMAL is not provided and the corresponding API – hStreams_Alloc1DEx() – will return a HSTR_RESULT_NOT_IMPLEMENTED error code if provided with an erroneous memory type in the buffer properties structure.

Further, support for the HSTR_BUF_PROP_AFFINITIZED is not provided and the corresponding API – hStreams_Alloc1DEx() – will return a HSTR_RESULT_NOT_IMPLEMENTED error code if provided with buffer properties structure with this flag set.

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4 Deprecated functionality

4.1 Functionality related to emitting messages

Due to the creation of a new and improved logging mechanism, the APIs and structures listed below that are related to the old logging functionality is marked as deprecated:

APIs:

- *hStreams_GetVerbose(*)
- *hStreams_SetVerbose*()

Structures:

- HSTR_SEVERITY
- HSTR_INFO_TYPE (partially)

Please be aware of that next release might remove deprecated functions and structures.

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5 Removed functionality

5.1 hStreams_EmitMessage

hStreams_EmitMessage function pointer is now removed from HSTR_OPTIONS structure.

5.2 libhstreams_sink.so

As previously announced, libhstreams_sink.so (dll) is now removed from the hStreams redistributable package.

5.3 hStreams_Init and hStreams_app_init* on Windows

Due too new internal APIs versioning mechanism following functions were removed from hstreams_source.dll binary interface (only on Windows):

- *hStreams_Init*
- *hStreams_app_init*
- *hStreams_app_init_domains*

Those functions are still available in hStreams API (For more information please refer to hStreams headers).

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