SISCI API 2.0 Migration Guide

Version 1.1

Date: 1ˢᵗ June, 2016

SISCI API 2.0 changes

Dolphin strives to keep its SISCI API implementation stable to minimize changes to customer applications, but some times changes are required to support new functionality for the future. The SISCI API 2.0 bring some new features that required some small changes to applications using the SISCI API.

The new SISCI API 2.0 is available with the DIS 5.0 releases for IX and PX products. The DIS 4.4 release provides the previous SISCI API 1.

Large segments

New hardware (Dolphin's PCI Express IX and PX products) supports very large segments beyond 4 Gigabytes. To enable SISCI applications to benefit from this, all instances of segment size and segment offset in the API has been changed from unsigned int to size_t. The API change affects the following functions:

- SCIGetRemoteSegmentSize()
- SCIMapRemoteSegment()
- SCIMapLocalSegment()
- SCICreateSegment()
- SCIAttachPhysicalMemory()
- SCIMemWrite()
- SCIMemCpy()
- SCIRegisterSegmentMemory()
- SCIAttachLocalSegment()
- SCIStartDmaTransfer()
- SCIStartDmaTransferVec()
- SCICacheSync()

The ability to create segments larger than 4 Gigabytes will be introduced in the DIS 5.4 release.

New functionality:
The SISCI API 2.0 introduces some new functionality.

Interrupts carrying data
The SISCI API introduces a set of new functions to send and receive interrupts carrying data. These functions supports sending data to a single node or to all nodes using multicast.

SCICreateDataInterrupt(), SCIConnectDataInterrupt(), SCIRemoveDataInterrupt(), SCIWaitForDataInterrupt(), SCITriggerDataInterrupt()

New CPU cache flush function
New function to establish IO coherence on platforms that do not provide IO coherence in hardware. Currently, this only applies to Tegra K1 (ARM32 system). This SISCI Function is defined for all platforms but has only effect on Tegra K1 systems.

SCICacheSync()

SISCI API versions

Detailed changes to the SISCI API implementation, e.g. new hardware dependent flags, can be found in the file SISCI_API_UPDATE.txt

The SISCI header file sisci_version.h includes macro definitions that can be used to write code to handle various versions of the SISCI API implementation.

SICSI API resources for version 2.0

The full functional specification can be found at

http://ww.dolphinics.no/download/SISCI_DOC_V2/index.html

The SISCI API Users Guide can be found at

http://www.dolphinics.com/download/SISCI/OPEN_DOC/SISCI_API_2_users_guide.pdf

General information about SISCI can be found at

http://www.dolphinics.com/products/embedded-sisci-developers-kit.html

Please contact Dolphins support line at pci-support@dolphinics.com if you have any questions.