Product Brief

MCCI ExpressDisk™ UAS Driver for Windows

Storage Networks: Performance

Evolution in transport protocols and interconnect technologies has enabled faster and more reliable data transfer. The capabilities of the host operating system, specifically of the host OS drivers, are a key part of this evolution.

In Microsoft Windows 2000, XP, and Vista, the SCSIport driver was used to deliver SCSI commands to storage targets.

Because of limitations with the SCSIport driver, Microsoft issued the Storport driver as of Windows Vista SP1. The Storport driver is the current standard for mass storage applications.

MCCI ExpressDisk UAS Driver

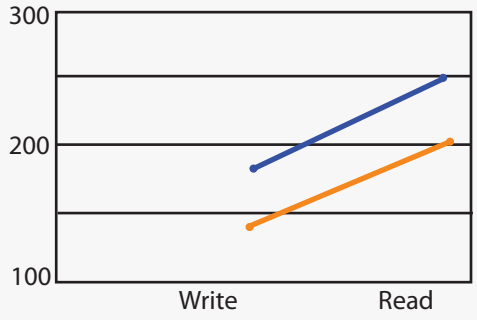
The MCCI ExpressDisk UAS Driver for Windows XP and later versions is a Mass Storage class driver. It works with the Microsoft-provided Windows-host storage driver to maximize the performance of mass storage USB peripherals.

The MCCI ExpressDisk UAS Driver utilizes the Windows-provided Storport Driver to achieve better performance. The MCCI ExpressDisk UAS driver is a complete replacement for Mass Storage Class.

The MCCI ExpressDisk UAS driver takes full advantage of USB 3.0:

- Streams
- Full duplex transport
- Overlapped Operations
- Native Command Queuing (NCQ)

Benchmark Test Results



Sequential

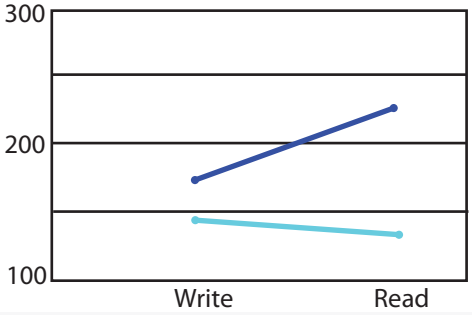
MCCI (UAS)
Write - 181.6
Read - 252.3

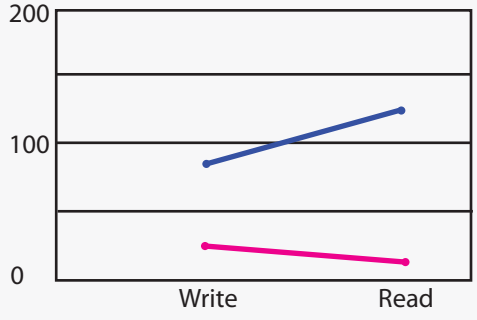
Microsoft (BOT)
Write - 142.4
Read - 202.6

512K

MCCI (UAS)
Write - 168.3
Read - 223.9

Microsoft (BOT)
Write - 142.2
Read - 130.6





4K QD 32

MCCI (UAS)
Write - 89.66
Read - 123.4

Microsoft (BOT)
Write - 35.23
Read - 18.72

Contents

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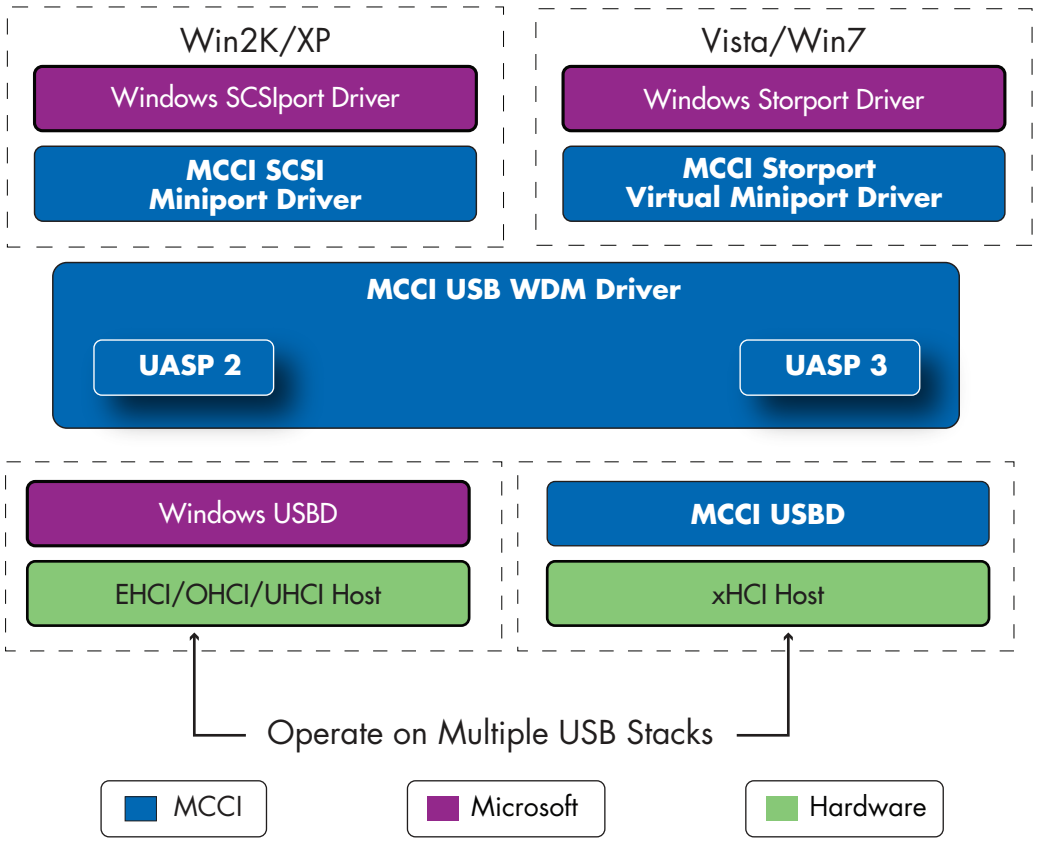
Product Details

To the user, the MCCI ExpressDisk UAS Driver appears to be OS-version neutral. MCCI's Storport miniport driver is loaded for Windows Vista SP1, Server 2003, and later Windows versions. MCCI's SCSIport miniport driver is loaded for Windows 2K, XP, and Vista without SPs.

- USB Standard Device Requests
  - USB 2.0 Specification, Section 9.4
  - USB 3.0 Specification, Section 9.4
- UASP Commands
  - UAS - Working Draft Revision 4, Sections, SPC-4 and SBC-3

MCCI ExpressDisk Driver Architecture



Design Advantage

The MCCI ExpressDisk UAS Driver passes on the data as is from the file system to the bus driver by interacting with the SCSIport and Storport drivers. The MCCI ExpressDisk UAS driver does not complete any SCSI Request Block (SRB) unless the data is sent over the bus and a Channel Status Word (CSW) is received, thereby delivering the best performance. Most other drivers use usbstor.sys and thus cannot receive SRBs greater than 64KB from the file system. These drivers either pass the received request onto the bus driver or they cache, combine, and fake the completion of the request in order to pass on the resultant block to the bus driver. These behaviors scuttle performance and also risk data being lost upon surprise removal. The MCCI ExpressDisk UAS Driver offers unparalleled performance advantages:

- Performance enhancement in Sequential Read/Write
- Performance enhancement in Random Read/Write
- Low CPU usage