INCITS: Technical Committee T10 on Small Computer System Interface (SCSI) Provides Multi-Vendor Storage Device Interoperability

Background

In the 1970's, there were dozens of magnetic disk drive vendors and each vendor had many different disk drive interfaces. System vendors were spending large amounts of money developing controllers for these products. In some cases, the system vendors would develop multiple controllers for the same disk drive because entry-level, mid-range, and mainframe products used different 'motherboards' or 'backplanes'.

Problem

The time to develop these controllers slowed the introduction of new products. Disk drive vendors often had to wait a year or more before they saw any significant sales volume on new products. Of course, this impacted revenues and profits.

Approach

The computer industry was ripe for a standard storage interface. A key thing that enabled a reusable storage interface was the abstraction of storage devices into a large array of logical blocks. It was necessary to hide the details of cylinders, heads, sectors, and other device-specific characteristics, such as bad block sparing, so that the computer system only saw a large array of usable blocks no matter how the underlying storage device worked.

The Small Computer System Interface (SCSI) was born in the early 1980s along with a few other competing intelligent storage interfaces. SCSI survived and flourished in no small part because it was developed in an open standards development environment then called X3, now known as INCITS.

Over the years, the singular SCSI standard has been replaced by a whole family of SCSI standards adding a plethora of features and transporting the SCSI command sets over almost every modern I/O interface.

Outcome

SCSI is an outstanding success story through the participation of numerous vendors including systems suppliers (e.g. Dell, HP, IBM, Oracle), hard disk drive vendors (e.g. Seagate, Toshiba, Western Digital), solid state device vendors (e.g. Intel, Micron Technology, SanDisk), and other storage product vendors (e.g. tapes, CDs, DVDs). Virtually all modern enterprise storage devices conform to the SCSI architecture. This enables new storage devices to be placed into service quickly with almost guaranteed interoperability.

Another key piece of the SCSI success story is the SCSI Trade Association (STA, www.scsita.org). This marketing group was formed in 1996 and has been instrumental in guiding the development direction of T10 SCSI standards (www.t10.org).