

Re: Difference between IDE and SCSI ??

Source: <http://linux.derkeiler.com/Mailing-Lists/Fedora/2008-02/msg00319.html>

- *From:* Bob Kinney <bc98kinney@xxxxxxxxxx>
 - *Date:* Sun, 3 Feb 2008 00:16:16 -0800 (PST)
-

Hi;

Can someone briefly explain to me the difference between an IDE (ATA) and a SCSI device. After having done due diligence with google searches etc., I am still in a quandary. Nothing I read seems to be consistent. Every time I think I have it figured out, I read a reference that calls for or lists IDE devices that I think should be a SCSI reference and vice versa. Even going to the various standards sites doesn't clarify it for me. In fact it makes it more confusing.

Therefore, can someone explain, in plain language, how I should use the terms IDE or PATA, and SCSI correctly with regards to a current computer? What specific attribute of a device or bus does each term apply to?

Given below are some questions that spring to mind. They may be mis-formed questions and therefore need not be answered, but they may demonstrate where my confusion and misunderstanding are coming into play.

e.g.

Does IDE refer to the physical device?

Or, specifically just to the bus used?

Or, to the driver for the device?

Or, the type of interface (plug)?

Does SCSI refer to a set of protocols used when designing the device?

Or, to a specific driver design?

Can you have an IDE device without SCSI?

Or, can you have a SCSI device without it being IDE?

Below, I have listed a few of the sites I have visited with the definitions given to show I have found the history and some attempts at an explanation. I long ago learnt that any manual's reference to IDE or SCSI usually simply meant some reference to my hard drive. I am aware it could also mean my CD or a DVD, but usually it is a reference to a HD.

Re: Difference between IDE and SCSI ??

I like to use automobiles for analogies to computers. The data storage subsystem can be compared to any subsystem in a car, whether it be fuel, ignition, electrical, or seating.

For simplicity's sake, let's just focus on the data storage subsystem: the hard disk drive. IDE and SCSI are two different, and incompatible data storage subsystems, and the differences can be compared to VHS vs Beta. Similarly, (IMO), the technically superior system has lost out. I still cannot fathom why modern computers still do not use SCSI.

In the old days, computers needed a controller card to manage how the information it needed to store was physically stored on the hard disk drive. This controller actually told the drive how to physically manage the placement of the data on the drive.

SCSI changed that in some respects, in that the connected drives themselves had some "smarts" built into them, and managed the data associated with it by itself. The controller card simply passed commands to the drives that told it what to store or what to retrieve. SCSI offered the ability to hook up a maximum of seven hard disk drives in a daisy chain fashion.

But then came AOL, cheap computers, and droves of dumbshits who found it difficult to handle the ability to keep track of the requisite drive numbering, and this, combined with most users' lack of a need for seven hard drives provided the incentive to create a simpler, and possibly cheaper, way of connecting disk drives to your system.

The result was IDE (Integrated Drive Electronics), a system that allowed your computer to interface directly with the drives, by putting the "smarts" right on the drive itself. This system provided the ability to connect up to two drives on a channel, designated "master" and "slave." The IDE system later was renamed "ATA," and I cannot tell you what the acronym stands for, but for all intents and purposes IDE = ATA.

With one exception, both SCSI and IDE/ATA are electronically parallel systems. SCSI is NOT serial, except for fiber channel.

So, to answer your main questions:

Does IDE refer to the physical device?
Or, specifically just to the bus used?

IDE, or ATA, or in most historic cases, PATA, refers to a physical and/or electrical bus that provides connectivity for drives that are designed for that bus.

Or, to the driver for the device?

Re: Difference between IDE and SCSI ??

Re: Difference between IDE and SCSI ??

Possibly, in certain contexts. But strictly speaking, no. It is a physical and electrical specification.

Or, the type of interface (plug)?
Yes.

In terms of the operating system, the driver must know how to "speak" IDE in order to save/retrieve data on an IDE device, and will use a different driver to communicate with a SCSI controller, just as it uses another driver to communicate with your video, chipset, processor, and other subsystems.

I can understand your confusion, because Fedora has begun labeling *all* internal storage devices as "sd", as in "SCSI device", whether or not it actually is on a SCSI or IDE chain.

Hope this helps.

--bobcat

Never miss a thing. Make Yahoo your home page.

<http://www.yahoo.com/r/hs>

--

fedora-list mailing list

fedora-list@xxxxxxxxxxx

To unsubscribe: <https://www.redhat.com/mailman/listinfo/fedora-list>