SB: One Size Fits All

New monthly columnist Nick Klingaman

Before we begin . . .

Welcome to "Apple Talking," a new column written by yours truly, Nick Klingaman.   In the months to come, this column will contain both basic and technical information about Macs, information that I hope will satiate the interests of newcomers to the Macintosh platform (or to computers in general) and old tech heads alike.   If you ever have any comments about this column, or any specific article, feel free to e-mail me at nicksuiko@aol.com.   I won't bore you with the details about how many Macs I've owned (3) or stuff like that, so let's get right to the issue at hand: USB.

What in the world is he talking about?

For those of you sitting there and scratching your head, thinking that this column has already gone over your head with just the mention of three letters, let me explain.   USB stands for Universal Serial Bus, and it is widely regarded as an up-and-coming technology by many in the computing world.   USB provides a standard connection for keyboards, mice, modems, speakers, printers, scanners, removable drives, and just about anything else you can come up with.   It basically lets you get rid of all those different (and sometimes confusing) connectors on the back of your Mac and replace them with a single connection.   Pretty simple, huh?

Each USB bus can hold 127 different devices.   (A bus is the means by which the processor of your computer "talks" to other devices.)   Some of you may be wondering how in the world you can plug 127 devices into two connectors on the back of your computer.   This is where USB starts to get a little tricky, and also begins to take up space on your computer.   In order to connect all of these devices, the developers of USB came up with a box called a "hub."   Hubs are currently available in 4 and 7-port varieties, meaning that you can plug 4 or 7 things into them, respectively.   Each hub is then either plugged into the connector on the back of your computer, or is attached to another hub, forming a huge chain.   But you don't really need to worry too much about

this; I doubt that too many of us need more than 5-8 devices connected to our computers.   (If anyone has more than 15 USB devices, I'd love to see a picture.)   So suffice it to say that USB will be expandable for quite some time to come.

I've never seen a USB connector before.   Where are they used?
Well, for those of you who own an iMac or a new blue and white G3, this is an easy question to answer.   Apple has made a very large commitment to USB in the past few months, making it the only local connector on the iMac, and the preferred connector on its new line of pro, blue and white G3's (which will hereafter be referred to by their code name, Yosemite, because this columnist thinks it is a much better name).   Apple believes, as do many in the PC world, that USB is going to be the connection of the future because it is so simple and standardized.   However, no PC makers have taken the drastic steps that Apple has, eliminating all other connectors in favor of USB.

Replaced by USB is the serial (the standard ports for printers and modems), SCSI (pronounced "scuzzy," the high-speed, sometimes finicky connector found on every Mac since the Mac Plus), ADB (the keyboard and mouse connector, although Yosemite has one), and to some degree, the sound input jack as more and more USB speakers are appearing.

If don't have an iMac or a Yosemite, how can I get USB?
Well, if you have a PCI-based Power Mac (consult your owner's manual if you are unsure), it's simple.   There are a variety of manufacturers offering USB cards so that owners of older Macintoshes can join the fun.   The one that Apple recommends is Key span, who produces a 2-port card, and ships it with Apple's USB drivers.   You'll shell out about $60 for this card, which doesn't

However, if you feel like doing some shopping over in the PC section, and you're not afraid to mess around with a copy of ResEdit (and if you don't know what that is, I do not recommend using it), you can buy virtually any USB PCI (Entrega and ADS are two that I recommend) card and simply download Apple's drivers from their developer Web site, or from their FTP site.   See the next section for details.   These cards will run you up about $40.

Hey, you promised technical information, where is it?
You're right, at the beginning of this article, I did promise to fill in all you computer nerds out there with some technical information regarding USB.   But remember, you asked for it.   USB transmits at a maximum of 12 Mbps, but in practice it usually only gets to about 10 Mbps.   While this may seem slow in comparison to the 80 Mbps of SCSI II, or even the original SCSI I at 40 Mbps, it does serve the purpose it was required to do. Compared with the slow speed of serial, and the even slower ADB, which slugs along at something like 1/1000 of a Mbps, it replaces them with a higher speed connector.   If you swear by your Ultra SCSI connection, don't give it up for USB.   Better yet, go for something like FireWire, which transmits at 400 Mbps.   Quite impressive.   And considering with both of these technologies you don't have to set ID's or IRQ's (ha ha, Windows users), they're also relatively trouble-free.

USB is also hot-swappable, unlike the standard ports on a Mac, which always have a power current running through them.   You don't need to shut down your computer to unplug a USB device, but then again, how many of us always shut down our computer to unplug our speakers or modems?   Come on now, be honest.   USB also supplies power to devices through the bus, although few devices other than joysticks have taken advantage of this.   USB is cross-platform, so Mac and Windows can share the same devices, and only a few lines of code in the driver have to be changed.

Speaking of changing a few lines of code, that's what you need to do to use Apple's newest USB drivers with any USB card other than Keyspan's.   Version 1.1f3, still in beta testing but available for public download, has quite a few features that the "retail" version 1.01 doesn't have.   It's faster, checks through the bus more thoroughly at startup, and supports isynchronous transfers, not to mention multiple controllers, although I doubt anyone has more than one controller.   To use the drivers, however, you have to be able to change one of the resources in the file "USB support."   Simply open it up with ResEdit and add the resource "usbx" (you know not to use the quotes, right?) with one ID: 1984 (kind of brings back a sentimental feeling, doesn't it?).

A step in the right direction . . .
USB is definitely going to be around for a long time to come.   Most major PC manufacturers are including USB ports on their computers, which is always a good sign. While it can't accommodate everything, there is no USB networking, for instance, USB is definitely a step in the right direction toward a simpler computing experience.   I, for one, would love a standard that gave me only one connector, and enabled me to use popular Windows devices (scanners, printers, mice, etc.) without a lot of adapter hassle and wires sticking out behind my desk.

or more information
To learn more about USB in general visit: <http://www.apple.com/usb/>
To learn about USB products, visit: <http://www.apple.com/usb/usbproducts.html>
Developers interested in USB should visit: <http://dev.apple.com/>
To download the current Apple USB drivers:
<ftp://ftp.apple.com/developer/Development_Kits/Mac_OS_USB/>

Comments, suggestions, or flames?   Nick Klingaman welcomes your feedback on his new column.
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