

# tools of the trade



SecuriKey™  
Authentication

## All USB

If your USB ports are in the back of your computer or on the floor on the bottom front of your tower, you could use one of **Tripp Lite's 4-Port Ultra-Mini Hubs**. Plug it in, and you have four more USB high-speed outlets. With



Tripp Lite 4-Port USB Hub

the extension cable, it can sit on your desktop, or you can even toss it in your laptop bag. It's compatible with Windows 98 and higher and MAC OS 8.5 or higher, and it's plug-and-play—the devices are hot-swappable. The USB cable in the very small hub folds away inside under a lid that clicks shut. The unit receives power from your computer, but for devices

that need it, there's a separate AC power adapter. Described as an ultra-mini hub, with its plug stowed inside, it fits weightlessly in a shirt pocket. The hub handles USB 1.1 and 2.0 high-speed specifications. Information is available at [www.tripplite.com](http://www.tripplite.com). Look for model # U202-004-R.

The **ARCDisk** from **Archos, Inc.** is a tiny 2.7-ounce portable hard drive that measures three inches square (76 mm × 77mm). Its USB connection accommodates both 1.1 and the faster 2.0 specifications, and it will transfer data at speeds up to 480 megabits per second.



ARCDisk Portable Hard Drive

There's a 20 GB and a 40 GB model, giving you storage capacity for thousands of documents or more than 5,000 songs. Even though it's smaller than a 3.5-inch floppy, there's actually a hard disk spinning inside the case—a new-generation disk from Hitachi that measures 1.8 inches. And it doesn't require a separate power supply; you just plug it in as a USB utility. The external drive is compatible with Windows 98SE, ME, 2000, and XP. More information is available at [www.archos.com](http://www.archos.com).

The **SecuriKey™ Authentication System** from **Griffin Technologies, LLC**, uses a

small USB token that works like an ignition key when you plug it into a USB port on your computer. The key not only prevents unauthorized access in the office, but if your laptop is stolen, the thief can't get to your files without the SecuriKey token. The system uses a two-factor authentication—to get in, you need something that only you know (a password) and something that only you have (the SecuriKey). With each token different from all other tokens, there are no “master keys” that can be used on a number of computers. The SecuriKey 1.2 for companies permits multiple logon profiles, so you can require a token or set up an alternate “token not required for logon,” which will permit password-only access to a particular PC. Other customizations are also available to system administrators to simplify their controls. There is also a SecuriKey Personal Edition

## Big Deal? ◆ Michael Castelluccio, Editor

■ REALLY, HOW MUCH DIFFERENCE CAN A PLUG MAKE? One plug sure looks like another when you're crawling around on the floor looking for the other serial connector in the back of your computer to add a scanner or printer. And surely you don't want to do this more than once—get it done and forget it. That's why those cables are held in place with bolts once you get them plugged in, right?

Well, that was yesterday. Consider the following scenario. You have a half-dozen new utilities you want to plug into your desktop—card reader, MP3 player, speakers, number keypad, small photo printer, and graphics tablet. If

these came with those two-inch-wide parallel or serial plugs, you might be able to connect two of them before you had to open the computer and start putting in additional outlets for the nine- or 25-pin little monsters.

But if these devices are recent purchases, they likely will have USB connectors, so there's no problem. In fact, you could theoretically connect 127 new devices to your computer, and it, and the devices, would still work. Six new pieces of hardware would be cake. Buy a small, inexpensive USB hub, plug it in to your computer, plug in the peripherals, and that's it.

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PowerMate

for locking personal PCs, laptops, and small office/home office machines. With the personal key, you can use the token to lock the machine or enable partial access without user authentication. Both systems are described at [www.griftech.com](http://www.griftech.com).

If you've gotten into the habit of listening to Internet radio stations while you work, and the speaker icon is what you use to control the volume, or you have to reach around the monitor to get to the dial on the speakers,

there's a better way. The **PowerMate** from **Griffin Technology** is an oversized chrome control knob that sits anywhere on your desk. It gives you a volume control seated atop a soft-plastic-encased blue light that grips the surface of your desk. Push down, and the knob clicks to mute for phone calls or other communications. It's also programmable so you can assign five commands for other applications or browsers. As an Excel power control you can twist right to move to the

cell on the right, twist left for the left cell, click to open the cell, click and rotate right to go to the cell above, and click and rotate left to go down. The blue light on the base can be set to dim and light as the volume increases or decreases, or you can set it to pulse at various speeds or even to light up when an e-mail arrives. PowerMate is plugged into a USB port on your PC or Macintosh. Video editors also use it as a jog wheel when editing video, and Photoshop and Painter users can select brush sizes while using the other hand to continue drawing. Go to

[www.grifintechology.com](http://www.grifintechology.com), click on Products, and then look for PowerMate.

USB thumb drives are very handy, and they come in a wide variety of styles and capacities. But one of the most unusual flash memory drives has to be the **Meritline SpyPen™**. The pen is a quality writing instrument with Ministar refills from Germany, but the unique feature is the storage under its cap. Open the pen, and you expose a 128 MB USB flash drive that works in Windows, Linux, and Mac. Go to [www.meritline.com/mespusbpendr.html](http://www.meritline.com/mespusbpendr.html).



Meritline USB Pen Drive

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### Quick History of Past Plugs

When people started connecting things other than monitors to computers, they developed a standard plug called the serial plug. That was more than 20 years ago. The standard computer would have one or two serial plugs, and the connectivity was relatively slow. The larger, more recent, parallel plug was faster but even bulkier.

In 1996, the USB standard was created by a group of manufacturers



### USB 2.0 Type A Connector

including IBM, Microsoft, Intel, Compaq, NEC, DEC, and Northern Telecom. USB stands for Universal Serial Bus, and the three outstanding properties that made it so popular were its speed, it was hot-swappable, and one port could serve many connections. USB 1.1 transferred data at 12Mbps, making it much faster than serial and parallel connectors. You could plug the USB device in and unplug it without turning off the computer (hot-swappable), and the computer could get information from a plugged-in peripheral about its driver (plug-and-play). And most surprising of all, you could run more than 120 devices to the same USB port simultaneously.

In April 2000, USB 2.0 was introduced. Called high-speed USB, 2.0 was 40 times faster than 1.1 running at a maximum transfer rate of 480

Mbps. And with uncharacteristic foresight, the creators made it backwards compatible with 1.1. A new USB 2 device can be plugged into an older system with USB 1.1, and it will work—not with faster transfer speeds, but it will work. The number of USB devices you can connect moved up slightly with 2.0, also, to 127.

### How USB Works

Most computers today have two USB ports in the back of the machine, and many manufacturers are moving these, or additional ports, to the front. When you buy a USB device, you simply plug it into your computer. If you have a fairly current OS, the machine will see the new device and either ask you for the proper driver, or it will load the driver from its own onboard library that came with the operating system. The most common USB connector is flat and rectangular and is called an A connector. There's a B connector that's hexagonal in shape that is less common, but there's no mistaking the difference. You can't accidentally plug a B connector into a standard A socket on the back of your machine. Well, not without a hammer. If the plug fits the socket, it will work.

With the number of new USB devices showing up, it won't be long before you run out of ports. The solution is a hub, like the one listed in Tools on the previous page. These are inexpensive and no more complicated than plugging in a strip of outlets. But unlike the hazardous overloading of house sockets made famous in Christmas-tree disasters in the movies, you can chain hubs together for dozens of outlets, and neither your computer nor the cat will pay a price for it. Hubs can be powered by their connection to your computer, or when a high-power device

like a scanner requires more than is flowing from the computer, hubs usually have a transformer that can be plugged into the wall for their own power.

One of the most amazing things that happens in USB connections is the sorting out of the different kinds of data that is going through the cable. A USB cable has only four wires—one is for power, one is a ground, and two are twisted pairs for data transfer. The host (your computer) is able to keep track of dozens of flows from keyboard, mouse, speakers, MP3 player, external disk drive, webcam, printer, modem, and so on. Compare the cable and connector of USB to the old parallel printer cable and plug, and then consider the amount of information each is capable of intelligently managing. It may look like just a plug, but USB has dramatically changed what a single desktop can do.

### Tomorrow

There's a new specification called USB On-the-Go. With USB 2.0, your computer is the host, and all the USB devices connected to it are slaves. USB On-the-Go will eliminate the middleman so the devices can be connected to each other. They will decide among themselves which will act as host or slave. We don't think of devices like digital cameras or printers as computers, but they are smart enough to talk to other USB gadgets without a desktop holding their hands (cables). The new On-the-Go specification hasn't been approved by the USB Implementers Forum, but when it arrives, we can probably expect it to reach out to cell phones and handhelds first. Some expect it to be approved this summer, with delivery in chips at the end of the year. ■