

BUILDING YOUR OWN EXTERNAL HARD DRIVE

If you are like me, there is never enough storage to keep all of your data intact. Many manufacturers offer external hard drives, but you pay a premium to buy them. If you want to save some money and get more storage space—consider building your own device. By doing this, you can custom make your own device and it's easier than you might think.

Getting Parts

To build your own hard drive, you really just need to buy an external enclosure kit. Companies such as A-Power make them very inexpensively. When choosing a box, you just need to consider how you want to connect it to your computer. The three options you have include:

- 1) USB
- 2) Firewire
- 3) SCSI



The USB devices come in two flavors: USB 1.0 and 2.0 devices. The latter supports greater transfer speeds of data between the device and your computer—but don't waste your money unless your computer can support a USB 2.0 device. Only the newer computers over the past three years have been built with the capabilities of supporting higher speed USB devices. Another caveat you have to consider is that most USB hubs DON'T support USB 2.0 speeds even if they are connected to a computer than can support it. What you need to do is check the computer and the hub to make certain that the manufacturers have listed that they both support USB 2.0 devices. There is a noticeable increase in speed, so it is most definitely worth your time.

SCSI devices are somewhat obsolete in most systems. I used to run my Macintosh and PC using a SCSI adapter card because that was a reliable method. Today, you don't see Macintosh computers with SCSI as a standard feature any more. Adaptec and SIIG are two common manufacturers who build PCI adapter cards for the PC and PCMCIA adapters for your laptop to permit SCSI communications. While this technology has its merits, it is not as common today as either the USB or Firewire equivalents.

Like SCSI, several manufacturers build PCI and PCMCIA adapters that enable high speed data transfer through Firewire. Many hard drive enclosures support both USB and Firewire—giving you the option to connect any standard hard drive to your computer.



The most common type of hard drive that fits into these enclosures is a standard 3.5" IDE unit. The enclosure is easily opened and includes two connections:

- 1) IDE Cable
- 2) Power Adapter

It is really as simple as popping the drive right into the enclosure, plugging in the power cables, and connecting it to your PC.

Considerations



Remember that your new drive is still unformatted. Formatting your drive so that it's usable, however, is easy enough. When you first connect your new drive to your PC or Macintosh, the computer will recognize the device as new hard drive and ask you to format it. Assuming you are going to be connecting this drive to one or more PCs running the Windows XP Operating System, "NTFS" is the clear choice for the file system you should select for formatting. If you plan to move your new drive between PC and Macintosh systems, "FAT32" might make a better choice for a cross-platform device.

Automated Backups

There are a number of automated software backup tools that you can install to backup all of your data to these devices. If you are very worried about your drive, (especially if it is nearing its end of life), you can boot to a special program CD that will allow you to backup your entire C Drive to this unit. If something ever happens that causes your primary drive to fail, all you have to do is take the hard drive out of your external enclosure and install it in your PC.

Transporting Large Files

Best of all, nothing beats the price, speed, and capacity of an external hard drive for transporting very large files. If you are someone who deals with very large Photoshop, digital video, music, or PowerPoint files, an external drive lets you quickly store your images and transport them to any other computer. This is not only faster than burning a CD, but provides greater capacity and can be much cheaper in the long run than other storage alternatives.



Glossary

Universal Serial Bus (USB), an external bus standard that supports data transfer rates of 12 Mbps. A single USB port can be used to connect up to 127 peripheral devices, such as mice, modems, and keyboards. USB also supports Plug-and-Play installation and hot plugging.

Firewire, a very fast external bus standard that supports data transfer rates of up to 400Mbps (in 1394a) and 800Mbps (in 1394b). Products supporting the 1394 standard go under different names, depending on the company. Apple, which originally developed the technology, uses the trademarked name FireWire. Other companies use other names, such as i.link and Lynx, to describe their 1394 products. A single 1394 port can be used to connect up 63 external devices. In addition to its high speed, 1394 also supports isochronous data -- delivering data at a guaranteed rate. This makes it ideal for devices that need to transfer high levels of data in real-time, such as video devices. Similarly to USB, 1394 supports both Plug-and-Play and hot plugging, and also provides power to peripheral devices.

Small Computer System Interface (SCSI), a parallel interface standard used by Apple Macintosh computers, PCs, and many UNIX systems for attaching peripheral devices

to computers. Nearly all Apple Macintosh computers, excluding only the earliest Macs and the recent iMac, come with a SCSI port for attaching devices such as disk drives and printers. SCSI interfaces provide for faster data transmission rates (up to 80 megabytes per second) than standard serial and parallel ports. In addition, you can attach many devices to a single SCSI port, so that SCSI is really an I/O bus rather than simply an interface.

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