

***Burn Your Data***



Most users don't backup their critical data files often enough, and trainers are no exception. As a general practice, we don't keep multiple copies of our training documentation and exercise files, let alone keeping multiple copies in multiple locations.

***Exercise files must be portable***

Student exercise files must be portable. They're no good to us if we can't carry them with us into the training room for the upcoming seminar. Many training centers network the student workstations and this makes distribution of student files a snap; however, most temporary training rooms (a.k.a. conference rooms) don't have enough network drops for each of the temporary workstations. Without an easy way to install the student files, you and the students are out of luck.

**A typical CD stores 650-700MB of data. Newer media formats store even more data; however, they exceed industry compatibility standards.**

Exercise files for Microsoft Access, Microsoft Project, Adobe PageMaker, and many other programs are often larger than 1.44MB, the capacity of a 3.5" HD (High Density) diskette.

Data compression programs like WinZip (winzip.com) can compress files up to 95% but some files don't compress at all. And, you have to know how to create a self-extracting ZIP file or purchase WinZip software licenses for each workstation. If not, the compressed file is unusable.

What's a trainer to do with a few dozen megabytes of exercise files that need to be installed for tomorrow's training seminar?

***CDs add storage capacity***

I suggest you burn (write) all of your student exercise files to a single CD (compact disk) and carry this master disk with you in your training bag. I haven't seen a PC without a CD-ROM drive in the last five years; however, you will have to check to make sure that your students' workstations each have a CD-ROM drive.

A typical CD stores 650-700MB of data. Newer CD media store even more data; however, they exceed the industry capacity standard, and they may not be accessible if inserted into an older CD-ROM drive.

CDs are measured either by their data byte capacity or the duration of digital music they can store. For example, a CD that stores 650MB of data could store up to 74 minutes of music that's created as uncompressed WAV files (the standard for all CD music players).

A CD that stores 700MB of data could store

80 minutes of uncompressed WAV music.

Note, new digital music formats, such as MP3 significantly compress the music files and allow tens of hours of music to be stored on a single CD. However, music in this format requires a CD play with a specific decoder (hardware or software) to play the songs.

**Storing files on a single disk isn't helpful if you can't access them in the training room.**

***High capacity alternatives***

In addition to CDs, Iomega ZIP disks come in two capacities: 100MB and 250MB. LS-120 SuperDisks store 120MB of data on a 3.5" diskette, Castlewood Orb disks store 2.2GB of data.

Other storage formats are available; however, each requires a special disk drive that isn't as ubiquitous as the CD-ROM drive.

Carrying all your files on a single disk is worthless unless you can access the files in the training room.

***Learning to burn***

Creating a CD requires a CD-RW drive. It looks just like a standard CD-ROM drive; however, it can both read and write to CD media.

ITrain owns a number of CD-RW drives. We use them to create training CDs, distribution media for our certified learning guides, and backups of our critical data files.

I prefer drives from three manufacturers: Ricoh, Plextor, and Yamaha. I shun the other manufacturers because there are numerous reports of incompatibilities and many have limited hardware compatibilities.

The CD burners are speed rated just like CD-ROM drives. However, not all is as it may seem when you read the packaging.

Our Ricoh 8x4x32 burner is capable of burning standard CDs at 8x the minimum industry standard for multimedia CDs. It can burn rewritable CDs (CD-RW) at 4x the industry standard, and it can read CDs at 32x the benchmark.

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We've had this drive since early 2000, and it's a workhorse. It's ratings are by no means the fastest on the market today; however, it spins up and starts to write (burn) and it closes (ends the process) much more quickly than other drives we've used.

For us, writing a small amount of data (a 100MB or less), it's actually faster to use this CD-RW drive than one of the newer, faster-rated drives.

## Training Technology

by Dave Murphy

For larger capacity CDs I prefer our Yamaha 16x10x40 CD-RW drive. It's 16x burning speed let's us create 700MB disks in about six minutes, including spin-up and closing.

The Yamaha's 10x rewrite speed let's us quickly create 700MB data backups using rewritable (reusable) CD media.

### **CD-RW Limitations**

While 700MB is sufficient for storing training exercises, it's often not enough for backing up the workstations.

For workstation backups, we use a combination of Symantec's Ghost program ([www.symantec.com](http://www.symantec.com)) and our CD-RW media.

We install a second disk volume on each workstation (either a separate hard drive or a second partition on the single hard drive\*).

**Symantec Ghost and a CD-RW drive make a perfect combination for system backups.**

The Ghost program creates a compressed digital image of the C: drive (the primary volume) and stores it on the D: drive (the second second volume). The image can be used to reinstall all files back to the C: drive after class. It's a great way to restore workstations after students have modified the system's settings.

Ghost can create the backup image in segments no larger than 700MB, so they easily fit on a CD. With these CD backups, you've got bit for bit digital backups of each workstation, ready to be reinstalled following a system crash or a hardware upgrade.

Symantec Ghost and a CD-RW drive make a perfect combination for system backups.

### **Research before you purchase**

Before you head to the store to purchase a CD-RW drive, do your homework. Check the search engines and Usenet newsgroups for comments about the available CD-RW models. Remember, our experience with the "slower" Ricoh drive? Overall, it's faster than other high-performance drives when we're burning lower-capacity CDs.

If you have any questions, drop me a note. I'm glad to share our experiences. My email address is [member@itrain.org](mailto:member@itrain.org).

### **Upcoming articles**

Watch for other articles on the topic of portable media in this publication series. I'll review DVD burners and other new technologies as they become available.



\* If you'd like to create a second partition on an single hard disk without losing the existing file system, try Partition Magic from PowerQuest ([powerquest.com](http://powerquest.com)).



ITrain  
International Association of  
Information Technology Trainers  
6030-M Marshalee Dr PMB 616  
Elkridge, MD 21075-5987  
410.567.5366 or 888.290.6200 or  
801.650.0423 (fax)  
[itrain.org](http://itrain.org) [member@itrain.org](mailto:member@itrain.org)