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MAKING JOB BACKUPS



As reliable as computers generally have become, many things can still happen to cause corruption or even loss of data.

Power outages, hardware failures, and even others tampering with your files provide good reasons for making backup copies of your work.

If you are in a networked office environment, you probably have a system administrator who is responsible for making regular backups of the system data—most likely on a tape device—but you may want to back up portions of your own files as well. Maybe you have a project you want to refer to at some time in the distant future but don't want it taking up space in your home directory until then, or perhaps you have a job that is so essential, the regular system backup doesn't provide enough security to protect it. Maybe you need to copy large files on some type of transportable media to send to someone, or maintain archives of projects that are no longer current. In any case, you might have a number of reasons for backing up portions of your work.

For small jobs, a floppy disk might be sufficient. The “Making the Konqueror File Manager Your Friend” section in Chapter 3 discusses accessing the filesystems of floppy disks, and the “Working with Files” section explains copying files. If the files you want to back up exceed the standard 1.4MB limit of a floppy disk, however, you'll need to go to a medium with more capacity, such as a Zip disk or an LS120 Super Disk, which hold 100MB and 120MB, respectively (note some Zip disks hold 250MB). The problem is that although almost every computer has a floppy drive, not all have Zip or LS120 drives, making those options less than ideal for transporting data in some situations. CDs

are another option. Their standard 650MB capacity and the ubiquity of CD drives make them a good choice.

This chapter explains how to make backups to these portable media.

The Ark Archiver Backup Utility

KDE includes a GUI program for using various popular UNIX backup formats. The program is called Ark. It can group files together into a single file and even compress them so they take up less space on your portable media. Unpacking files created by Archiver is covered in the “Working with Files” section of Chapter 3. Here we show you how to create file archives.

In some cases, simply copying whole files or directories onto the backup media—in the same way you would copy them into another directory on your hard drive—may be sufficient. However, compressing the data in some way is often a more efficient, “cleaner” method.

The Ark utility provides a way to do this compression. Open Ark from the Utilities submenu of the K menu. Your goal is to group the files you intend to back up into either a single file or at least fewer files. For instance, if you back up your home directory, you may want to have a separate archive file for each of its subdirectories.

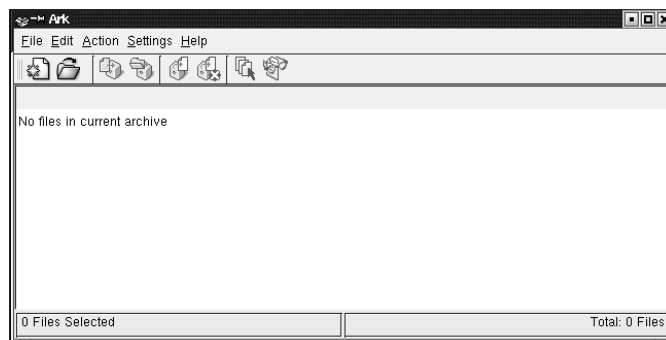


Figure 12.1: The Ark Utility

To create a new archive file, select New from the File menu. This will present a window with a directory display. The default is your home directory. A sidebar display is on the left to speed the browsing of files.

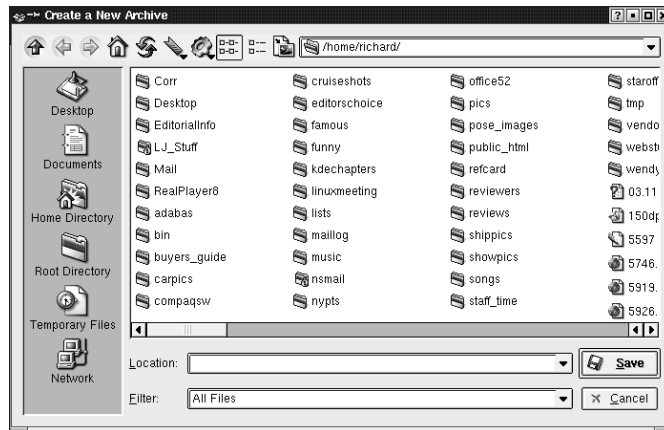


Figure 12.2: The Create a New Archive Window

Type the name you want to give your new archive file in the Location bar at the bottom of the window. In the bar at the top, type the pathname of the directory you would like displayed. The directory displayed in the top bar is where the archive file will appear when created. The format that Ark creates is determined by the extension you append to your filename. For example, `.tar` is the extension for the popular tar format, and `.tgz` (or `.tar.gz`) is the format for a gzipped (compressed) tar file. So if you want your archive file to be compressed, make sure your filename ends with `.tgz` (for gzipped tar file). These two may be the only formats you need, unless you work with the files on computers with other, non-UNIX-compatible operating systems. In this case, you may need the Zip format, though other operating systems' archivers may understand the `.tgz` format.

Once you have named your archive file and clicked OK, you will return to the first Ark window. Notice that the window's titlebar at the top now includes the name of the archive you entered. From here, you can select the files you want included. Choose Add File from the Action menu. In the window that appears, you can select the files you want included in the archive file. To select multiple files that appear together in the display, highlight either the first or last file, press the ENTER key, and use either the up or down arrow key to highlight adjacent files.

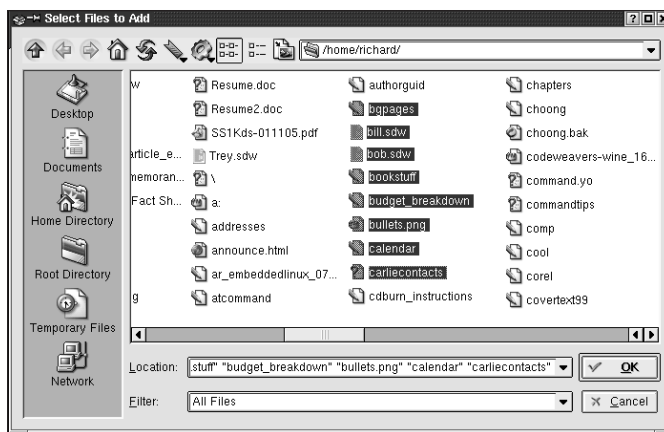


Figure 12.3: Selecting Multiple Files

After the files are selected, you can view, open, or delete from the main Ark window. The mere act of naming an archive file and adding files to it creates the archive file. If you then add or delete files in the Ark window, the archive file will immediately update. Look in the directory where you made the file, and it will be there. Now you have a single backup file that you can copy conveniently to any portable media. Refer to the section “Accessing Files on Removable Media—CD-ROM and Floppy Disk Drives” in Chapter 3 to access the filesystems of any floppy, Zip, or Super Disk drive on your system (the process of copying files onto a writable CD-ROM drive is a bit different and is covered in the next section). Once you have mounted the drive, copying your archive files via the Konqueror file manager is the same as copying them from one place on your hard drive filesystem to another (see “Working with Files” in Chapter 3).

Burning Data to CDs with KOnCD

The process of putting data onto a CD is somewhat different from recording data to other media and is referred to as *burning*. CDs that are both writable and readable are available, but the most common type for making backups is write-once, read-only. This means that once they have data written to them, they become read-only. The data remains “burned” there permanently.

In addition to making backup CDs with KOnCD, you can also make audio CDs that are playable in an ordinary CD player.

Preparation

You will need a CD recorder—either a CD-R (CD-recordable) or CD-RW (CD-rewritable) type—and a few disks. The differences between the two types of CD recorders are much like the differences between permanent and washable marking pens. You can erase and re-record over a CD-RW disk, but once you record onto a CD-R disk, it’s permanent. Another difference is that CD-RW disks may be used only in a CD-RW drive, while CD-R disks may be recorded and played in

either a CD-R drive or a CD-RW drive. Audio CD-Rs can usually be played in an ordinary CD player too. Have a look at the CD media table for more details.

	Erase	Record in CD-R drive	Play in CD-R drive	Record in CD-RW drive	Play in CD-RW drive	Play in CD player
CD-R data disk	no	yes	yes	yes	yes	no
CD-R audio disk	no	yes	yes	yes	yes	yes
CD-RW data disk	yes	no	no	yes	yes	no
CD-RW audio disk	yes	no	no	yes	yes	no

Of course, there's no way to know whether a disk recorded on one drive will play on another drive until you try it. The cheaper drives are less tolerant. To ensure that your disk can be played in the widest variety of drives, choose high-quality CD-R disks. On the other hand, if erasing appeals to you, and you don't expect to use the disks except in CD-RW drives, choose high-quality CD-RW disks.

If your system does not have KOnCD, it can be downloaded from the program's home page <http://www.koncd.org/>.

You'll also need read/write access to the CD device. If you need this access added, contact your system administrator.

While KOnCd is running, it will create a temporary file on your hard drive equal to the total size of the data you're recording. This file is called the CD image, or in KOnCd-speak, "the image." Verify that you have sufficient free space on your hard disk for this file.

TIP

Once you've successfully recorded a few CDs, try KOnCd's Burn on-the-fly option, which avoids the temporary file. This works only if your computer is fast and lightly loaded.

Burning a CD makes precise demands on CD technology. One common problem is buffer underrun, where the CD recorder needs a piece of data immediately, but the computer does not have it ready yet. By the time the data arrives, the disk has already spun beyond that point and is ruined. These disks make excellent coasters, but they are unplayable, so always keep a few extra blank disks on hand. Also, while buffer underruns abort the recording process immediately, other errors may not be detected. Always try reading a disk after you record it, especially if it's a backup disk. If you expect to read the disk in another player, don't *assume* it will work; try it to make sure. Once you've made a few disks on a particular machine and read them with the other player, you'll get a feel for how often it succeeds and how vigilant you need to be. But since we're talking about backups here, extra vigilance is better than not enough.

Starting Up

Start KOnCd by choosing it from the K menu (Multimedia • KOnCd), or by typing `koncd` in the Run Command box.

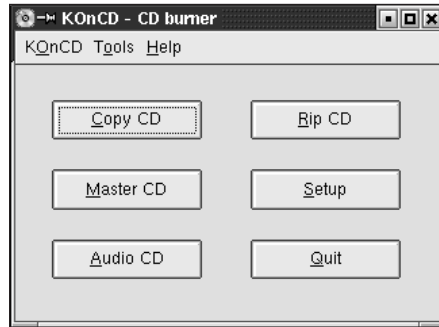


Figure 12.4: KOnCd Main Window

TIP

Depending on your system's file permissions, you may need to be root to run KOnCd or access certain features.

First let's take a short technical diversion to verify that KOnCd recognizes our drive. Press the Setup button in KOnCd's main window.



Figure 12.5: Setup Window

You should see an entry for both Reader and Writer. If not, you probably got an error message and may need to consult your system administrator.

While you're in the Setup dialog, choose the Enable Burn-Proof option. Burn-Proof is a technology that eliminates buffer underruns. It's effective only if the drive also has the Burn-Proof feature.

Click the Users tab to specify which users are allowed to run KOnCd. Otherwise, only root can make CDs.

When you're finished with the Setup window, select Save.

Backing Up Files

In the main KOnCd window, click the Master CD button.

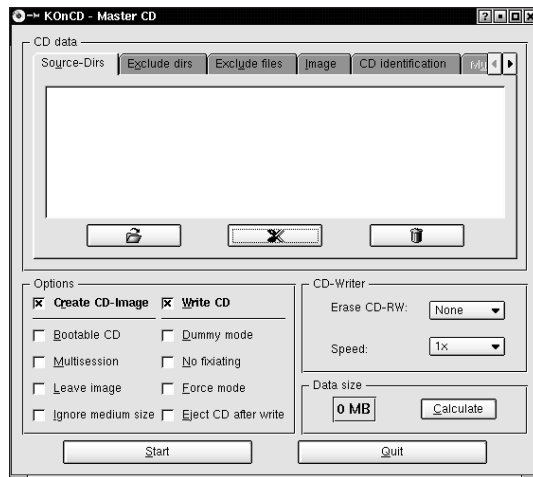


Figure 12.6: Master CD Window

The top section in this window, called CD data, contains a number of tabs. Here you indicate which directories and files to back up. The three buttons below this let you add an entry (the folder icon), delete an entry (the scissors icon), or delete all entries (the trashcan icon). Let's add the directory /tmp/burnable. Press the button with the folder icon. A Select Directory dialog box opens. Go to the directory and press OK.

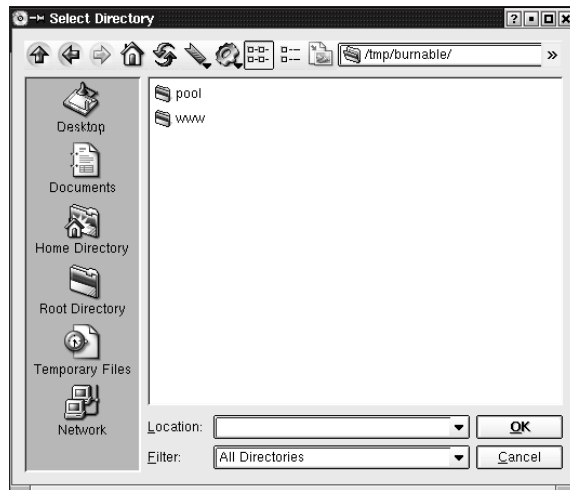


Figure 12.7: Select Directory Dialog Box

CDs generally hold a maximum of 650MB. To verify how much data you have selected, click the Calculate button. If there are items inside the source directories you *don't* want to back up, you can use the Exclude dirs and Exclude files tabs to exclude them.

There is a fourth important tab in the Data section: the Image tab. If the tab is hidden, use the little right arrow to scroll to it. Here you specify the path/filename of the image file (that temporary file). Choose a directory with sufficient space, and choose a filename ending in `.iso`. You don't have to use that extension, but that's the convention. For instance: `/tmp/cd.iso`.

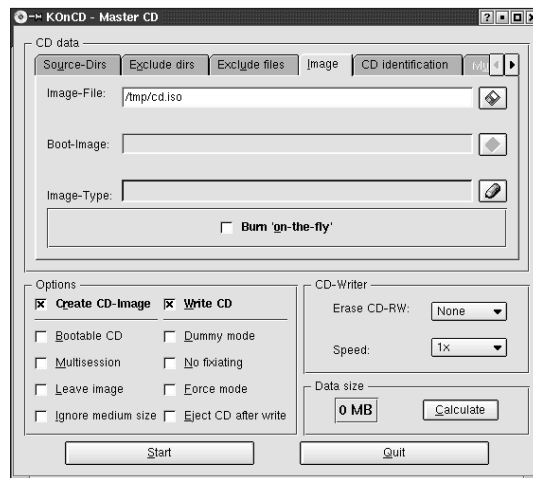


Figure 12.8: Master CD Dialog with Image Tab Visible

The Boot-Image section isn't important because we're not creating a bootable CD.

Image-Type (the button with the pencil icon) opens a dialog box containing a type selector and a lot of check boxes. The default image type (Unix Rock-Ridge) is fine if the disk will be read only on Linux or other UNIX systems. If the disk will be read on Windows systems also, choose Rock-Ridge + Win9x/NT. Click Save.

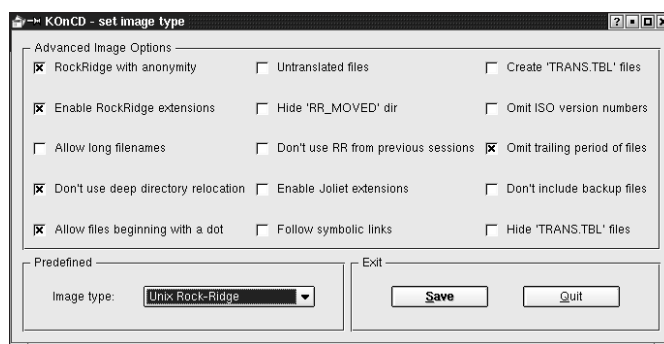


Figure 12.9: Set Image Type Dialog Box

Back in the Master CD window, you can choose the CD identification tab and fill in the text fields. These are optional.

In the CD-Writer section, choose an erase mode (if the disk is a CD-RW) and the recording speed. Choose the maximum speed supported by both your CD drive and your disk. If you don't know the appropriate speed, you can either experiment or use a relatively slow speed, such as 8x.

In the Options section of the Master CD window, there are several check boxes. Create CD-Image and Write CD are preselected because these are the actions you usually want to take. But you can choose any other options desired:

- **Bootable CD:** makes a disk you can boot from. Not covered here.
- **Dummy mode:** “Let's not and say we did.” Useful to verify that everything is ready to go before actually burning a CD.
- **Multisession:** allows you to come back and record more stuff later, if there's space left on the disk. This works even with CD-R disks. The catch is that some CD-ROM drives will recognize only the first session.
- **No fixiating:** leave it unchecked for now. (Note: there are some incompatibilities between No fixiating and Multisession, and between No fixiating and audio CDs. Read the online help for more information.)
- **Leave image:** means KOnCd won't delete the huge temporary disk file it creates. Select this if you plan to write several identical disks. Then, after making the first disk, uncheck the Create CD-Image box. That will save you several minutes.
- **Force mode:** makes the program ignore errors. Don't select this; it's not a good idea if your highest priority is to ensure the backup is reliable.

- Ignore medium size: ignores the disk's idea of what its own capacity is. Don't select this option.
- Eject CD after write: This is just a convenience. It does what it says.

Finally, click Start at the bottom of the Master CD dialog. The recording process will begin. With luck, in a few minutes you'll have a shiny new backup.

When finished, it's a good idea to mount your CD-ROM drive with your newly made CD (see Chapter 3) and verify that everything is readable.