



Getting cross with DOS

Simon Collin opens his postbag to reveal pressing problems with cross-linked cluster error messages in CHKDSK, controlling a modem, and sorting out the SORT command.

Checking out

Dear PCW: My PC developed a new error message when I last ran CHKDSK. I try and run CHKDSK once a week, and on the last occasion it reported that there was a cross-linked unit. The message included the names of two filenames, of data files that are important. I have tried to run CHKDSK with the "/f" switch to get it to mend the problem, but it keeps reporting the same error. So far, I seem to be able to access the two files without any major problems, but would like to either get rid of or solve the problem.

PCW Your error message is quite common. It occurs because one cluster (one part of the disk) is listed as belonging to two separate files. This normally happens because the FAT (file allocation table) that stores details of where files are stored on the disks, has been corrupted. Unfortunately for you CHKDSK cannot solve this problem, which is why you're not getting anywhere, even when you are running it with the "/F" switch that would normally fix errors.

You will either need to use a disk utility, such as Norton's Disk Doctor or PC Tools, or you can sort out the problem yourself. However, you are likely to lose data if you try and tackle the problem yourself: another case for keeping good backups!

To get rid of a cross-linked cluster error message, do the following:

1. Copy both files to a floppy disk or, if you don't have a floppy drive, copy them both to another separate directory on your hard disk.
2. Delete the original files.

3. Run CHKDSK to make sure that the error message no longer appears.

4. If the files are data files, open them and check for missing data. If they are application files, try and run the programs. If all seems okay, copy them back to their original locations.

The disk utilities I mentioned will try and fix the problem rather than just get rid of the message as I've described. To do this, the disk fixer utility looks at the two copies of the FAT (luckily, DOS keeps two copies of the FAT, just in case) and tries to work out which is correct and so spot the missing cluster. Once it's found the missing cluster, it can re-write the FAT and so both files regain their original full complement of clusters.

Modem muddle

Dear PCW: I have been frustrated by an annoying, if trivial problem that I hope you might be able to solve. I use a bulletin-board software program to provide a way for me to call into my office PC from home. I start the program when I leave and the modem is then set to automatically answer the telephone. In the mornings, when I quit the program, it doesn't seem to properly reset my internal modem and it remains in auto-answer mode. Since I cannot switch off the modem (it's internal), I have to creep under my desk and unplug the phone lead.

Is there an easy way to control a modem from DOS?

PCW There's a neat and simple way of controlling your modem from the DOS command line. In fact, you can use the

same method to control any standard peripheral such as a printer or even your monitor. The trick is to use the redirection symbol ">". Normally, I've given tips on how to use the redirection symbol for processing files, but in your case you can use it to send data to your stubborn modem.

Make a note of the COM port that your modem is using: even if it's an internal modem it will be set to one of the four standard PC serial ports — COM1 to 4. If the modem is a Hayes-compatible model, and almost all are, it will respond to the standard AT command set used to control modems. To turn off the auto-answer function of a modem, the AT command is:

```
ATS0=0
```

To get the modem to respond, you might need to send it a series of three '+' signs first (this is the usual way to tell the modem it's in command mode so that it will respond to AT commands). The full sequence is:

```
+++ATS0=0
```

To send this to the modem, use the ECHO command, which can work with text characters, and follow with the text string (above) and the redirection symbol. The full command is:

```
ECHO +++ATS0=0 > COM1
```

If you include this in a batch file, run the batch file when you get in to the office and the modem will be switched to normal mode. You can equally easily use the same technique to send any other setup string to your modem or to any other serial device.

On the right path

Dear PCW: Is there any way of extending the storage capacity of the PATH statement? I switch between Windows and DOS and so have different applications scattered around my hard disk. I have added a new DOS accounting program and this needs an entry in the PATH, but it's already full.

PCW PATH is an environment variable that is used to store the names of the directories and drives where you want

Out of sorts

Dear PCW: I have been trying out one of your ideas, sorting data using the DOS SORT command, but I cannot get it to work properly. I experimented with the results of the DIR command with great success, and could sort the output on any column. What I want to use the command for is to sort a text file of addresses that I've exported from my time-organiser program. The SORT program just goes haywire and sorts the file into no particular order at all.

PCW The SORT command is a useful little command-line tool that comes with DOS. It lets you specify any text file or input stream and sort the lines by the first character or by any column. For example, to sort a text file called "address.txt" on its 30th column (perhaps the surname of the entry) you would use the command

```
SORT /+30 < ADDRESS.TXT
```

I suspect that your text file has been formatted using tab characters when it was output. This will look fine if you display it on screen (for example, using the TYPE command), but it will fool SORT. The problem is that the tab character is a single character, so if you try and sort on a particular column that you've calculated from the display, the effect of the tab character is lost and SORT treats it as any other single character. The solution is to export the file without tab characters and SORT will work fine.

DOS to look for an executable file once it has looked in the current directory. PATH has a maximum capacity of just 127 characters which soon becomes a limitation.

You could set up a new path just before you want to run your accounting program, but by using the PATH= command you would simply delete the existing settings. An alternative would be to use the APPEND command. Although it can be useful, the APPEND command has a mass of possible switches that generally make it a pain to use.

The big advantage of APPEND over the normal PATH command is that it lets you set up separate search paths: one set for executable files and a second set for data files. This is unlike PATH which sets up a search path for an executable. APPEND doesn't normally use an environment variable, but you can force it to write its search path to a variable called APPEND. For your use, you won't gain anything by using the APPEND command (since you're dealing with executable utilities).

Perhaps the simplest, if not the most elegant, solution to your problem is to temporarily replace the PATH completely. I described how to do this when covering the redirection symbol last year: If you want to run the utility, delete the path, substitute the new path, run the utility, exit the utility and retrieve the original path. The trick to making this far simpler than it sounds is that if you enter the PATH command by itself, it displays the existing path in the form of a real PATH= statement:

```
C:\ > PATH
PATH = C:\; \DOS; \APPS
C:\ >
```

If you want to temporarily save this

Path, you need only redirect it to a file:

```
C:\ > PATH > OLDPATH.BAT
```

Now you have a batch file that, when run, will re-set the Path variable to the original. Now you can go ahead and change the path to point to the utilities and, finally, run the accounting program. For example, to run your accounting program, set up a batch file with one line:

```
PATH = C:\ACCOUNTS; C:\DOS;
C:\APPS\TOOLS
```

This resets the PATH to point to the accounting program along with DOS and any essential tools. Once you've run the application, to return to your original path, just run the OLDPATH.BAT file.

You mentioned that you also use Windows. This could help improve things (for once): attach the two little batch files above, OLDPATH and ACCOUNT, to two separate DOS icons. Now, if you want to run a utility, double-click on the Account icon and you have a DOS session with the correct path. For normal use, start the other DOS session with your usual, full path.

I explained how to attach a batch file to a Windows icon a couple of months ago, but if you've temporarily forgotten, do the following: Create a new icon and in its Properties box, add the command "C:\DOS\COMMAND.COM /K" followed on the same line by the name of your batch file.

PCW Contacts

If you've been delving into DOS and want to share your experiences, write care of *PCW* or via email to scollin@cix.compulink.co.uk or CompuServe 72241,601

