

Using Acorn's New

Kevin Bracey continues his quick guide to DOS on the Archimedes.

HARD DISCS

Unlike RISC OS systems, machines running DOS are highly reliant on disc storage for loading the operating system and for overlays in large applications (such as Windows 3). Modern PCs usually have high density (1.44 Mb) floppy drives and 20 Mb to 80 Mb of hard disc storage, and software increasingly expects this. To this end you will probably need to partition off part of your hard disc for the PC Emulator, especially as most Archimedes don't have high density disc drives.

CREATING THE HARD DISC PARTITION

To set up a new PC hard disc partition, first choose how much PC space you want, as it cannot be easily changed later. I would personally recommend 7 Mb or more, but it really depends on what PC software you use and how large your hard disc is. Make sure you have at least this much free space on your hard disc and run the PC Emulator (version 1.60 or later). Call up the *Configuration* window from the icon bar menu, and you will see a section headed *Hard disc drive files: 0*. To create the partition click on the '0', and the drive C icon will light up. Type the desired filename into the writable icon if you don't want to use the default filename, enter the size of drive (a whole number of megabytes) in the space to the right, and then click on the *Create* icon. You now have an unformatted DOS disc.

FORMATTING THE HARD DISC

PARTITION

The following instructions apply to MS-DOS 3 which is supplied with the PC Emulator when bought as a separate product. The procedure with DR DOS (supplied with Learning Curve systems) will be slightly different, so consult your manual.

Save your configuration settings as the default (press OK in the save box) and enter the PC emulator, booting up from your MS-DOS disc. Now we come to the tricky bit. At the A> prompt type:

```
FDISK
```

This will present you with a menu of options. Accept the defaults (by pressing Return) to format the whole of drive C as a DOS hard disc.

Now type:

```
FORMAT C: /S
```

to make the hard disc bootable. We now want to copy the whole of the MS-DOS disc onto the hard disc. We do this by typing:

```
MD C:\DOS
COPY *.* C:\DOS\
DEL C:\DOS\COMMAND.COM
DEL C:\DOS\CONFIG.SYS
COPY CONFIG.SYS C:\
```

The final step is now to tell the emulated PC where to find MS-DOS on the hard disc. We can do this by creating an AUTOEXEC.BAT file. Type:

```
EDLIN C:\AUTOEXEC.BAT
I
ECHO OFF
PATH=C:\;C:\DOS\
[Press Ctrl-C]
```

E

If you already have an AUTOEXEC.BAT file, then you should just add the line:

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

to it.

All you need to do now is remove your MS-DOS floppy (the PC will only boot from hard disc if the floppy disc drive is empty) and press Ctrl-Alt-Delete to reset the PC. It should now boot up from the hard disc. You can now proceed to install your PC software onto the hard disc, as described in the software's manual. Files can be copied using the COPY command (see below).

USING MULTIFS

If you want to look around the directory structure of your PC hard disc, or indeed floppy discs, or if you wish to transfer files from DOS to RISC OS (or vice-versa), it is easier to do so from within the RISC OS Desktop than the DOS command line. For this reason Acorn supplies Arxe System's MultiFS with the PC Emulator (RISC OS 3 users see below). This allows you to access your DOS discs in a similar fashion to ADFS discs. Running MultiFS will provide you with an icon, or icons, on the left-hand side of the icon bar representing each of your PC floppy and hard disc drives. Click on these in the normal fashion to look at DOS floppies or the PC hard disc partition.

Problems can be caused by the different format of filenames under DOS. DOS filenames can be up to 8 characters in length, with a 3 character extension (filetype). RISC OS filenames are limited to 10 characters. This means that a DOS filename may not be translated accurately. For example: CONFIG.SYS appears as CONFIG/SYS but AUTOEXEC.BAT appears as AUTOEXEC/B

This will cause no problems when copying from DOS to RISC OS. It may be a problem when copying from DOS to DOS or from RISC OS to DOS, as extensions will be truncated, resulting in incomprehension by the PC. To solve this, two alternative types of name translation are selectable from the icon bar menu. *Full* will attempt to display the entire, untruncated name. This will stop you copying from DOS to RISC OS, but DOS to DOS copying will now work correctly. Note that you will get the occasional *Not a heap block* error on this setting, but this is perfectly harmless.

Hierarchical translation works by placing the files in directories corresponding to the DOS extension. For example: CONFIG.SYS appears as SYS/.CONFIG (i.e. CONFIG in the directory SYS/).

This is more cumbersome, but is the only way of copying from RISC OS to DOS with a full filename and extension.

If you have a hard disc partition that does not use the default filename supplied by the PC Emulator (adfs::4.\$PC.Drive_C), then you must tell MultiFS about it, as it won't otherwise be able to find it. Load the

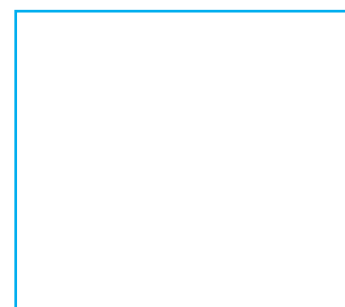


Figure 1

!Run file from the !MultiFS directory into Edit, and go down to the line:

```
⌘
"<PCE$Drive_C>" = ""
THEN *Set
PCE$Drive_C
ADFS::4.$PC.Drive_C
and change the
```

filename to that of your partition, then save it. Then double-click on the application or on the !Run file to make it take effect, or reboot.

RISC OS 3

When designing the new Archimedes operating system, Acorn decided that it was about time that they made the Archimedes more PC-compatible. Thus version 2.50 of the ADFS, supplied as part of RISC OS 3, can read, write and format DOS discs just as easily as if they were ADFS discs. It can understand all DOS formats on both 3½" and 5¼" discs. If you have a high density drive then you can use 1.2 Mb and 1.44 Mb DOS discs. To look at a DOS floppy disc just click on the floppy disc icon, and the computer will detect automatically that it is a DOS disc, and display its contents in a standard filer window.

To look at your hard disc partition,

DOS COMMAND	RISC OS COMMAND
dir [<dirname>] /w	Cat [<dirname>]
dir [<dirname>]	Ex [<dirname>]
a:	Drive0
c:	Drive4
cd <dirname>	Dir <dirname>
md <dirname>	CDir <dirname>
del <file spec>	Wipe <file spec> ~C
copy <source> <dest>	Copy <source> <dest>
xcopy <source> <dest>	Copy <source> <dest> R
cd ..	Up
type <filename>	Type <filename>
format <drive>	Format <drive>
chkdsk [<drive>]	Verify [<drive>]

Table 1

double-click on it. Its file icon (see figure 1) resembles a directory folder, and when you double-click on it the operating system treats it as a directory containing all your DOS files. If you are using version 1.60 of the PC emulator, you will need to set the filetype of the DOS partition yourself for this to work, as version 1.60 gives it the *Data* filetype.

NEW USERS

If you are new to DOS, then you will probably find its command-line based operating system somewhat of a shock after the RISC OS Desktop, and for this reason I have tried to make my instructions above as explicit as possible. I shall now devote a little time to DOS conventions to get you started, but for more detailed information you should refer to a book about MS-DOS.

FILENAMES

Under DOS, filenames take the form:

C:\WINDOWS\WIN.EXE

In this form, C: is the drive specifier (A:, B: are floppy drives; C:, D: are hard drives). The first '\' specifies the root directory (equivalent to '\$.'), and subsequent '\' symbols perform the same function as '.' in ADFS filenames. '.EXE' is the filetype extension, indicating that the file is *EXE*cutable (similar to a RISC OS Absolute file). So an equivalent filename in RISC OS might be:

adfs::4.\$.\$Windows.Win

FILING SYSTEM COMMANDS

Table 1 shows a quick cross-reference of some of the more common DOS commands to their RISC OS equivalents. Note that to back up a disc on a single floppy system, you should use:

DISKCOPY A: B:

and the computer will prompt for disc swaps as appropriate. A similar technique should be used for copying files from one disc to another, e.g.:

COPY A:FILE1 B:FILE1

To run a file simply type its name at the command line (you needn't include the .EXE extension to run an EXE program).

Being a disc operating system, DOS is stored entirely on disc, and is loaded into

RAM when the PC is switched on. So that it doesn't occupy too much of the computer's memory, many of its commands, such as FORMAT and PRINT, are in fact stored on disc and loaded when necessary.

If you have a hard disc, then it should be set up (as shown above) with the DOS kernel and extra commands on it. If you are using floppy discs, then you should have one DOS boot disc (a back-up of the disc supplied with the PC Emulator). You can also make any, or all, of your other discs *bootable* when you format it, using the command:

```
FORMAT <drive> /S
```

If a disc is bootable, then the PC can load up DOS from it when it is reset, so you do not need to put the DOS disc back in unless you want to use one of the extra commands. A bootable disc stores around 64K less than a non-bootable disc.

THE MOUSE

To use your mouse under the PC emulator you will need the Acorn mouse driver, which is supplied with the PC Emulator with the filename AMOUSE.COM. If this isn't already on your hard disc or DOS boot disc then copy it, and you will need to alter your AUTOEXEC.BAT file to load it automatically when the computer is reset. This can be done with EDLIN. Type:

```
EDLIN AUTOEXEC.BAT
100
I
AMOUSE.COM
[Press Ctrl-C]
E
```

The '100' gets you to the end of the file.

CONCLUSION

I hope you have found these articles useful. If you have any queries, or hints of your own, then please write to RISC User so

that we can get a regular column on the PC Emulator going.