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Econet level III file server installation guide

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The file server clock is a sealed unit, which contains a nickel-cadmium battery. Do not dispose of in fire.

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Introduction



The level 3 file server is a BBC microcomputer running the level 3 file server program. The computer must be fitted with a network interface, 6502 Second Processor and a hard disc unit. It must have DNFS and ADFS ROMs fitted.

This guide tells you how to set up the file server (using a single hard disc) for the first time. This process should be quite straightforward and consists of three main stages:

- assembling and checking the file server computer and other components
- preparing the hard disc and loading the file server program and other files onto it
- starting up and testing the system

You should only need to do this once. After this, starting up and running the file server is easy. Instructions for this are contained in the accompanying *Level 3 File Server manager's guide*.

This guide also tells you how to update an existing file server with the versions of Econet software supplied on the discs and how to install the optional VIEWDATA system.

This guide does not tell you how to set up the Econet network or user stations – refer to the *Econet Installation Guide* for those details.

What you'll need

To set up the file server, you will need the level 3 file server pack and a number of other components, as listed below. You should not need any specialist tools.

Firstly, check that your level 3 file server pack is complete, as follows. If you cannot find any of these items, refer to your dealer.

- 2 floppy discs: the LEVEL 3 UTILITIES DISC and VIEWDATA SYSTEM INSTALLATION DISC
- 2 books: the *Econet Level 3 File Server manager's guide* (the Manager's Guide) and this, the *Level 3 File Server installation guide*
- a small black box with ribbon cable attached: the file server clock

(The *Econet Level 3 File Server manager's guide* will be referred to more simply as the *Manager's Guide* for the rest of this guide.)

In addition to this, you will need the following to set up and test your level 3 file server:

- a BBC microcomputer fitted with floppy disc and Econet interfaces and ADFS ROM
- an Acorn hard disc unit
- a double-sided (single or dual) 80 track 5.25" disc drive
- a computer display
- a 6502 Second Processor
- an Econet network with one or more user stations connected

NOTE: The disc interface and 5.25" disc drive are only needed to load the file server software. After installation is complete you can remove the floppy disc drive or even swap the file server computer for another without these components (but with the DNFS).

Setting up the file server hardware



Preparing the computer

To prepare the file server, connect the following to a BBC microcomputer with Econet interface, according to the instructions supplied with the individual components (or ask your dealer to do it for you):

- a monochrome or colour display
- an 80 track dual sided floppy disc drive
- a 6502 Second Processor
- a hard disc unit

The ADFS ROM should be fitted in a higher priority socket than the DNFS, and any other languages should be fitted into lower priority sockets than BBC BASIC (see Appendix A).

Turn on the Second Processor, computer, display and hard disc unit to check that they are all working correctly. After a short delay (for the hard disc unit to reach operating speed), the display should read something like:

Acorn TUBE 6502 64K

Acorn ADFS

BASIC

The message "Acorn TUBE 6502 64K" means that the Second Processor is functioning properly. If this message is missing, check that the ribbon cable between the two units is plugged in correctly, the DNFS ROM is in the computer and the Second Processor is turned on.

The message "Acorn ADFS" means that the computer is operating under the advanced disc filing system, needed to use the hard disc unit. If this message is missing, check that the hard disc is plugged in and turned on and that the ADFS ROM is in a higher priority socket than the DNFS ROM (see Appendix A).

The message "BASIC" indicates that the BASIC programming language is the current language. If this message is missing, check that the BASIC ROM is fitted and is the highest priority language.

If there are any problems, refer to the user guides supplied with the appropriate item.

Fitting the clock

In the file server pack is a small black box, which contains a clock/calendar device (the 'clock') that the file server uses to tell the time and date. This information is available to all network users (see *TIME and *DATE in the *Manager's Guide*). The date is also recorded on each file saved by network users, which is particularly useful when backing up discs, to tell when each file was last changed.

Plug the clock into the socket marked 'user port' underneath the computer at the front, next to the printer port. The plug should be inserted with the small triangle symbol on its upper edge, adjacent to the similar symbol on the label next to the socket.

This clock is set with the correct date and time when it leaves the factory, but can easily be reset if necessary, as described in the *Manager's Guide*.

The clock is powered from a battery which is charged by the file server whenever it is switched on. As long as the file server is left on for at least 12 hours each fortnight, it should not run down (when fully charged, it will run without power for up to six months).

Setting the file server station number

Before you can use any station in an Econet network, you must set its station number so that the network can identify it. We recommend that the file server is set to the default number 254. If you have more than one file server, set one to 254 and select different numbers for the others.

To set the file server station number, follow the instructions in the *Econet Installation Guide*.

Connecting the file server to the network

If you already have an Econet network set up, you may connect the file server to it now, as described in the *Econet Installation Guide*.



Installing the file server software

With the file server hardware plugged together and checked, you are ready to install the programs and other files that will turn the computer into a file server. This is done by using programs on the floppy disc labelled LEVEL 3 UTILITIES DISC.

If your hard disc unit has not already had the file server installed on it, proceed as follows. If your hard disc has already had the file server installed on it, refer to "Updating an existing file server".

This process will not normally destroy any information on the hard disc, so it can safely be performed even on a disc which has already been used to store information using the ADFS. It does however create a file called \$.!BOOT (the file server program), so if you have such a file on your hard disc that you want to keep, you may rename it first.

In general, this process should be trouble-free. Any problems encountered will be reported by error messages, which should be self-explanatory. Refer to the *Manager's Guide* for further help, or – failing that – to the user guides supplied with your hard disc and computer.

Installing a new file server

This process consists of three main stages:

- reserving space on the hard disc for Econet
- copying the file server program from the floppy disc to the hard disc
- copying the standard file server utilities and other programs from the floppy disc to the hard disc

Initialising divides the space on the hard disc into four areas:

- A: space used for ADFS files
- B: free space reserved for ADFS files
- C: space used for file server files
- D: free space reserved for file server files

The ADFS and file server areas are kept entirely separate. When used as a file server, A and B are hidden and *FREE will display C as the used space, and D as free space. When used as a hard disc under ADFS, C and D are hidden and *FREE will display A as used space, and B as free space.

The total space (A+B+C+D) will be approximately equal to the capacity of the hard disc.

This process of reserving space is largely automatic, but before you start it, there are two steps you may wish to take.

The space claimed for Econet (C+D) is usually most of the entire free (ie unused) space on the disc. To make this as large as possible, delete any unwanted files on the disc before running the initialisation process. Alternatively, if you will want to use the hard disc to store files with the ADFS as well, you should reserve sufficient space for that before initialising, as follows

Select BASIC, then

type: **A%=OPENOUT "SPACE"[RETURN]**

screen: >

type: **PTR#A%=<space required in bytes>[RETURN]**

(This creates a dummy file and may take several minutes)

screen: >

type: **CLOSE#0[RETURN]**

screen: >



Insert the disc labelled LEVEL 3 UTILITIES DISC in the (top) floppy disc drive, hold down [SHIFT] and D, press [BREAK] then release the other keys and close the disc drive door. This 'boots' the floppy disc, causing a program on it to run and install all the file server software for you, with the minimum of supervision. All you need to do is specify today's date in response to the prompt

screen: **Date (dd/mm/yy):**

type: **<today's date>[RETURN]**

This will be followed by a number of messages, including

screen: **Copying file server code ...
Copying Welcome directory ...
Copying Library directory ...
Copying Utils directory ...**

The copying takes several minutes. Finally, when the installation process has finished

screen: **** Disc initialised ****

*If you reduced the space available to Econet as described above, you may now delete the 'dummy' file eg *DEL. SPACE[RETURN].*

You may now proceed with "Checking file server and network operation". If you wish, you may disconnect the floppy disc drive at this stage, for use on another computer.

Updating an existing file server

If you have already installed the level 3 file server on your hard disc unit but need to replace or add any of the supplied files, don't initialise the disc as described above, but proceed as follows.

This will be mainly used if you have been working with a pre-release version of the software, or if any of the standard Econet files have been corrupted or deleted through accident or abuse.

To update the file server program only, first make sure it has a floppy disc drive attached. Insert the disc labelled LEVEL 3 UTILITIES DISC in the (top) floppy disc drive, hold down D then press [BREAK] and release D. This selects the DFS (floppy disc) filing system, to allow you to use programs on the floppy disc. DO NOT PRESS [SHIFT] WHILE DOING THIS

type: **CHAIN"UPDATEW"[RETURN]**

screen: **Copying File Server Code ...**

The copying takes about two minutes. When it is finished

screen: **Code copied**

You may now proceed with "Checking file server and network operation". If you wish, you may disconnect the floppy disc drive at this stage, for use on another computer.

To update the Econet directories, make sure the file server is running, then log on as a privileged user on a user station with a floppy disc drive and interface. Next, insert the disc labelled LEVEL 3 UTILITIES DISC into the (top) floppy disc drive, hold down D then press [BREAK] and release D. This selects the DFS (floppy disc) filing system, so you can use programs off the floppy disc. DO NOT PRESS [SHIFT] WHILE DOING THIS

type: **CHAIN"UPDATEN"[RETURN]**

screen: **FS Library + Utils Retrieval Utility

**Q) Quit
L) Library
U) Utility
A) All (Library, Utilities and Welcome)**

Select area to retrieve



Select the desired function by pressing the appropriate key. As each file is copied, its name is displayed on the screen. When all the files specified have been copied, the prompt is redisplayed.

There is no need to unlock any Econet files already on the file server – the update programs will do this automatically.

Note that if you have created files on the file server with names that are identical to standard Econet files, these will be overwritten. This is rather unlikely, but refer to Appendix B to check the names used to make sure.

Connecting up the network



Instructions for installing the network and checking it are contained in the *Econet Installation Guide* supplied with the Econet starter pack.

Check that all the microcomputers in the Econet are correctly plugged into the network sockets and have different station numbers.

Don't forget to connect the file server to the network!

Checking file server and network operation

Start up the file server by following the instructions in the *Manager's Guide*. This will serve to test the file server itself and allow you to check operation of the user stations.

Testing the user stations

Next, you need to test the user stations to make sure they are working properly. Go to one of the stations on the network. Its screen should look something like this:

```
BBC Computer 32K  
Econet station 100  
BASIC  
>
```

If "Econet station <number>" is missing, its Econet software has not been activated. Hold down [BREAK] and N, then release [BREAK], followed by N. The correct message should now be displayed. If not, check that the NFS or DNFS ROM has been inserted and read the information on filing system ROMs in Appendix A.

If the message "No clock" appears after the station number, refer to the list of error messages at the back of the *Manager's Guide*.

If "BASIC" is missing, make sure that the BASIC ROM is present and fitted in a higher priority socket than any other language ROMs. (While it is not essential to have BASIC fitted, this will usually be present and will make testing and operation easier.)



To test the station

```
type: *I AM WELCOME[RETURN]
```

to log on, then

```
type: *CAT[RETURN]
```

to display a catalogue of the files in the Welcome directory that's stored on the file server. If a catalogue is displayed, all is well: log off by typing *BYE[RETURN] on the user station keyboard. If not, refer to the other manuals supplied with your Econet system to track down and cure the fault.

If an error message appears, see the section on error messages at the end of the *Manager's Guide*.

Repeat this entire procedure on every station on the network.

The files listed are the demonstration programs which are described in the Welcome pack that comes with each station. You can run them by typing CHAIN "WELCOME"[RETURN].

Checking the clock

While logged on at a working user station, check the setting of the file server clock as follows

```
type: *TIME[RETURN]
```

The screen should display the time, for example

```
screen: Good afternoon! It's 13:20:04
```

```
type: *DATE[RETURN]
```

The screen should display the date, for example

```
screen: Today is Wednesday the 25th of December  
1985
```

If either is incorrect, you can correct the clock by logging on as a privileged user and using the SETTIME utility (see the *Manager's Guide*).

Preparing the system for users

Now that the file server is working correctly with the network, you could let other users use it, but there are a number of simple tasks that you ought to consider doing first.

Adding users

Although users can log on as any of the standard ids (such as Welcome), this will become unmanageable as soon as you have more than a few users creating files. The solution is to create a separate new user id for each user or group of users – by logging on using that id, they will then be able to create, amend and delete files quite independantly of other users. This is most easily done using the NETMGR program described in the *Manager's Guide*.

Security

Users are known to Econet by the user id they log on with. Each user id can be made more difficult to use without permission by giving it a password, known only to users authorised to use that id. A password is allotted to an id by logging as the id and using *PASS (see the *Level 2/3 File Server user guide*).

Certain network facilities might be dangerous or embarrassing in the hands of ill-informed, careless or mischievous users. The solution is to limit access to these facilities to a small group of users, known as privileged users. To achieve this, use *ACCESS and *PRIV, as described in the *Manager's Guide*.

Copying files onto the file server

If your users already have files stored on other discs, they will probably want them copied onto the file server so they can continue to use them. While this could be left to individual users, it is rather more efficient (and safer!) to do this for them, as follows.

To copy files from a DFS disc, level 1 file server disc or hard disc attached to a user station, use the program COPYF, described in the *Manager's Guide*.

To copy all the users' files from a level 2 file server, it will be much quicker to use the program L2to3, as described in the *Manager's Guide*.

Tidying up

Once you have finished installing the file server, remember to put this guide and the installation discs away together in a safe place. You may need them again if anything happens to your system.

You are now ready to let users onto the file server. Tell them their ids and give them their *Level 2/3 File Server user guides* if you have not already done so.



The VIEWDATA system

The VIEWDATA system is supplied on the floppy disc labelled VIEWDATA SYSTEM INSTALLATION DISC. Once installed on the file server, it provides a convenient and lively way of providing Econet users with information, rather like the text pages on the information services broadcast by the BBC and ITA. This information will eventually be provided and maintained by the system manager or other privileged user, but when you first install it, the system contains information telling you how to use it!

VIEWDATA is not an integral part of the file server, but an optional extra. You may well decide to leave installing it until you and the other users have got used to the network. It will use up about 500Kbytes on the hard disc and take about 30 minutes to install.

Installing VIEWDATA

To install VIEWDATA, proceed as follows.

Start up the file server and log on as a privileged user at a user station that is equipped with a disc interface and double-sided 80 track disc drive. For example

type: **I AM SYST[RETURN]**

Next, insert the disc labelled VIEWDATA SYSTEM INITIALISATION DISC in the disc drive, then

type: ***D.[RETURN]**

screen: **>**

type: **CHAIN"INSTALL"[RETURN]**

This will copy all the files required onto the file server, creating the necessary directories as it goes. This takes 20-30 minutes. When the program has finished, it displays

screen: **VIEWDATA SYSTEM INSTALLATION
COMPLETE**

You may now remove the disc but must log onto the network again if you want to carry on with other system tasks.

Using VIEWDATA

To learn about the system as manager, log on as VIEWDATA.MANAGER.

Once you are familiar with the system, you may want to practise changing the information offered by the system. To do this, log on as VIEWDATA.PRACTICE. This allows you to 'edit' frames but is perfectly safe because it does not change the frames that users see.

Once you have practised making changes, you may wish to change the information held by VIEWDATA. To do this, log on as VIEWDATA.EDITOR.

It is advisable to protect the MANAGER and EDITOR ids with passwords before allowing public access to the system, as these ids enable the user to alter the VIEWDATA system. To protect these ids, log on to each in turn and press [BREAK] as soon as the message

screen: **CH."VSMENU"**

appears. Next, type *NET[RETURN] and specify the password for this id using *PASS in the usual way (see the *Econet Level 2/3 File Server user guide*), then log off. For example

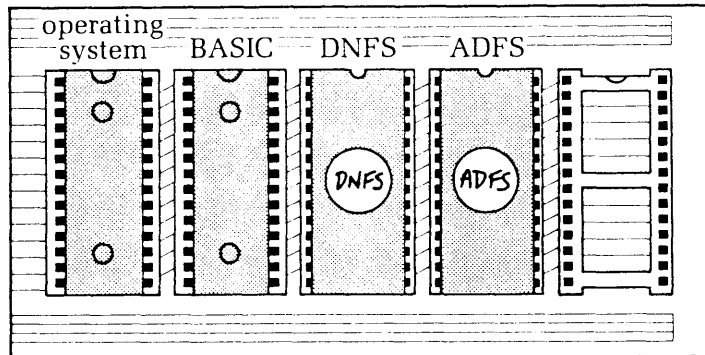
type: ***PASS "" FZQ1*6[RETURN]**

When the VIEWDATA system is ready for use, tell users to log on as VIEWDATA.USER to learn how to use it.



Appendix A: ROM sockets

For the file server program to run, you must plug in the ADFS ROM to the right of all the others, as shown below. You can then plug in the DNFS ROM anywhere to the left of the ADFS.



Doing this makes sure that the ADFS is selected as the filing system whenever you press keys such as [CTRL], [BREAK] or [RESET]. It is important that the DNFS is connected so that you can communicate with the network and use a Second Processor.

If a user station is fitted with a DNFS ROM and no other filing systems, it will always select the DFS when switched on. To make it select the Econet filing system instead, remove the top of the keyboard and make the left-hand link (number 1) on the keyboard (see 'Autostart Facilities' in the *Manager's Guide*).

If the stations are not BBC microcomputers, the method is different. Refer to the manual that came with each station, or contact Acorn's Technical Enquiries department at

Technical Enquiries
Acorn Computers Limited
Cambridge Technopark
645 Newmarket Road
Cambridge
CB5 8PD

Appendix B: file names

The only file created by the install process (and UPDATEW) is a file named \$!.BOOT, which is the file server program. This is run automatically when the hard disc is booted.

The Econet directory structure created by the installation process is as follows. You may need this information to avoid overwriting existing files when running the program UPDATEN.

\$.passwords

\$.LIBRARY directory:

Close	Date	Discs	Flip
Free	Fs	Lcat	Lex
Netmon	Notify	Prot	Ps
RdFree	Remote	SetFree	Time
Unprot	Users	View	

\$.UTILS directory:

Archive	Copyf	GetBack	L2to3
LogCopy	Netmgr	SetTime	

\$.WELCOME directory:

Alpha	Batball	Biorthm	Bpart2
Calc	Clock	Help	Index
Keybd	Kingdom	Message	Music
Pattern	Phone	Photo	Poem
Sketch	Welcome		

(If VIEWDATA is installed)

\$.VIEWDATA directory and contents (this includes the VIEWDATA programs, user directories for EDITOR, MANAGER, PRACTICE and USER and the MANUAL directory which holds the instructions for users)

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