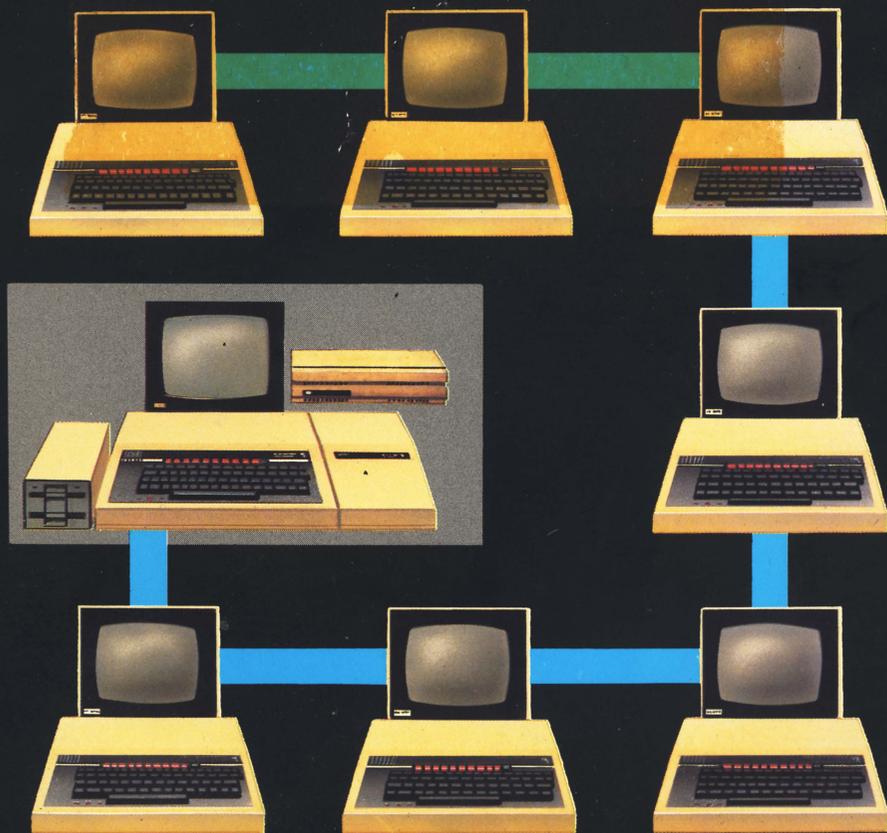


 **ACORN COMPUTER**

Econet level 3 file server MANAGER'S GUIDE



Acorn Econet



Level 3 File Server manager's guide

Within this publication the term "BBC" is used as an abbreviation for "British Broadcasting Corporation"

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Introduction



This guide describes how to run the Econet Level 3 file server. It has been written for the network manager – the person responsible for the administration and maintenance of the artwork, who will answer users' queries and help sort out problems.

Consult the *Level 3 File Server Installation Guide* if you need to install your file server.

The guide will give you the information you need in your role as network manager, and includes:

- an overview of what a file server does and how the files it stores are organised
- all the necessary instructions for operating the file server
- advice on the day-to-day running and administration of a network
- advice on what to do if the file server or the network fails to operate properly.

It is essential that you understand how the file server is used in order to manage it effectively. Station users have their own *User Guides* which you should read carefully. There is also an *Advanced User Guide* containing more technical information on the Econet.

You may also refer to the other manuals which came with your Econet system:

- the *Level 3 File Server Installation Guide*
- the *Econet Installation Guide*
- the *BBC Microcomputer System User Guide*
- the *BBC Microcomputer Advanced Disc Filing System User Guide* (which we refer to as the *ADFS Guide*).

Conventions used in the guide

Throughout this guide there are instructions for typing in commands and data, to which the following rules apply:

- if a word is shown in square brackets it is the name of a single key
EXAMPLE: [RETURN] means the RETURN key
- descriptions in angle brackets should be replaced by the information required
EXAMPLE: <filename> means type the name of a file
- characters not in brackets should be typed in exactly as they are shown.

Econet and file servers: a manager's overview



Econet is a local area network which connects microcomputers so that they can share resources such as printers and file storage.

Each printer and disc device on the network is supervised by a computer. Those computers which supervise disc drives are designated as file servers, and run a program that carries out all the supervisory tasks.

The three levels

There are three file server programs available, which offer services of different levels of complexity. This is a manager's guide to the level 3 program. There are separate guides for level 1 and level 2.

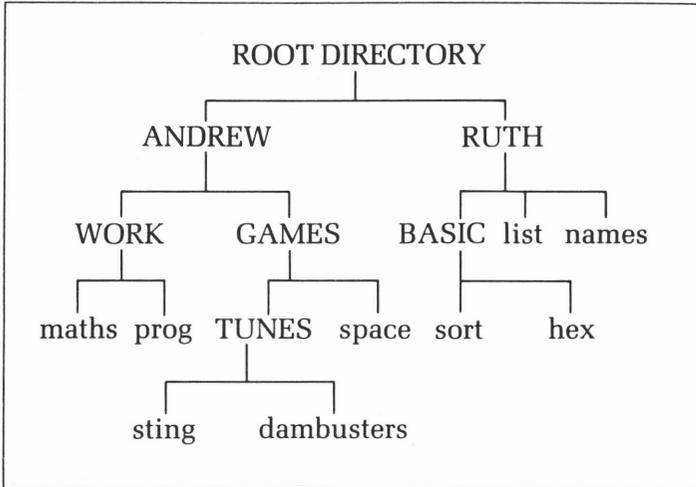
When you buy computers that are to be used as ordinary stations on the network, they are supplied with three user guides: one for level 1, one that covers both level 2 and level 3, and an Econet *Advanced user guide*. Since your network will be using a level 3 file server, you should put to one side all the level 1 user guides you've received.

How files are organised

The level 3 file server enables stations on the network to store and retrieve files on a shared hard disc drive.

The files stored on the disc are arranged in groups called directories which are organised in a tree structure. At the root of the tree is a directory that contains all the other directories (and so all the files) on the disc. This is the root directory.

A simple tree might look like this (here, directories are shown as capital letters, files as lower case letters):



At any one time, each user has a currently selected directory. To specify a file, the user gives a pathname which sets out the path from the currently selected directory to that file.

For example, if your currently selected directory is RUTH and you want to specify the file SORT, you would type the pathname

BASIC.SORT

If you wanted a file that's not in a branch of the tree below your currently selected directory – for example, the file STING – you have to start at the root directory, and you would give the pathname

\$.ANDREW.GAMES.TUNES.STING

The symbol \$ stands for the root directory.

Each file has an access status, which determines whether it can be read, altered or deleted.

Users



Users with files on the disc normally have one main directory each. Within that directory, they can arrange their files in sub-directories.

Each user has a user-identifier and may also have a password. On the disc there's a file called the password file which holds the identifiers and passwords of all the users who have access to the disc.

It's also possible to have group identifiers. People in a particular department or class can share a group identifier such as DESIGN or TYPING or GROUP3. Individuals in the group would have their own identifiers: GROUP3.ANDREW, GROUP3.RUTH and so on.

Ownership

Users don't have equal access to all the files on the disc. For each directory, you have either owner access or public access.

The *owner* of a directory has complete control over it and can do the following:

- save, delete and rename files in that directory
- create sub-directories in that directory
- change the access status of files in that directory.

Users who only have *public* access to directories have their file access controlled by the owner, and they cannot delete files or create new ones.

The password file

Your main hard disc holds a password file, which stores identifiers and passwords for those using the file server. The password file is stored in the root directory.

The system user

The password file on your main hard disc contains a user identifier SYST. SYST is a system user – that is, a user who has owner access to the root directory, and so to all the files on the disc.

You need to log on as a system user in order to create new user root directories and set up libraries of useful files in the root directory.

To protect users' files it is better to have only a few system users on a network. We recommend that you use user SYST to create a new system user with a complicated name as soon as you have installed the file server. Give this new system user a complicated password as well so that it is very difficult for anyone to guess the system user's name and password and gain illicit access to other users' files.

You should then delete the user SYST or remove its status as a system user.

Logging on to the file server

When a user logs on, the file server searches for their identifier in the password file and checks the password if one has been set up. It then looks for a directory of the same name in the root directory. If it finds one, that directory becomes the user's main directory. If users don't have directories of their own they are given the root directory as their main directory with public access only.

When a user logs on using a group identifier, they are given ownership of their own directory. If they haven't a directory of their own in the group directory, they will be given ownership of the group directory. This gives them owner access to all the files and directories within the group.

For example, if a user called SARAH logs on as GROUP3.SARAH she will be given ownership of the sub-directory SARAH. If there isn't a sub-directory called SARAH, she will be given ownership of the directory GROUP3.



You may find it useful to give all users in your group their own sub-directories so that you can log on as a user without a directory and have access to all the group's files.

The role of the network manager

Once the file server is installed, the network manager's tasks include:

- supervising the network while it is running
- saving useful files in the root directory or library for users to load and run at their stations
- adding new users and removing those who are no longer using the network
- creating directories in which users can store their own files
- making back-up copies of the work stored on the hard disc.

Starting and stopping the file server

This section describes how to start up the file server each time you switch it on.

At the file server computer

press: **[SHIFT]A[BREAK]**

to start the file server program running. That is, hold down [SHIFT] and A, press and release [BREAK], then release [SHIFT] and A.

Screen: **Acorn File Server Level 3 Version 1.00**
File Server Station nnn
Testing Memory
Last free location = F7FF

If, instead of this message, your screen displays one or more lines like

FAILS AT: 8FED

the memory test has failed.

The display lists all the memory locations followed by

Memory fault found
File server unable to start
Ended

If there is a long list of failed memory locations, check that your second processor is plugged in correctly and try again. If the file server will not start, you have a hardware fault and should contact Acorn's Technical Enquiries department. Their address is on page 60.

If you see the message

screen: **Clock Failure**

the file server clock is either not plugged in correctly or has a fault. Refer to the *Level 3 File Server Installation Guide* for instructions on plugging it in.



Normally you will now see:

screen: **Number of drives:**

type: **1[RETURN]**

screen: **Command:**

type: **S**

to start the file server program running.

Screen: **Stations:**

Decide how many stations are going to be using the file server during this session.

Type: **<number>[RETURN]**

where **<number>** is the maximum number you expect to use the file server, and can be up to 80.

NOTE: although several hundred people can use the file server you cannot have more than 80 logged on at a time.

Screen: **Cache size - 42AF objects - 42**

The numbers in this message are hexadecimal and will vary with the number of stations you have keyed in. The cache is an area of memory which is used to hold objects (that is, directories and files) which users need frequent access to, to save having to take them from disc each time.

Screen: **Starting - Ready**

The file server is now ready for use.

While the file server is running, most of the commands it receives from user stations are displayed on its screen with the numbers of the stations from which they were sent.

EXAMPLE

Screen: 123: I AM ROBERT
123: LOAD MYPROG
123: ACCESS MYPROG L
150: I am James

You can turn off this display by pressing M on the file server keyboard, and turn it on by pressing M again.

If at any stage you want to return to the "Command:" prompt

press: **Q**

This stops the file server session and allows you to press [CTRL][BREAK] to reset the file server machine.

Running the file server



This section explains the tasks you need to carry out while the file server is running. To do them, you work at a station and log on as a system user: either as SYST, or as another system user you've created. Select Mode 7 to make sure that all utility programs will run.

Creating system users

To make a user into a system user, log on as a system user (initially as SYST) and

type: ***PRIV <user id> S[RETURN]**

<user id> is the name of the user you wish to become a system user. This name must already exist. The system user status takes effect the next time the user logs on.

EXAMPLE

To make TRICIA a system user

type: ***PRIV TRICIA S[RETURN]**

To stop someone being a system user

type: ***PRIV <user id> [RETURN]**

EXAMPLE

To make TRICIA an ordinary user again

type: ***PRIV TRICIA [RETURN]**

WARNING: You must maintain at least one system user on the file server at all times.

Checking who is using the file server

To find out who is logged on to the file server, use the command `*USERS` at a station.

Type: `*USERS[RETURN]`

Example screen:

Stn User Id.	Stn User Id.
4 Game.Demo	10 Wendy

`*USERS` does not display the names of logged-on system users.

Finding out and changing users' space limits

When you initialise the hard disc or create users, the file server automatically sets a limit to the amount of disc space any individual user can take up. To start with, this limit is 4 Mbytes. System users can change this limit for any user and find out at any time how much of a particular user's space is now free.

To display the amount of space available to a user

type: `*RDFREE <user id>[RETURN]`

EXAMPLE

Screen: 0F8BE3 Bytes remaining

To increase or decrease the space available to a user

type: `*SETFREE <user id> <space>[RETURN]`

where `<space>` is the amount of space, in bytes, you want that user to have. Type this as a hex number.

EXAMPLE

Typing: `*SETFREE RUTH 0[RETURN]`

reduces the space available to RUTH to nothing, so that she cannot save any more files without first deleting some. If she tries to, she will see a message "Insufficient space".

Finding out information about discs



If you have more than one hard disc, you may need to find out – while the file server is running – the title of a disc and the amount of space free on it. At one of the stations

type: ***FREE[RETURN]**

EXAMPLE

<i>Screen:</i>	Disc name	Drive	Bytes free Bytes used
	Master-disc	0	4,985,600 5,354,752
	Hard-disc2	1	2,126,336 39,944,704

To find out about space used in specific directories on a disc, use ***INFO**, as explained in the *User guide*.

Managing the root directory and libraries

As manager, you can log on as a system user and create files and directories in the root directory. You therefore need to be responsible for managing the root directory and for making files in it available to users.

In the root directory you may have:

- a password file
- groups' and users' main directories
- directories of utilities called LIBRARY and UTILS
- directories containing groups of related files, such as games.

EXAMPLE

The catalogue of a root directory might look like this:

\$	(117)	Owner	
MASTER-DISC		Option 00 (Off)	
Dir. \$		Lib. LIBRARY	
ANDREW	DL/	EDITOR	LR/
GROUP3	DL/	GAMES	DL/
JULIE	DL/	LIBRARY	DL/
PASSWORDS	/	RUTH	DL/
TEXT	WR/	UTILS	DL/

In this catalogue the disc title is "MASTER-DISC", you have owner access to the directory, your currently selected directory is \$, and the option number indicates whether an automatic start will take place, as explained on page 41.

Another important part of the service you provide as network manager is making sure that utilities which users need are put into the libraries in the root directory and that these libraries are kept up-to-date. For example, if a user writes a program which would be useful for others to load and run, you would save this in the library.

EXAMPLE

An example of a catalogue of LIBRARY is:

LIBRARY	(094)	Owner	
MASTER-DISC		Option 00 (Off)	
Dir. LIBRARY		Lib. LIBRARY	
CLOSE	LR/R	DISCS	LR/R
FLIP	LR/R	FREE	LR/R
FS	LR/R	LCAT	LR/R
LEX	LR/R	NOTIFY	LR/R
NETMON	LR/R	PROT	LR/R
PS	LR/R	RDFREE	LR/R
REMOTE	LR/R	SETFREE	LR/R
UNPROT	LR/R	USERS	LR/R
VIEW	LR/R		

Managing the password file



Each time a user logs on to the file server, a check is made to see that their user identifier is present on the password file in use and that the password keyed in is correct. So you must have a password file in one of the file server disc drives to enable people to log on.

If you have more than about 300 users in the password file your root directory becomes very large: it takes up a lot of disc space and slows down logging on. In this case it is better to use group directories and identifiers (see page 9).

If you try to start the file server with more than about 500 user directories in the root directory you will get an error message. (See the section on *Error messages* at the end of the guide.)

If you try to start the file server with no password file you will get the message "PW file not found" at the file server.

The NETMGR utility

This utility has been written to help you perform many of the tasks that keep the file service running smoothly. Some of these functions can be done using other file server commands included elsewhere in the guide, but NETMGR groups them together into one program to make them easier to use.

As manager you will be responsible for creating users and their directories. You can do both together, using NETMGR, or you can create them separately using *NEWUSER and *CDIR. (The *NEWUSER command is explained later in this chapter; *CDIR is explained in the *User guide*.)

Log on, select the root directory, and

type: **CHAIN "\$.UTILS.NETMGR"[RETURN]**

Screen: **Econet Network Management**

C to copy a directory
W to wipe a directory
T to print a directory tree
N to create a new user
R to remove a user
Q to quit

Your choice:

To select an option, type the appropriate letter.

You can also enter the usual file server commands after the prompt, for example *CAT, and return to the menu after they have been executed.

At any point in the program, you can press [ESCAPE] to get back to the NETMGR opening screen.

When the program is copying or deleting directories and files, the screen displays them, with the directories marked 'Dir.' and their contents indented beneath them. The length of each file is given in bytes (shown as hexadecimal numbers) to the right of the filename.

Copying a directory

You can copy the entire contents of a directory to another directory, which may be on another disc. If you are copying on to a new disc the program also reorganises the files in the directory so that they are stored in sequence and can be loaded more quickly.

It will copy the directory even if one of the files contains a disc error, so that it is useful for salvaging everything which is not corrupted on a damaged disc.

Screen: **File server logical copy**

Copies all files and sub-directories
to a new directory.

Full pathname, source directory
:



Type: <pathname>[RETURN]

<pathname> is the full pathname of the directory you want to copy, for example, \$.LIBRARY or \$.ANDREW.GAMES.

Screen: **Full pathname, destination directory**
:

Type: <pathname>[RETURN]

<pathname> is the full pathname of the directory you want the copy to be put into. If the directory already exists the new entries will be added to it. Any files of the same name will be overwritten.

If you have two disc units connected to the file server, you may copy between them. To do this, type a colon followed by the destination disc name in front of the pathname of the destination directory.

EXAMPLE

To copy a directory on to a disc called MATHS, giving it the pathname \$.ALGEBRA, type as the destination pathname:

:MATHS\$.ALGEBRA

Copying will now start. The screen displays the file and directory names as they are copied. If the directory is very large it may take some time to be copied. When copying is complete you see the message

Copied directory <name> to <name>.

Press SPACE to return to menu

To copy between two file servers, you will need to be logged on to both file servers. You can do this before or after you have typed **C** for copy. When you give the pathnames you need to use the file server number and the disk name each time.

Type: **#254:<disc name>.\$.<pathname>**
 [RETURN]

You can then type the name of the new disc.

Type: **#253:<new disc name>.\$.<pathname>**
 [RETURN]

Wiping a directory

Use this option to delete a directory and its contents.

Screen: **Directory Wiper**

 Wipes entire directory
 and sub-directories

 Pathname of directory for deletion
 :

Type: **<pathname>[RETURN]**

Deletion starts immediately, and finishes with the directory you've named. You will see the names of all the files and directories displayed as they are deleted.

Message: **Directory <pathname> deleted.**
 Press SPACE to return to menu

EXAMPLE

You have a user called ROBERT with directories TUNES and GAMES, each containing several files. If you enter the pathname as \$.ROBERT you will delete both TUNES and GAMES and all their files, and the main user directory ROBERT in the root.

If you enter the pathname \$.ROBERT.TUNES you will only delete the directory TUNES and all its files.



Take care when you use this program that there is nothing in the directory you still need. This program unlocks the directory so it is not possible to protect it from deletion. If you delete your currently selected directory, channel errors will occur.

Printing a directory tree

To check what is in a directory, you can print out the filenames and directory names of the whole directory tree.

Screen: **Tree Printer**

**This program prints out
the tree structure of a directory
Full pathname of start directory
:**

Type: **<pathname>[RETURN]**

<pathname> is the name of the directory you are interested in.

Screen: **Printer (Y/N):**

If you type Y[RETURN], the program will start the printer (via VDU 2) before displaying the tree print. When printing is finished, the printer carries out a form feed and stops automatically. Typing N[RETURN] displays the tree print on the screen only.

The display is set out in the same way as before, with the files arranged under their directories, and the file length given in hexadecimal bytes.

When this is finished you will see the message

Press SPACE to return to menu

Creating a new user or user group

You can add a new user into the password file and create a user directory in their group directory. To do this you must first create the group directory, and then the user directory.

Screen: **Create New User**

Name of new user
:

Type: **<user id>[RETURN]**

<user id> is:

- a ten-character user identifier, or
- a ten-character group identifier followed by a full stop and a ten-character user identifier.

This is then recorded in the password file.

Screen: **<user id> is now a user**
Press SPACE to return to menu

*CAT will now show an entry in the root directory for the new user.

Removing a user

You can remove a user from the password file and wipe out that user's directories and files.

Screen: **Remove user**

Name of user to be removed
:

Type: **<user id>[RETURN]**

Screen: **Removing files ...**

The directory tree of the user is displayed as it is deleted.



Screen: **Directory \$.<user id> deleted.**
Press SPACE to return to menu

Take care that you do not remove a user who has directories and files which are still needed, as they will be wiped out.

Quit

This option leaves the program.

Screen: **** Finished ****

Other ways of creating and deleting users and directories

As well as NETMGR there are separate commands for creating users and their directories.

When you are logged on as a system user you can add a new user to the password file using the command *NEWUSER.

Type: ***NEWUSER <user id>[RETURN]**

and the identifier is recorded in the password file.

This command doesn't create a directory for the user, who will have only public access to \$.

To remove a user from the password file

type: ***REMUSER <user id>[RETURN]**

If a user forgets their password you need to enter a new one. You can do this as a system user by deleting and creating the user again, using *REMUSER and *NEWUSER. The user then enters a password in the usual way. This doesn't affect the user's main directory.

If new users need their own main directories, they can be created in the root directory by logging on as a system user and using the command *CDIR. How to do this is explained in the *User guide*. You can also use *CDIR to create a new group directory.

Archiving the contents of your discs

A hard disc is a very reliable way of storing large amounts of information. However, it is essential to make archive copies of important files on floppy discs (or on another hard disc) and to keep them somewhere safe. The ARCHIVE utility enables you to do this.

To archive files, you attach a floppy disc drive or a hard disc drive to one of the stations on the network and run the utility from that station.

Any user can run ARCHIVE, but the program will not archive directories to which the user does not have owner access. If you are logged on as a system user, you can archive all the directories and files on the disc.

Log on and select (using *DIR) the directory you want to archive.

Make sure you have the archive disc drive connected to your station. If the archive is going to be on a floppy disc, put the disc in the drive.

Type: **CHAIN "\$.UTILS.ARCHIVE"[RETURN]**

Screen: **File server directory archiver

**Archives currently selected directory
and sub-directories**

Screen: **Select filing system for archive (A=ads,
D=disc)**

Type: **A** if you are going to keep your archive on a hard disc

or: **D** if you are going to keep it on a floppy disc.

Screen: **Pathname of directory to archive
:**

Type: **<full pathname, starting\$>[RETURN]**



The program lets you specify which files to archive according to the dates they were last saved. This means you can choose not to archive files older than a date you specify, or newer than a second date you specify.

Screen: **Start date (dd/mm/yy)**

:

Type: **<first date>[RETURN]**

Files saved before this date will not be archived. Type just [RETURN] if you want your archiving to go back to the earliest files saved on the file server.

Screen: **End date (dd/mm/yy)**

:

Type: **<second date>[RETURN]**

Files saved after this date will not be archived. Type just [RETURN] if you want your archiving to include the most recently saved files.

Screen: **Name for archive file**

:

All the directories and files you are about to archive will be stored in one large file on the archive disc. You need to type a name for this file. It can be up to seven letters long, using any combination of letters and numbers. It is a good idea to include today's date in the filename, so that you can easily find out later when the archive file was created.

Type: **<filename>[RETURN]**

Archiving then starts.

If you are using a floppy disc and the file server runs out of space on it, the screen prompts you to put in a new disc. When the archiving has finished, label the archive disc carefully. If you have produced more than one archive disc, label them to show the order in which they were produced.

Retrieving archived directories and files

If you need to get information back from an archive disc, use the GETBACK program. Log on and select (using *DIR) the directory where you want to put the files that you are going to retrieve. This must be a directory to which you have owner access: if you are logged on as a system user, it can of course be any directory.

Make sure you have the archive disc drive connected to your station. If the archive is on a floppy disc, put the disc in the drive.

Type: **CHAIN "\$.UTILS.GETBACK"[RETURN]**

Screen: **File server archive retriever

**C Catalogue archive disc
B Retrieve both files and sub-directories
F Retrieve files only
Q Quit**

Your choice:

To select an option, type the appropriate letter.

Cataloguing the archive disc

This option displays a list of the contents of an archive file on the archive disc.

Screen: **Archive filename
:**

Type: **<filename>[RETURN]**

EXAMPLE

File \$.SARAH.HEX	FFFF1200 FFFF8023 000043 LR/wr 22:10:85
Dir. \$.ANDREW.GAMES	00000000 00000000 000200 DL/ 09:11:85
File \$.ANDREW.GAMES.STAR	004A733E EE872444 00009A LR 23:10:85



Retrieving both files and sub-directories

This option retrieves both files and whole sub-directories from the archive disc.

Screen: **Full pathname of directory to retrieve from**
:

Type: **<pathname>[RETURN]**

This is the location in the archive file and may include wild cards. Files will be copied into your currently selected directory.

Screen: **Object specifier**
:

Type the name of the sub-directory or file you want to retrieve. You can use wildcard symbols here, in order to retrieve a group of files or sub-directories.

Screen: **Name of Archive file**
:

Type the filename you specified when you created this archive, then press [RETURN]. If the archive file was spread over several floppy discs, the screen prompts you when necessary to insert the next disc in the sequence. You must insert the discs in the same sequence that you used when creating the archive. If you want to abandon the retrieving at this point, press [ESCAPE].

Retrieving files only

This option retrieves just individual files – not whole sub-directories.

Screen: **Full pathname of directory to retrieve from**
:

Type: **<pathname>[RETURN]**

Screen: **Object specifier**
:

Type the name of the file you want to retrieve. Wild card symbols can be used if you need to retrieve a group of files. Finish with [RETURN].

Screen: **Name of Archive file**
:

Type the filename you specified when you created this archive, then press [RETURN].

If the archive file has been spread over several floppy discs, the screen will prompt you when it is necessary to insert the next disc in the sequence. You must remember to insert the discs in the same sequence that you used when creating the archive. If you want to abandon the retrieving at this point, press [ESCAPE].

Quit

This option leaves the program.

Copying to and from another hard disc

The LOGCOPY program copies directories and files between the file server hard disc and another hard disc unit attached to a station on the network.

Log on at the station the second hard disc unit is connected to.

Type: **CHAIN "\$.UTILS.LOGCOPY"[RETURN]**

Screen: **File server logical copier**

**Copies files between the file server hard disc
and another hard disc**

Screen: **Select filing system for archive**
(A=adfs, N=net)

Type: **A[RETURN]** if you're copying from the second hard disc to the file server hard disc

or: **N[RETURN]** if you're copying from the file server hard disc to the second hard disc.

Screen: **Source drive**
:

Type: **<drive number>[RETURN]**

Screen: **Source directory**
:

Type the name of the directory you want to copy from. If you are copying from the second hard disc, the screen displays a \$: you then type the rest of the directory's pathname. If you are copying from the file server hard disc, type as much of the pathname as you need to – what you type depends on where the directory is in relation to your currently selected directory.

Screen: **Destination directory (RETURN for currently selected directory)**
:

Type the name of the directory you want to copy to, in the same way. Press [RETURN] if you want to copy to your currently selected directory.

Screen: **Sub-directories not to be copied**
:

There may be some sub-directories within the directory you have just specified that you do not want to copy. Type their pathnames now. You can enter up to ten pathnames; press [RETURN] between each name. If there are no sub-directories you want to leave out, just press [RETURN].

Screen: **First object to copy**
:

Normally, LOGCOPY copies every sub-directory and file in your source directory (except any you have just asked it to leave out). The program takes them in alphabetical order. If this is what you want, just press [RETURN] here. If you want to leave out the sub-directories and files at the start of the alphabet, you can ask LOGCOPY to start with an object later in the alphabet.



EXAMPLE

Typing: BASIC[RETURN]

makes LOGCOPY leave out any sub-directories or files whose names fall earlier in alphabetical order than BASIC.

Screen: **Overwrite locked files? (Y/N)**
:

As it does the copying, LOGCOPY may find files on the disc you are copying to that have the same names as some you want to copy. LOGCOPY automatically overwrites these files unless they're locked. This prompt gives you the opportunity of having the locked files overwritten too.

Type: **Y[RETURN]** if you want them overwritten
or: **N[RETURN]** if you don't.

LOGCOPY now starts copying, displaying on the screen the names of each sub-directory and file as they are copied.

If you have asked it to copy a directory, it displays a message "Creating <directory name>". If a file exists on the destination disc with the same name as a directory you want to copy, LOGCOPY cannot make the copy and displays "Cannot create <directory name>".

Unless you asked for locked files to be overwritten, the screen displays "Not copying <filename>" when LOGCOPY reaches a locked file.

If you asked LOGCOPY not to copy some directories, the screen displays "Not copying <directory name>".

Copying level 2 files



If you have been working with a level 2 file server program, you need to convert the work you have stored for level 3.

To do this, you make sure the file server program is running, and then work from one of the stations. Attach a single or dual floppy disc unit to the station you are working at (which must have a disc interface), and have ready the floppy discs you stored your level 2 work on.

Log on as a system user.

Type: **CHAIN"\$.UTILS.L2TO3"[RETURN]**

Screen: **File Server Level 2 to 3 Disc Copier**

Drive number of level 2 disc
:

Put the first level 2 disc in a floppy disc drive and type the number of that, then [RETURN].

Screen: **Log on to level 3 file server**
:

Log on to the level 3 file server as a system user.

EXAMPLE

Type: ***I AM 254 SYST[RETURN]**

Screen: **Copy password file (Y/N)?**

Type: **Y[RETURN]** if you want any users that are on the level 2 disc but not already on the level 3 file server to be added to it

or: **N[RETURN]** if you don't.

This utility is useful to copy a large list of users on to the level 3 file server.

Copying now starts, and the screen shows a tree diagram of each directory copied.

If the program comes to a level 2 file that shares a name with a file already on the hard disc, it copies on top of the file already there, unless that file is locked. The files in the WELCOME, LIBRARY and UTILS directories are all locked, so they won't be copied over.

When the copying is finished

screen: **File Server disc copied**

Go through the process again for each of your level 2 floppy discs.

When the copying has finished, you can use the NETMGR utility to add more users if they are required.

Copying level 1 and DFS files

If your users have been working with a level 1 file server or independent DFS discs, you will probably want to copy this work on the level 3 file server.

To do this, make sure the level 3 file server is running, then log on as privileged user at a station equipped with a disc interface, disc drive and BASIC.

You will be using a program named "COPYF", which is a general purpose utility written in BASIC for copying files between hard discs, file servers and floppy discs. This program is quite simple to use: in general, if you do not understand a prompt, just press [RETURN]; to quit a particular option, press [ESCAPE].

COPYF will not automatically create directories for you on the file server, so if you will need any, create them first using *CDIR.

When you are ready to start,

type: **CHAIN "\$.UTILS.COPYF"[RETURN]**

screen: **Source filing system:**

The filing systems are A (for ADFS – hard discs), D (for DFS – floppy discs), N (for Network – the file server) or O (for Other). (To quit, type Q.) As you are copying from DFS to network



type: **D**

screen: **Enter DFS drive number**

type: **<drive number>[RETURN]**

screen: **Enter source directory**

type: **<directory>[RETURN]**

or just [RETURN] to use the currently selected DFS directory (initially, \$).

screen: **Insert DFS disc into drive <n>**

screen: **Destination filing system:**

type: **N**

screen: **Enter file server number**

To use the file server you are currently logged on to, just type [RETURN].

screen: **Enter file server disc name**

To use the file server you are currently logged on to, just type [RETURN].

screen: **Enter destination directory**

Type the name of the file server directory that you want to copy files to. (This must already exist.)

screen: **Copying mode:**

The copying modes are S (single mode) which copies a single file at a time and allows renaming, and M (multiple mode) and L (list mode) which copy groups of files from a single directory without renaming. They are used as follows.

Single mode copying

To copy a single file from disc to network

type: **S**

screen: **Source filename:**

type: <name of file on DFS>[RETURN]

screen: **Destination filename:**

type: <name to use on file server>[RETURN]

or

type: [RETURN]

If you just type [RETURN], the file will be copied onto the file server with the name it had on the DFS. Remember that any directory specified on the file server must already exist. Full pathnames may be used and follow the usual rules (ie are relative to the current directory unless preceded by \$).

screen: **Source filename:**

The file has been copied or skipped and you may now copy another file. Press [ESCAPE] to return to the "Source filing system" prompt.

screen: **file locked – overwrite? (Y/N)**

There is already a file on the file server with this name. Type Y[RETURN] to replace it, N[RETURN] to leave it.

Multiple mode copying

To copy a number of files at a time, answer M to the "Copying mode" prompt, then

screen: **Source list spec :**

type: <name of group of files on DFS>[RETURN]

This name must not include directory specifiers ie must refer to files in the source directory. Wild cards are used to specify the group (for example, F* [RETURN] means all files in the source directory starting with "F").



For each file matching the specification on the disc, a prompt will appear requesting confirmation that you want to copy it

screen: **Copy <filename> (Y/N):**

Type Y[RETURN] to copy it, N[RETURN] to skip it. Files are copied onto the file server with the same name as on the DFS disc.

When all the files have been copied

screen: **Source list spec:**

You may now copy another group of files or press [ESCAPE] to return to the “Source filing system” prompt.

List mode copying

To copy a number of files at a time, you can answer L to the “Copying mode” prompt. This mode is similar to Multiple mode, but copies all the files without requesting confirmation.

Quitting

To abandon a copying operation, press [ESCAPE]. This returns you to the “Source filing system” prompt. To finish with COPYF, type Q in response to this prompt.

Other commands

You may type filing system or operating system commands instead of a filename at any of the “filename” prompts, by typing a space followed by the command. Filing system commands will initially be obeyed by the destination filing system – in this case, the network file server – but you can address the other filing system by switching to it using the appropriate *command. For example, to catalogue the DFS disc

type: **<space>DISC[RETURN]**

screen: **Type a space to continue**

type: <space>

type: <space>CAT[RETURN]

If you want to type a number of *commands, you may

type: <space>[RETURN]

screen: **Enter * command**

screen: **Press RETURN only to exit**

You may now type *commands (without an initial space). When you have finished, type [RETURN] on its own.

This facility can be used, for instance, to change the source or destination directory, or to create directories on the file server.

Resetting the clock



To change the clock's date or time

type: **CHAIN "\$.UTILS.SETTIME"[RETURN]**

Screen: **The file server date is 4/12/85**

The time is 10:14:39

New date (Y/N/Q)

Type: **Y** if you want to change the date

or: **N** if you want to change only the time

or: **Q** if you want to leave the program.

If the date is correct, and you want to change only the time, type N, and the screen prompts you for the time. Otherwise:

screen: **Type new date as day, month, year:**

Type the date, separating each part with commas.

EXAMPLE

Type: 5,12,85[RETURN]

Next, (or if you typed N), you will see:

screen: **Type time as hour, minute, second:**

Type the time, separating each part with commas. Use the 24-hour system. If you don't want to change the time, press [ESCAPE].

EXAMPLE

Type: 9,15,40[RETURN]

Inserting and removing discs

Some file server disc units have removable discs. If yours is like this, there is one further task you occasionally have to carry out; this time at the file server itself rather than at a station.

The file server keeps a record of the disc currently in the drive. If you change the disc while the file server is running, this record will become out-of-date and the program may corrupt the new disc.

To change a disc, make sure first that no users are working with files on it.

Press: **[ESCAPE]**
on the file server keyboard until you see
screen: **Drive:**

Type: **<drive number>[RETURN]**

<number> is the number of the drive whose disc you want to change.

Screen: **Changing drive - <number>**
Load new disc

Now take out the old disc and put the new one in.

Press the space bar.

Screen: **Restarting - ready**

Autostart facilities



It is possible to make all the machines on the network follow an identical start-up procedure automatically when a user switches one on or presses [SHIFT][BREAK]. You can set this up using the autostart facility. This works similarly to the autostart at log on, described in the *User guide*.

For example, you could arrange for every machine to produce automatically a menu of programs for users to choose from as soon as they press [SHIFT][BREAK]. In this way users do not need to know anything about the file server or the Econet, or even how to log on, but can treat the station as if it were an individual microcomputer.

Whenever a user resets a machine by pressing [SHIFT][BREAK], the station automatically tries to log on as user BOOT. User BOOT can have a directory and !BOOT file like any other user and this can be set up to contain the starting routine you want all the stations to follow.

To set up an autostart that works whenever a user resets a machine:

1. Create a main directory and a user called BOOT (your hard disc probably already has a user BOOT).
2. Create a file called !BOOT in BOOT's directory. Put in it the commands you want the file server to carry out each time a user resets.
3. Change the autostart setting of BOOT's main directory by

typing: ***OPT4,<number>[RETURN]**

The number you type can be 0, 1, 2 or 3.

- 0 switches the autostart off
- 1 makes the file server *LOAD the file !BOOT each time a user resets
- 2 makes it *RUN the file !BOOT each time a user resets
- 3 makes it *EXEC the file !BOOT each time a user resets.

If there is no main directory BOOT, the file server will treat \$ as its currently selected directory. The start up option for the user boot is checked. If it is 1, 2 or 3, it will look for a file called !BOOT in \$ and try to *LOAD, *RUN or *EXEC it.

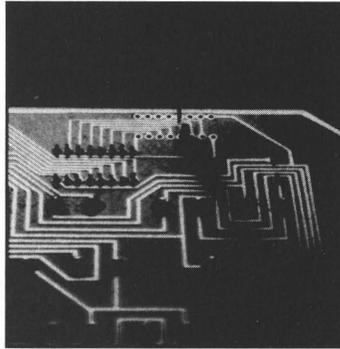
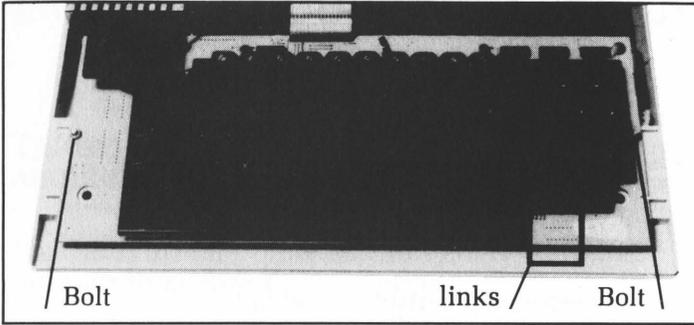
If BOOT's directory has no file !BOOT, or if there's no BOOT directory and \$ has no file !BOOT, users will get the error message "File not found" or "Bad command" when they press [SHIFT][BREAK].

Having set up the autostart, every machine on the network will follow your instructions on reset or power up.

If you want stations to autostart every time [BREAK] is pressed, rather than [SHIFT][BREAK]:

1. Make sure the computer is not connected to the mains power.
2. Unscrew the two screws in the back panel.
3. Unscrew the two screws on the underside of the computer near the front, and remove the lid carefully.
4. Remove the keyboard.
5. Solder link 5 in the set of 8 links at the right-hand front of the keyboard.

This makes [BREAK] act as [SHIFT][BREAK] and vice versa.



If the stations are not BBC Microcomputers, the method is different. Look at the manual that came with each station, or contact Acorn's Technical Enquiries department. Their address is on page 59.

Communicating between stations

In the directory LIBRARY there are programs which allow communication between stations. They are explained here rather than in the *User guide* since their use can affect the security of the network.

You can allow users access to some utilities and not others by changing the file access using the ***ACCESS** command.

Copying another station's screen ***VIEW**

Type: ***VIEW <station number>[RETURN]**

to copy the screen of the station number specified on to your screen.

If the screen of the station you wish to view is in a screen mode with a lower number than your own, you will get an error message "Mode <number>", which shows the mode number of the station you want to view. Change to that mode and give the ***VIEW** command again. This is to prevent the change of mode overwriting your BASIC workspace. You can read the remote machine's mode after such an error using **OSWORD &13**, which is described in the *Econet Advanced user guide*. If you get an error message, "Mode?", you cannot view this station.

You can also view another user by specifying the user identifier.

Type: ***VIEW JPB[RETURN]**

to copy JPB's screen on to yours, if JPB is logged on to the file server.

You can include ***VIEW** in programs. For example, if you want to stop your own prompt appearing on your screen in the middle of the one you have copied, run the following short BASIC program to prevent the prompt appearing until you press [ESCAPE].

To view station 100

10 *VIEW 100
20 REPEAT:UNTIL0:REM LOOP FOREVER



Taking over another station *REMOTE and *ROFF

This takes over the other machine completely and prevents its keyboard from working.

Type: ***REMOTE <station number>[RETURN]**

EXAMPLE

To take over user JOE at station 200 from station 100

*type: *REMOTE 200[RETURN]*

*or: *REMOTE JOE[RETURN]*

To sever the connection

type: ***ROFF[RETURN]**

Pressing [BREAK] at the station which has been taken over, or switching it off, does not break the remote link. Pressing [BREAK] on your machine may cause “Not Listening” or “No Reply” messages on the remote machine, if it tries to communicate with you after the link is broken.

Sending short messages *NOTIFY

You can send a one-line message to another station using *NOTIFY.

Type: ***NOTIFY <station> <message>[RETURN]**

or: ***NOTIFY <user id> <message>[RETURN]**

EXAMPLE

To send a message from station 100 to JOE at station 200

*type: *NOTIFY 200 HOW ARE YOU?[RETURN]*

The message will go into the keyboard buffer of JOE's machine, which will beep and print

— 100: HOW ARE YOU? —

No carriage return is printed so JOE can delete the message before continuing.

Protecting your station *PROT and *UNPROT

You can stop other users using *REMOTE, *VIEW and *NOTIFY on your station by

typing: ***PROT[RETURN]**

and remove the protection by

typing: ***UNPROT[RETURN]**

Any station which tries to contact yours using *NOTIFY after it has been protected will get a “Not listening” message. If a user tries to use *REMOTE or *VIEW the keyboard will be disabled until [ESCAPE] is pressed.

NOTE: if your network filing system ROM is version 3.34, station numbers 240-254 are known as privileged stations in the Econet, and are able to by-pass this protection. This means that the use of these stations must be controlled.

Reference section



Routine starting-up and closing-down procedures

This section sets out the steps you should follow each time you set up the file server after it has been switched off.

Make sure that the file server, user stations, clock and terminator boxes are plugged in correctly to the Econet and switched on.

At the file server:

hold

down: **[SHIFT]A**

Press: **[BREAK]**

Release: **[BREAK]**

Release: **[SHIFT]A**

Screen: **Number of drives:**

Type: **<number of file server drives you're using>
[RETURN]**

Screen: **Command:**

Type: **S**

Screen: **Stations:**

Type: **<number of stations>[RETURN]**

Screen: **Cache size - 42AF objects - 42
Starting - Ready**

The file server program is now running.

Closing down the file server



When you have finished with the file server at the end of the day

type: **Q**

on the file server keyboard to exit from the program.

Screen: **Command**

Press: **[CTRL][BREAK]**

The file server machine now reverts to behaving like a normal microcomputer with a second processor attached and you can carry out any of the functions explained in the *ADFS Guide*.

Command summary

This is a list of the commands mentioned in this guide. Elements of the syntax shown in square brackets are optional.

Commands typed at the file server

When starting up the file server you can enter the following commands after the prompt "Command:"

- A** to enter the number of drives again
- S** to start the file server program running.

When the file server is running, you can type:

- M** to start and stop the file server screen displaying commands entered at stations
- Q** to stop the program and return to the "Command:" prompt.

You can also give the following ADFS commands:

***CAT [**<name>**]**
displays a catalogue of files

CDIR **<directory name>*
creates a directory

DELETE **<filename>*
deletes a file

***FREE**
displays information about the discs in the file server.

Commands typed only at user stations

You can type ***CAT**, ***CDIR**, ***DELETE** and ***FREE** at user stations as well as at the file server. The following commands can only be given at user stations:

***CLOSE**
closes any network files opened by that station



***DATE**

displays today's date

***I AM[<group id>].<user id>[<password>]**

logs the user on

***NEWUSER <user id>**

***NEWUSER <group id>**

puts a new user, or group, into the password file

***NOTIFY <station number> <message>**

sends a message to the station specified

***NOTIFY <user id> <message>**

sends a message to the user specified

***PRIV <user id> [S]**

grants and removes privilege for the user specified

***PROT**

protects the station from *REMOTE, *VIEW and *NOTIFY

***RDFREE <user id>**

displays the amount of space available to a user

***REMOTE <station number>**

takes over the station specified

***REMOTE <user id>**

takes over the station of the user specified

***REMUSER <user id>**

removes the identifier from the password file

***ROFF**

breaks the link made by *REMOTE

***SETFREE <user id>**

changes the amount of space available to a user

***TIME**

displays the time

***UNPROT**

removes the protection set by *PROT

***USERS**

displays information about who is logged on to the file server

***VIEW <station number>**

copies the screen of the station specified

***VIEW <user id>**

copies the screen of the user specified.

Command abbreviations

You can abbreviate several of the commands listed above:

name	abbreviation
-------------	---------------------

*CAT	*.
*CDIR	*CD
*DELETE	*DE.
*I AM	*I.
*NEWUSER	*NEW.
*OPT	*O.
*PRIV	*PR.
*REMUSER	*REMU.

The file server master directories



The master directories which you can copy on to your file server hard disc during initialisation are:

WELCOME – a directory of welcome programs, useful for demonstration

LIBRARY – a directory of utilities including:

NOTIFY, PROT, REMOTE, UNPROT and VIEW for communicating between stations (see page 51)

PS, which is used to select the printer server

DISCS, FREE, RDFREE, SETFREE and USERS, other utilities to help the network manager

NETMON, a debugging utility for those writing network programs, which is explained in the *Econet Advanced user guide*

UTILS – a directory of programs for the network manager, including L2TO3, NETMGR, ARCHIVE, GETBACK, LOGCOPY and SETTIME.



If this happens frequently, contact Acorn's Technical Enquiries department.

OSWORD &13 will return 66 to distinguish this from other 168-type errors.

Clock failure

Check that you have plugged in the file server clock correctly. If you still have problems, contact Acorn's Technical Enquiries department.

Disc fault **199**

The file server cannot physically read the disc, which is damaged, unformatted or the wrong type.

Disc full **198**

You have tried to use more space than is left on the disc. Ask users to delete out-of-date files to make room. You can find out how much space is left using *FREE and can wipe out a whole directory using the directory wiper option of NETMGR.

FS Errors **168**

There is a series of errors, all displayed as FS Error XX (where XX is a hexadecimal number), which should only happen very infrequently. These have composite error numbers: they are all given the same number (168) as there are not enough numbers available for each to have its own.

The FS Errors are listed below, with the error string displayed on the left and the number returned from OSWORD &13 in decimal on the right.

Very rarely the message will be displayed at the file server as "FS internal error XX". This means that the error has made the file server stop running and you will have to start it again. The meaning of the error and recommended action is the same as that given below.

FS Error 27 **39**

The password file has been corrupted, possibly by a system user SAVEing or using random access to it. Go to your back-up copy.



Line jammed **160**

One of the interfaces is not working properly and is transmitting data continually on the network.

Go through the following steps, checking to see if the fault has disappeared at each stage:

- reset all stations connected to the network
- remove the stations from the network one by one, checking to see when the error message disappears: the last station switched off was faulty
- check for faulty terminators
- check for crossed wires in the network cable
- check for a faulty local station.

If you cannot solve the problem contact Acorn's Technical Enquiries department.

Memory fault found

The file server memory test has failed. Check that everything is plugged in correctly. If you cannot start the file server, contact Acorn's Technical Enquiries department.

Mode <number> **173**

You have tried to *VIEW a remote machine in a lower mode. Change to the mode <number> and try again.

Mode ? **173**

You cannot *VIEW this station.

Net error **161**

Check that:

- the clock speed is suitable (see the *Econet Installation Guide*)
- the terminators are connected to the power supply and the network
- there isn't a network fault such as a short circuit, open circuit or crossed wires.

No clock **163**

The clock signal is not reaching your machine. This signal is generated by the network clock unit (this is the clock unit plugged into the network, not the black clock plugged into the file server computer). The signal synchronises the stations on the network.

Check that:

- the computer is correctly plugged into the network
- the clock unit is plugged into the network and is being supplied with power
- the cables connecting your computer and the clock box to the main network are not faulty.

No reply **165**

A server operation has failed in the middle. Possibly someone has pressed [BREAK] at the file server during an operation.

Not listening **162**

Your command has not been accepted by the file or printer server.

Check that:

- the file server program is running
- the station number of the file server you are trying to reach is 254. If it isn't, then you must first specify its number with the *I AM command (See the *User guide*).

This message can also appear if the file server is very busy and the station cannot gain access within 15 seconds. Try the command again.

A user may also have corrupted the space below PAGE which the NFS uses to store the file server number it is trying to reach. Press [CTRL][BREAK] and log on again.

Not logged on **174**

You are trying to *NOTIFY or *VIEW a user who isn't logged on.

PW file not found **168 and 33**

Someone has tried to log on when the file server disc does not have a password file.

Too many users **184**

One more user has tried to log on than you entered at the "Stations:" prompt when you started the file server. Type Q and enter a bigger number of users.

Service and support



If you have any problems with setting up or running the file server or need any advice, contact either a dealer from the national network of approved dealers, or:

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

Glossary

Archive

A security copy of the files stored on the network.

Autostart

A procedure followed automatically by a computer when it is switched on.

Directory

A collection of files and other directories.

Group identifier

A string of up to ten characters used to refer to a group of users. Example: GROUP3. Each person in the group has their own user identifier. Example: GROUP3.ADAM.

Library

A collection of programs available to everyone on the network.

Logical copier

A program that copies files between the file server hard disc and another hard disc.

Object

A file or directory.

Owner access

A user who has owner access to a directory can save, delete and rename files in that directory, change their access status, and create sub-directories in the directory.

Password file

A file that records the identifiers and passwords of all the users on the network.

Pathname

A name that specifies the path from the currently selected directory to a file stored on the disc.

**Public access**

Users who have public access to a directory can read or change files only if the directory's owner has set an access status which allows them to.

Root directory

The directory at the root of the tree of directories on the disc. Called \$ for short.

System user

A user who has owner access to the root directory, and so to all the files on the disc.

User identifier

A string of up to ten characters used to refer to a user on the network.

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