

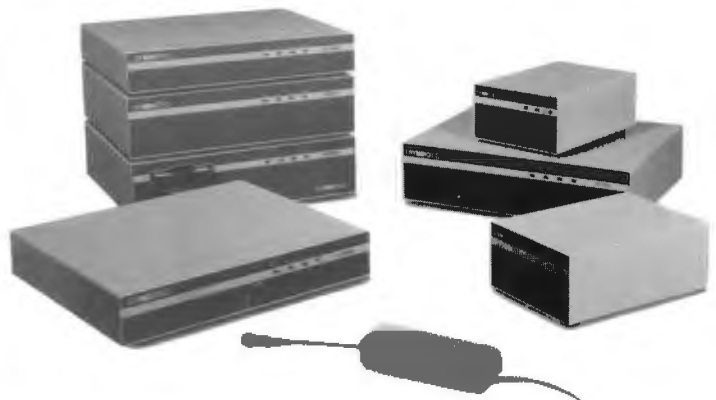
# BUYING A NETWORK?

Our compliments to Educational Computing, the article written by David Benzie, published in the March 1985 issue, will certainly help prospective buyers when evaluating the

various local area networks available to the educational user. To help with your decision, we have put Symbnet, the Symbiotic local area network system, to the test...

1. What has to be done to standard disk based software to make it run on the network? The obvious, preferable answer is nothing but it can be a horrific problem. This question is, quite deliberately, the first on the list as a negative answer should cause the network to be rejected.
2. Does a full range of system software exist for use on the network (e.g., Basic, Pascal, word processor, database, spreadsheet, assembler)? At what cost (i.e., does a copy have to be purchased for each station or for the network as a whole)?
3. Is the amount of free memory reduced on a network computer relative to a stand-alone one? What effect does this have on software?
4. Will ROM based software work on networked machines?
5. Does the network conform to the original computer manufacturer's standards? (There will be yet more software problems if it doesn't.)
6. Can computers from different manufacturers be mixed on the network?
7. How long does it take to do the following:  
Load a 10K Basic program into one station.  
Load a 10K Basic program into eight stations.  
Save a 10K Basic program from one station.  
Save a 10K Basic program from eight stations.  
Load/save a 10K data file into/from one and eight station(s).  
This is particularly important if the network is to be used for other than simple programming. Some networks perform this task very slowly.  
Network switch-on to eight stations running a 10K Basic program.
8. Does the network allow data files to be used?
9. Can random access files be used?
10. Can several users read the same file at the same time? This is particularly important when working with databases.
11. Can several users write to the same file at the same time?
12. What is the maximum file size for programs and data?
13. Is read/write access to discs restricted in any way?
14. Are stand-alone (i.e., normal) and network disc formats compatible/the same? If not, you may have problems moving software onto the network.
15. How much of the nominal disc capacity is taken up by system software required by the file server? How much is effectively left for users?
16. How are files organised on the server? On a Winchester disc, no-one wants a list of 500 file names every time they ask for a catalogue of what is available! Some form of categorisation should therefore be provided.
17. Can files be hidden/made secure/made private in any way? If yes, how effectively? (And don't rely on it!)
18. What keys does a user need to press to: log on to the network (after switching on), load/save a file/program and print out a file/program.
19. Can the whole network be started up automatically? Can it be started up from a single station?
20. What degree of control can one station exert over other stations? For example, can one station force another to load a particular program?
21. Is printing on the network done via a spooler?
22. Can computers on the network also make use of their own (i.e., local) printers/disc drives/other peripherals in addition to those available on the network?
23. What is the maximum length of the network cable? What is the maximum number of computers that can be linked to the network (practically as well as theoretically!)?
24. What are the reliability prospects for the essential elements of the network - the file server, the cables and the clock boxes (where used)?
25. Is there an identifiable upgrade path to a better system that will not involve the scrapping of expensive equipment?
26. For Winchester discs: How is the disc backed-up?

1. Nothing... All standard cassette, ROM, and floppy disc software can be run on the Symbnet system without modification.
  2. Symbnet supports all standard system software, (including Z80 and 6502 second processors) one copy is sufficient for the whole network.
  3. No. Memory use is identical to that of DFS.
  4. Yes. ROM software can also be loaded through the network.
  5. Totally.
  6. Yes. The BBC and the complete range of Apple microcomputers.
  7. 3 seconds  
20 seconds  
5 seconds  
40 seconds  
1 minute  
34 seconds
  8. Yes.
  9. Yes.
  10. Yes.
  11. Yes. Symbnet has a powerful multi user locking system.
  12. The same as for DFS.
  13. Any volume may be accessed as read/write, or read only depending on the user's password.
  14. Yes, DFS format.
  15. None, it is all available for users.
  16. The Winchester disc can be configured for up to 2048 DFS compatible volumes, each with it's own directories and sub directories, in sizes from 32K to 256K.
  17. Yes, a selection of up to 16 volumes may be accessed under one password. Any volume may be private, shared or hidden. Passwords are heavily encrypted.
  18. \*LOGON password (load, save, and printing are done exactly as for DFS).
  19. No. It is however possible to set up "auto booting" (!BOOT) software on \*LOGON. Using a group password would cause a whole class to be forced into the same program on \*LOGON (preceded by instructions via electronic mail if required).
  20. No. Not necessary (see above).
  21. Yes.
  22. Yes.
  23. Up to 5 miles between stations! using fibre optic technology. Up to 255 stations (we suggest no more than 75 operating simultaneously, for reasonable performance).
  24. Excellent, Symbiotic have installed over 4000 Symbnet network stations worldwide in the last two years.
  25. Symbnet is already at the practical limits of hard disc and fibre optic technology, although constant research and development is taking place to enhance the total networking system capabilities via both hardware and software.
  26. Using Symbstore the digital cassette tape streamer, the Symbfile hard disc can be backed up at the approximate rate of 1 megabyte per minute.
- Finally...Symbnet does not require Econet interfaces in the BBC micro, neither does it require DFS. It does not need a BBC micro as a file server, it does not need clock boxes, terminator boxes or Econet level 1, 2, or 3 software.**
- An average installation (excluding cabling) comprising of a 21MB hard disc, a file server, and 10 network station kits would come to approximately £4,275.**



Educational Computing, March 1985

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