



# THE CHAIN GANG



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## Interface 1

Networks don't have to involve miles of cables and expensive equipment - Spectrums equipped with Interface 1 can communicate and share microdrives and a printer, making a very low-cost system

**Computer networks can be nationwide, like Prestel, or they can be on a smaller scale, linking travel agents with airlines, for example. However, these systems are operated by powerful and expensive mainframe computers. In this article we look at how to set up a network using a group of home computers.**

A network is a system of computers linked together to share data and equipment. However, each computer has its own operating system and its own 'protocols' (procedures, formatting rules, and so on) for communicating with the outside world. Because of these problems of compatibility, the individual stations or *nodes* of a network must be similar computers: all Spectrums, or all Apples, for instance.

For the sake of discussion, let us assume that a group of people has five computers that they want to link to a single printer. Our group needs to be able to send information to the printer from any of the nodes. What if two or three nodes have text to be printed out at the same time? And more significantly, what if node 3 has text to be printed out but needs to continue working while the printer is operating? To solve these problems, we have to instal a sixth computer, called the *print*

*server*. This machine is dedicated to controlling the flow of data to the printer and, therefore, cannot be used for anything else. The print server will store the documents in order of priority. Once the piece of text has been sent from a node to the print server, the node can work on other things.

The use of a dedicated machine that acts as a server is essential to a network, because it is through the server that information can be shared. In addition to a print server, some network applications would require a *file server* to handle shared disk drives and to control the flow of information from node to node.

The next step is to create a link among the node computers. This is done by stringing cable — either a twisted-pair or coaxial cable — from machine to machine. Although there are several possible arrangements for the nodes and the server station, including a 'star' and a 'ring', the concept is essentially the same, so we will describe the process in somewhat general terms. Making the connection usually requires a special networking interface for each node. Such an interface might be a simple RS232 connection or a plug-in printed circuit board. In addition, the server station requires a storage unit with enough capacity to handle all the work flow. The server station also requires sufficient RAM to manage the network.