

GETTING A NETWORK

Peer-to-peer network

The simplest form of network, known as a *peer-to-peer* network, is created by connecting a number of computers together via network cables and a hub or *switch*. This allows the sharing of resources across the network: all the computers can use a printer connected to one machine, and each computer can access information stored on the other machines' hard disks.

Windows 98 Second Edition introduced shared internet access for each connected computer via a modem connected to one of the machines on the network. With the advent of *broadband* (high speed *Internet* access), *routers* are a popular choice for efficiently sharing an Internet connection between several machines. Every user can browse the web at the same time using a single phone line.

Peer-to-peer networks can work well for sharing documents and many other files, and are particularly suited to smaller networks of up to six computers. They are relatively straightforward to set-up for the technically confident (it involves opening up the back of the computer and installing the network cards, and connecting machines together using cabling and a hub). As peer to peer networking makes use of existing Windows software, you don't need to buy additional software.

However peer-to-peer networks can still be hard to manage as data is often scattered across the network, and they aren't so suitable where there is a need to access information held on a central *database*. In this situation one computer runs the database at the same time as being used for other applications like word processing. This can be too much for one machine, bringing real problems if the computer crashes or is switched off accidentally, resulting in serious data corruption.

A server-based network

A more reliable solution involves centralising data storage and management of the network on to a powerful computer dedicated to the task. This server based approach becomes a requirement as networks get bigger, or if you need to access information stored centrally in a database. The server is a specially designed computer fitted with a large *hard disk* and a tape back-up unit and it runs the software that manages the network. It is essential to buy a machine designed to be a server rather than using a standard PC with a large hard disk.

A server based network brings the advantages of centralisation. Perhaps the biggest single advantage is that data is stored centrally and can be backed up automatically on to tape. This provides a solution that is easy to administer and is the only way many organisations will achieve reliable *backup*. The server also provides an effective way of managing confidential information, providing a secure way of controlling who gets access to what. It provides a mechanism for central administration of the computers within an organisation: something that is difficult to achieve in any other way as the number of PCs grows. The downside of a network is that it must be properly administered. It will give years of reliable service if properly looked after but without proper support it could potentially be a disaster.

Network software

If you are installing a peer-to-peer network, you may well not need any new software. Windows 95, 98, Me, 2000 and XP all include software for sharing files and printers. Windows 98 Second Edition, Windows Me, 2000 and XP include software for sharing a *modem* so that different users can access the internet at once.

If you are installing a server-based network, you will need to buy new software. Novell NetWare was the dominant network software for many years, and still accounts for a large number of installations particularly in the corporate sector. However, Windows Server software has successfully challenged Novell, especially for smaller networks, and is now the more popular choice both for voluntary

organisations and in the commercial world. This popularity may reflect Microsoft's marketing strength, but is also due to the way Windows server software integrates so well with the popular Microsoft Office software. In particular, Windows Server software can provide the basis for delivering internal and external email across the network using a combination of Microsoft Outlook on each workstation and Microsoft Exchange Server on the server.

The latest version of Microsoft's server software, Windows 2003 Server provides improvements on previous versions (i.e. Windows 2000 Server and Windows NT Server). However, setting up a server-based network remains a complicated business best done by an experienced network engineer. Linux is [*open source software*](#) that is gaining popularity for use on servers because of its stability and the fact that it can be run on lower specification machines (e.g. on an old desktop machine rather than a computer designed to be a server).

Although Linux is becoming more and more popular, Microsoft still dominates the network software market. It may therefore be more difficult to find someone who can install, set up and support a network running Linux. This is becoming less and less of a problem as Linux gains popularity.

Who will install the network?

The installation of a network has become a routine task and there are plenty of experienced companies available to do the work. Research has shown that voluntary organisations are more satisfied with companies that specialise in the voluntary sector.

Prepare a requirements specification that describes what you want in your own terms, the number of computers you have, the layout of your premises, and the use you hope to make of the network. Don't go into too many technical details, just set out your requirements and let the would-be suppliers put forward their own technical solutions. Take a look at our [Invitation to Tender template](#) as a basis for getting your own requirements down on paper.

Always get at least three quotations for the work. Make sure you get references and talk to organisations about their experience of working with the company.

There are two main criteria to bear in mind when choosing a company to install your network. They obviously have to be able to do the installation, but they will also provide ongoing support to your network. You can expect a properly installed network to run smoothly with little trouble, but when it does go wrong it will seriously disrupt your work and so you must have access to reliable technical support. So choose your installer not only on their ability to do the work, but more importantly on their ability to provide good ongoing support.

In any organisation, however small, it is important to have a single person who has overall responsibility for the organisation's ICT. This does not have to be a technical role and is concerned more with managing ICT resources so they can be used effectively. Once you have a network, this role becomes even more important - for example someone will need to ensure backups are done, *antivirus* software is kept up to date, liaise with the company providing network support etc.

Source: <http://www.ictknowledgebase.org.uk/getanetwork>