

## SIMPLE LOCAL AREA NETWORKING

Disclaimer. Everything that follows is (to the best of my knowledge) the truth. However, it is far from being the whole truth. There is a lot more to networking than what I've described here, which is aimed at setting up a simple two or three computer peer to peer local area network for file or printer sharing.

### Hardware.

You will need:

- A network card for each computer
- A router
- "Patch" leads

### Software

All Windows operating systems from Windows 95 onwards have the necessary software as part of the package, although for Windows 95 it isn't installed by default.

### The details

A network card is a cheap component which either slots into a spare slot on your motherboard (for desktops) or comes as a PCMCIA card (laptops). Many "off-the-shelf" computers, especially laptops, now come with a network card as part of the package. Most network cards are capable of working at 100Mbps if required, but a few of the cheapest may have a maximum speed of 2Mbps (Megabits per second). If installing your own, then, depending on the type it will either be automatically installed after being detected by the system, or you will need to install a special driver from disk or CD-ROM, following instructions given with the card.

A router is a stand alone device into which the cables from the network cards are connected, and which controls which signals go to which machine. It is possible to connect two computers without a router by means of what's called a crossover cable, but otherwise the router is compulsory, and we will assume a router is being used. A router has a maximum speed, either 10Mbps (known as T-Base 10, cheap) or 100Mbps (known as T-Base100, more expensive). A router will typically accept 4 or 8 computers. An ADSL router has an extra input, from the phone line, for an ADSL connection, and is a somewhat more complex beast.

Whatever the speed, the cables are the same. Colloquially known as "patch leads", more correctly as Cat5 cable with RJ45 connectors, these look like large telephone extension leads, and are available off the shelf in a range of predetermined lengths, or made to order by any decent computer retailer up to a maximum length of 100 metres.

### Putting it all together.

This couldn't be easier- simply connect one patch lead from each network card into the router. Don't forget to plug the router into a power source if needs be (some are self powered).

## Setting up the connections

The procedure described here varies somewhat between Windows versions. I'm describing what to do in Windows 98. In Windows XP, you set up your card in Control Panel - Network Connections, and use "My Network Places" to manage shares.

For Windows 98.

Open "My Computer" - "Control Panel" - "Network". You will be presented with a dialog box.

First select "Identification". The local area network must have a "workgroup" name - the same for every computer on the LAN, and each individual computer must have a unique "computer name". Let's call our workgroup "OASIS" and this computer "MACHINE1". Our second computer will be "MACHINE2". Enter these in the boxes. The Computer Description can be whatever you like. Check that the Access Control is set to "Share" - much easier than the alternative, and all we need.

Now select "Configuration" . What you now see will depend on your own setup, but you should see an entry something like  
TCP/IP < - (your network card) .

Select "Properties" and you are presented with what looks like a most daunting multi-tabbed dialog box. However, you only need to make a few entries.

The most important is the IP address, which we must specify. Each machine on the LAN must have a unique address, and it's much easier to have these close together in the same (private) series. being completely conventional, I'm going to use the 192.168.x.x range. I'm going to number machine 192.168.0.1 (and machine2 192.168.0.2). I'll make the subnet mask 255.255.255.0 to ensure only machines in the 192.168.0.x range are included in the search.

Now we need to set the file and print sharing. Since there are no security worries, on both machines we can select "allow others to share" for both files and printers.

As for the rest, we're not using WINS, there's no gateway, and we're not using DNS, so we can set those tabs appropriately, and ignore the rest.

If we've configured both machines, connected all the cables, and rebooted both machines, each should be shown in the Network Neighborhood of the other.

Click on "Entire Network", and the workgroup, Oasis, should be found. Click on that, and the two machines, 1 and 2, should be present. At this stage, that's probably all. What we now have to do is to share files and printers.

## Sharing a Printer

Probably the commonest use of simple LAN is to share a printer between two computers. We will assume the printer is physically connected to machine1 and we want to use it from machine2.

In machine1, select "Control panel" - "Printers". There should be an icon for your particular printer. Right click on the icon and select "sharing" from the menu. All you need to do, under the "sharing" tab is to select "shared as", and give the printer a name. Being boring, we'll simply call it "PRINTER". There's no need to add a comment, and no point in adding a password.

In machine2, select "Control Panel" - "Printers", then "Add printer". Now select "Network Printer", and allow the system to browse the network. It should find PRINTER on MACHINE1. We select it. We may be required to install some drivers, just as if it were a new printer on our own machine, or Windows may use the drivers on the host machine. But it pays to have the drivers ready in any case. After a reboot, we can now print to the printer on machine1 from machine2 - provided, of course, that machine1 is turned on!

## Sharing files

If you wish to share a directory on your hard disk with the other machine, open "My Computer" then navigate to the directory you wish to share. Right click on it and select "sharing". As with a printer, you will be invited to give it a share name, but additionally you can determine what sort of access - read only, full, or password protected, it will have.

Once the share is set up, then the share name will show in the network neighborhood of other machines on the LAN. It is perfectly possible to share an entire disk rather than just a folder, but this can have security implications outside the most trusting of LANs.

## Permanent shares and mapping

Finally, if you have a folder or folders on one computer that you always wish to be available to another, you can map them. Navigate to the share name in Network Neighborhood on the client (recipient) computer and right click on the share. One of the options will be to map it to a (spare) drive letter and to reconnect every time the computer starts. That folder will then appear to be part of the disk structure of the client machine, with its own drive letter, just as long as the host machine is turned on. At boot up time, the host machine MUST be booted first!