Adding a printer to a network using TCP/IP

To add a printer to a network using TCP/IP, you need the following elements:

- 1) A printer with an Ethernet card
- 2) An unused IP address
- 3) A Windows 2000 or XP PC, with an Ethernet card
- 4) A DHCP capable network that all computers and the printer can be connected to

1) Determining the IP information:

The first step is collecting the relevant information to allow you to set up your printer. The information you need is:

- > An unused IP address
- > A subnet mask
- > A default gateway

It is best to get this information from a network administer but this can be collected from any computer connected to the network.

To collect the information from a computer, which is connected to the network, follow the steps below;

- ➤ Go to your computer, click the "*Start*" button then select "*Run*".
- > In this window, type "cmd" and press enter. A black DOS window will open.
- In this window, type "ipconfig /all" and press enter. A result similar to Fig 1. will appear

Fig 1.

C:\WINNT\system32\cmd.exe	>
Ethernet adapter Local Area Connection: Connection-specific DNS Suffix : Description	
Lease Obtained : Friday, October 29, 2004 9:27:07 AM Lease Expires : Saturday, October 30, 2004 9:27:07 A M C:\Documents and Settings\Administrator>_	

From this screen we can see some of the information we need:

- > The computer's IP address 192.168.2.116
- A subnet mask 255.255.255.0
- A default gateway 192.168.2.1

From this information we can get the next piece, the IP address for the printer. Pick an IP address that is close to the one used by the computer, e.g. 192.168.2.125.

It should be easily remembered and the first 3 sets of the printer's IP Address should match the computer's IP address; in this example the printer and computer both have 192.168.2 as the first 3 sets.

2) Finding a free IP Address.

In the DOS window from section 1, type "*ping 192.168.2.125"* (substituting your chosen IP address for the example) and press Enter.

You should receive one of two possible responses:

Fig 2.



Fig 3.

C:\Documents and Settings\Administrator>ping 192.168.2.116 Pinging 192.168.2.116 with 32 bytes of data: Reply from 192.168.2.116: bytes=32 time<10ms TTL=128 Ping statistics for 192.168.2.116: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms

Fig 2. shows the request timed out and the IP address is not currently in use. You can use this address.

Fig 3. shows the request was replied to and the IP address is currently in use. You must choose a different address and retry the ping.

Once you have secured an unused IP address, you now have all the information needed to set up the printer on the network.

3) Adding the IP information to the printer

Most modern printers have a control panel in front. For this example we will be using the menu buttons from HP printers.

There are 4 buttons (Fig 4.) we are concerned with and each button has a left and a right direction for scrolling through the menus:

Fig 4.



- Use the Menu button and scroll right until you reach the "EIO Jet Direct or HP MIO" menu.
- Use the Item button and scroll right until "CFG Network" option appears. Use the Value button to change it to "Yes" and use the Select button to set it.
- > Use the Item button to go to "TCP/IP = On'' and then continue to "CFG TCP/IP'' and use Value and Select button to change it to yes.
- Use the Item button to go to "BOOTP" and use Value and Select button to change it to no.
- Use the Item button to go to "IP BYTE 1" and change it to the first set of numbers in the IP address, in this example, 192. Use the Select button to set the new number.

Menu Item	IP Information	Example
IP Byte 1	1 st IP Address set	192
IP Byte 2	2 nd IP Address set	168
IP Byte 3	3 rd IP Address set	2
IP Byte 4	4 th IP Address set	125
SM Byte 1	1 st Subnet Mask set	255
SM Byte 2	2 nd Subnet Mask set	255
SM Byte 3	3 rd Subnet Mask set	255
SM Byte 4	4 th Subnet Mask set	0
LG Byte 1	Blank	0
LG Byte 2	Blank	0
LG Byte 3	Blank	0
LG Byte 4	Blank	0
GW Byte 1	1 st Default Gateway set	192
GW Byte 2	2 nd Default Gateway set	168
GW Byte 3	3 rd Default Gateway set	2
GW Byte 4	4 th Default Gateway set	1
Timeout	90	90

> Using the Item and Select buttons to set the following values:

- > When all these values have been set, press the "Go" button.
- > Turn the printer off and then back on.

4) Checking the printer's IP address:

- > Use the menu button and scroll right until you reach the "Information" menu.
- > Use the Value button and scroll right until "*Printing Configuration"* option appears.
- > Use the "*Select"* button to print a configuration page.
- On the configuration page, check under IP Address. This number should consist of 4 sets, each 1 to 3 numbers e.g. 192.168.2.125. This is the IP or network address for the printer.

5) Checking the printer from the PC:

In the DOS window from section 1, type "*ping 192.168.2.125"* (substituting your chosen IP address for the example) and press Enter.

You should receive the response as shown in Fig 5:

Fig 5.

C:\Documents and Settings\Administrator>ping 192.168.2.116 Pinging 192.168.2.116 with 32 bytes of data: Reply from 192.168.2.116: bytes=32 time<10ms TTL=128 Ping statistics for 192.168.2.116: Packets: Sent = 4, Received = 4, Lost = 0 <0% loss>, Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms

If the ping comes back with a reply, you have set up the printer correctly.

To add the printer to your computer, see our documentation for <u>Adding a printer via</u> <u>TCP/IP to a Windows 2000/XP PC</u>