

## Typical Internet Configuration for DI-206 / DI-308 Routers

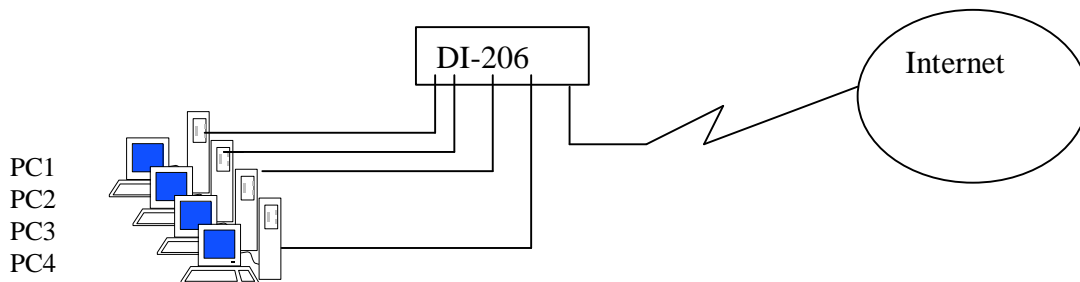
(For Single user Internet Account, with static or dynamic IP address.)

### 1. *Introduction*

This document explains how to connect to the Internet using a single user account from an Internet Service Provider. The IP network is a private network and is chosen by the installer. In the example below the private IP network is 195.10.10.xxx. The service provider may either provide you with a static IP address or more often a dynamic IP address, that is to say the IP address is assigned to the router at connection time. A local network IP address still needs to be assigned to the router.

It is assumed the network is already configured and working in terms of network adapters and drivers installed and configured.

Fig 1.



### Example Setup Configuration

DI-206	IP	195.10.10.1
PC1	IP	195.10.10.2
PC2	IP	195.10.10.3
Subnet for all devices		255.255.255.0
Default Gateway (All PC's)		195.10.10.1

2. ***Information required from the ISP.***

A certain amount of information is required from your ISP. See list below.

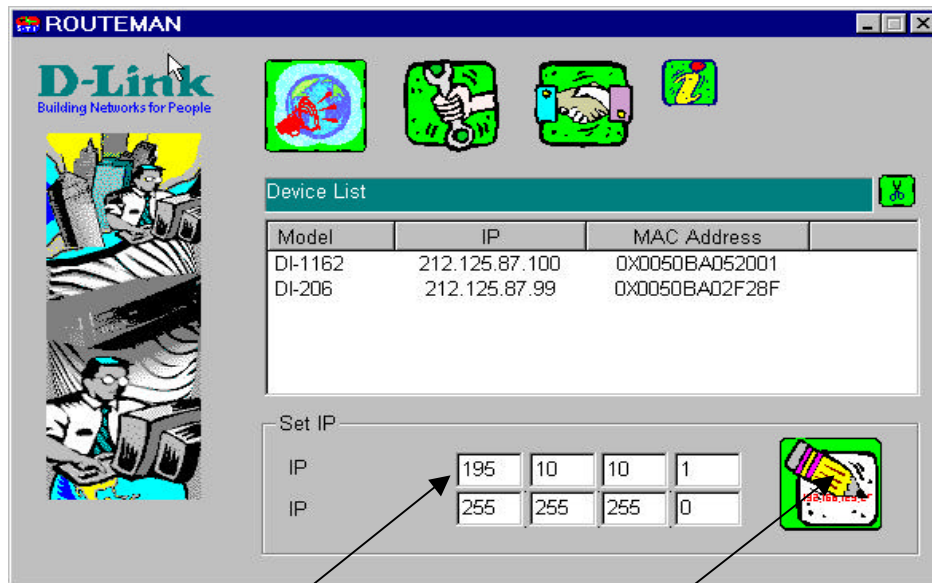
- ?? IP address (only for static IP address connections)
- ?? Username
- ?? Password
- ?? ISDN Telephone number to dial
- ?? DNS (consists of primary domain name controller IP, and name)

3. ***Router Configuration***

It is best if you were first to do a factory reset on the router to ensure uniform settings. To do a factory reset, attach to the router using the supplied serial cable. From the Main Menu select 'System Maintenance' then 'Factory Reset'

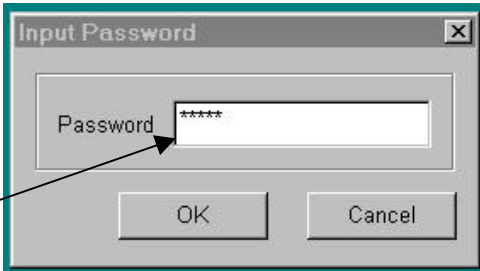
The simplest way to configure the router for the Internet is to install then follow the Internet connection Wizard. To run the wizard, you must first install the RouteMan software. This software is provided on a floppy. Install RouteMan on to your PC first then first task then is to assign the router its IP address, in this example its 195.10.10.1.

RouteMan Configuration screen.

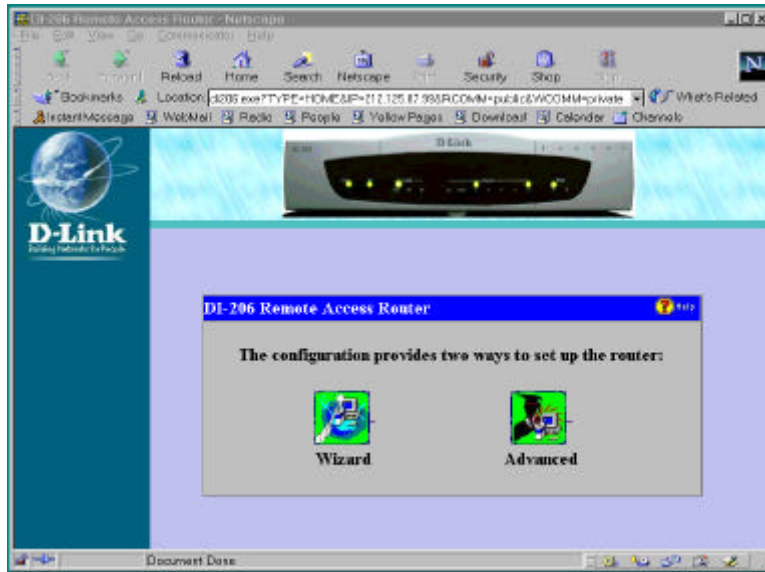


Type in the router's IP address and mask here, then click here \_\_\_\_\_ This will assign the router its IP Address

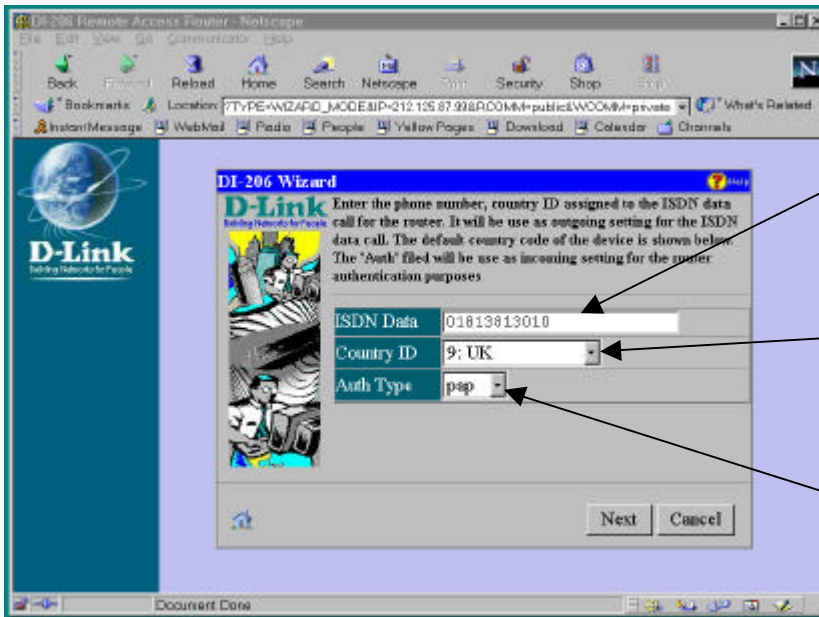
Type in the Router login Password, The default password is 'Admin'



Once the IP address has been set, highlight the DI-206 in the device list and double click it. Doing so will launch your web browser and display the screen below.



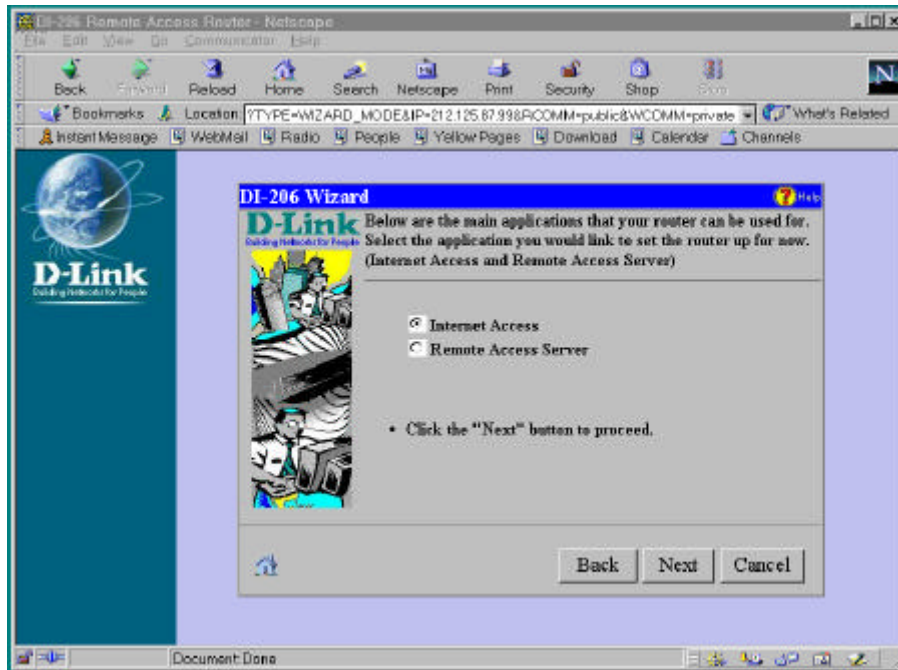
Click on 'Wizard'.



Type here the ISDN number that this router is connected to

You will to set the country code, click the down arrow and select you country

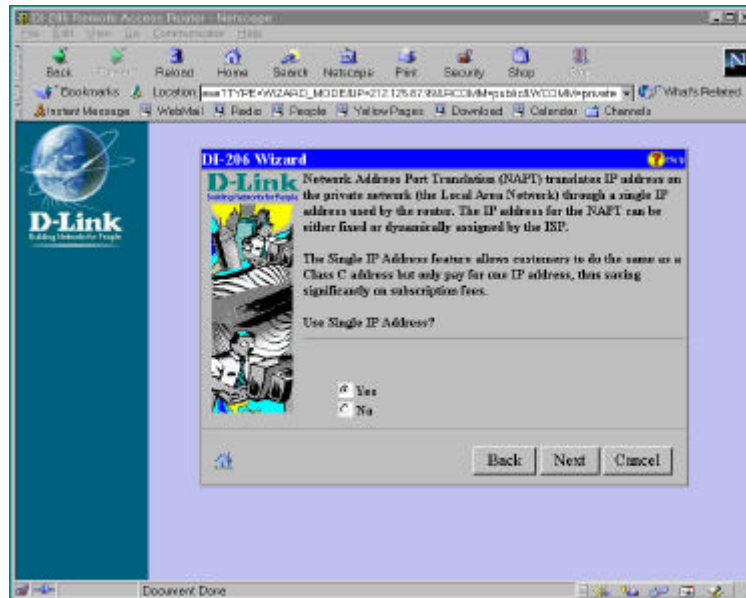
Select PAP or CHAP authentication



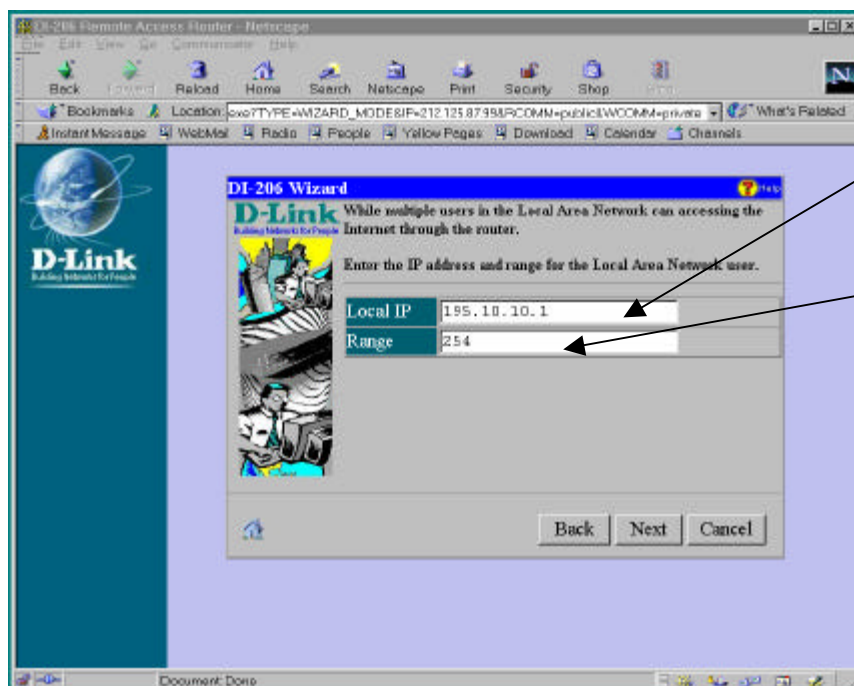
Select 'Internet Access' and continue by selecting 'Next'



Type your ISP login name, password and telephone number



As this configuration is for a dynamic IP address assigned by the ISP which you are intending on sharing among all users, select 'Yes' to the question 'Use single IP Address'. Click 'Next' and continue.



Set the local IP network address here. In this example the subnet is 255.255.255.0, therefore the network size has 254 hosts from .1 to .254

The final screen gives you the opportunity to review the setup, and if necessary to go back and make changes.

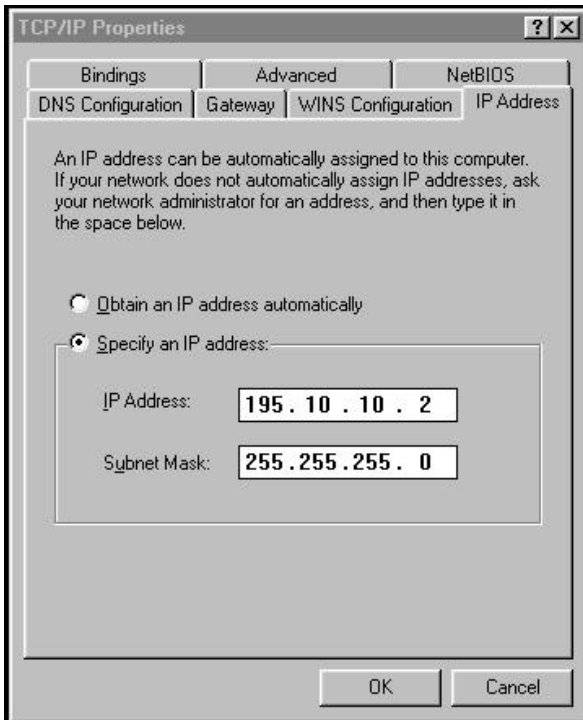


If you're happy with the settings click on 'Finish' and complete the installation.

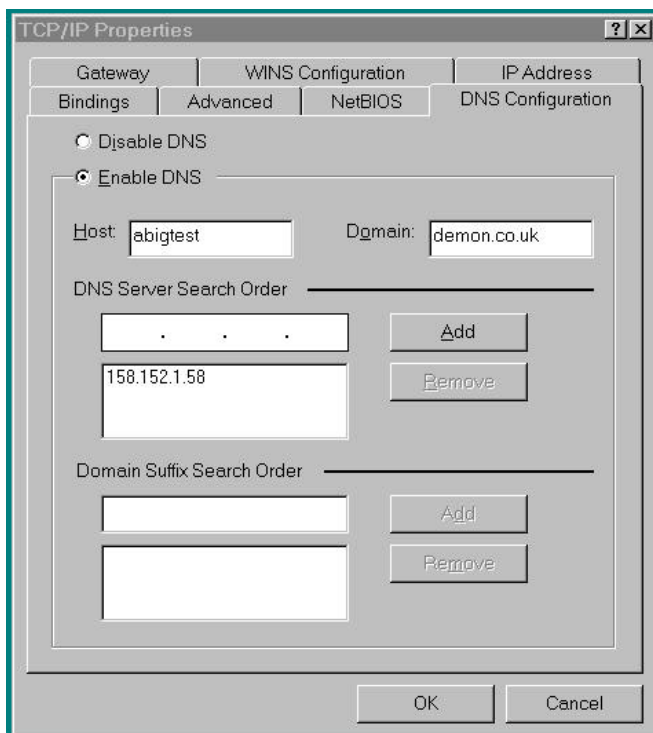


#### 4. *Windows 95/98 Configuration*

The configuration of windows 95/98 is done through the control panel. Edit the TCP/IP properties, not those bound to the dialup adapter if its installed, but those which are bound to the Ethernet adapter.

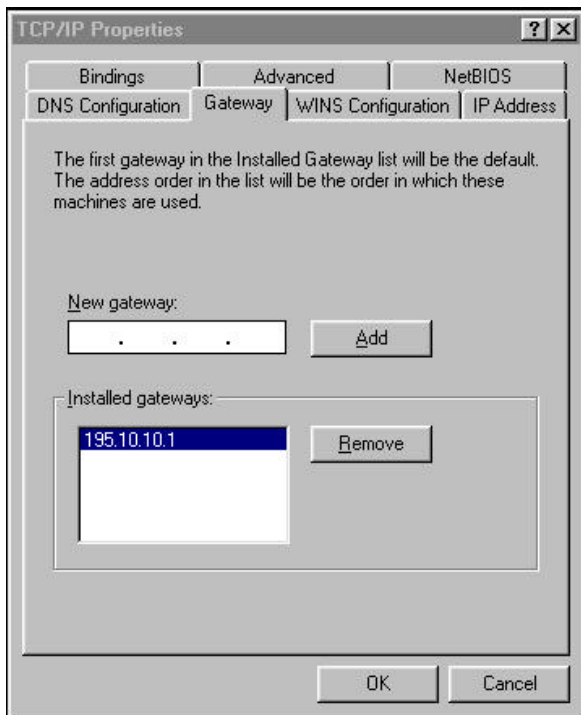


The IP address is our example 195.10.10.2 subnet mask of 255.255.255.0.



The DNS will need to be enabled and the various components need to be configured. The host name is a unique name for this computer. All of the computers in the network will have a unique name, the host name can be this name. The Domain is one of those required information provided by the ISP. For example if the ISP is demon, the Domain will be demon.co.uk. Check with the ISP if you do not have this information. Enter the DNS server IP address as shown, again provided by the ISP.





The Gateway is the IP address of the local router. In this example it is 195.10.10.1

Select the OK tab and allow windows 95/98 to load some files from the windows CD-ROM. Complete the TCPIP configuration by rebooting when asked to do so.

When Windows has finished rebooting, select the MSDOS prompt and type '**ping 195.10.10.1**' as shown below. If the reply is as indicated, then the TCPIP configuration is correct and working

```
C:\>ping 195.10.10.1
```

Pinging 195.10.10.1 with 32 bytes of data:

```
Reply from 195.10.10.1: bytes=32 time=1ms TTL=64
Reply from 195.10.10.1: bytes=32 time=1ms TTL=64
Reply from 195.10.10.1: bytes=32 time=1ms TTL=64
Reply from 195.10.10.1: bytes=32 time<10ms TTL=64
```

Ping statistics for 195.10.10.1:

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

## 5. Manual Configuration of the Router

For manual configuration, you will need to be attached to the router through the serial console port. The serial cable is supplied with the router and has 9-pin male and 9-pin female connectors. You will need to set your communication software to connect at 9600,n, 8,1,p. To login, use the default username and password of 'Admin' and 'Admin'.

Once connected you will see the Main Menu as below. Again, it would be prudent to start router configuration from factory default settings, to do this go to – Main Menu – System Maintenance – Factory Reset -

```

Main Menu
*****
System Information...
Interface Configuration...
Network Configuration...
SNMP Agent Configuration...
Advanced Functions...
Admin Configuration...
System Maintenance...
    
```

### ISDN Configuration

For this setup go to the  
 - Main Menu – Interface Configuration – ISDN -

```

ISDN
*****
Description [ ]
Switch Type DSS-1
B1 Channel Usage <Switch>
Country ID [9]
ISDN Data [01813813010]
A/B Adapter 1 [ ]
A/B Adapter 2 [ ]
Phone 1 Call Waiting <Disable>
Phone 2 Call Waiting <Disable>
POTS Lines <Enable >
Global Reception <Disable>
Block Outgoing CLID <Disable>
Auth Type <AUTH_PAP >
Call Bumping <Disable>
State <Enable >
    
```

### Country Code Table

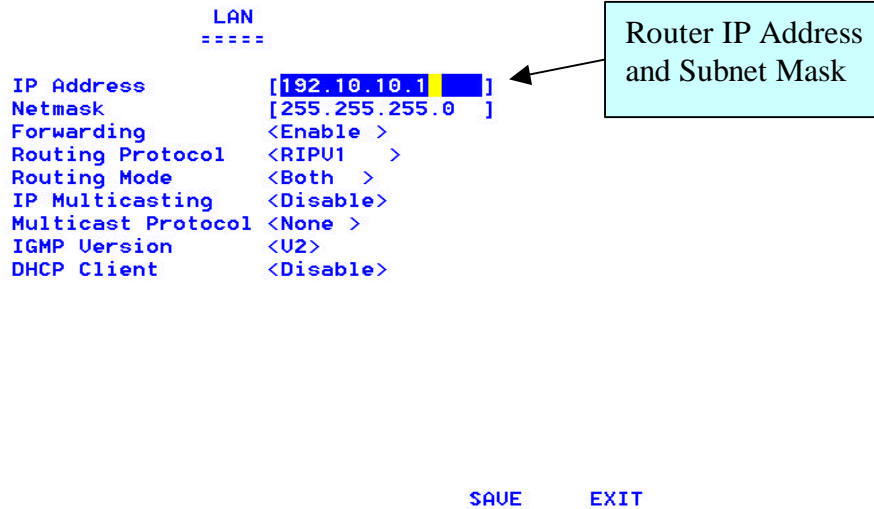
0 : INTERNATIONAL	02 : GERMANY	03 : SWEDEN	04 : FRANCE	05 : SWITZERLAND	06 : HOLLAND
01 : TAIWAN	08 : Denmark	09 : UK	10 : Australia	11 : Norway	12 : Italy
07 : Finland	15 : Singapore	16 : Malaysia	17 : Spain	18 : Portugal	19 : Israel
14 : Mainland China	21 : Czech	22 : Hungary	23 : Slovenia	24 : Estonia	25 : Slovakia
20 : Poland	27 : Korea	29 : Philippine	30 : Thailand	31 : Turkey	32 : Greece
26 : New Zealand	34 : Austria	35 : Bangladesh	36 : Belgium	37 : Brazil	38 : Bulgaria
33 : Argentina	40 : Chile	41 : Colombia	42 : Egypt	43 : Hong Kong	44 : India
39 : Canada	46 : Iran	47 : Iraq	48 : Ireland	49 : Mexico	50 : Peru
45 : Indonesia	52 : Romania	33 : Russia	54 : Saudi Arabia	55 : South Africa	57 : Ukraine
51 : Portugal					
58 : Sri Lanka					

## IP Address Assigning

- Main Menu – Network Configuration – IP Configuration – IP Stack Configuration – LAN -

```
LAN
====
IP Address      [192.10.10.1 ]
Netmask        [255.255.255.0 ]
Forwarding     <Enable >
Routing Protocol <RIPU1 >
Routing Mode   <Both >
IP Multicasting <Disable>
Multicast Protocol <None >
IGMP Version   <U2>
DHCP Client    <Disable>

SAVE   EXIT
```

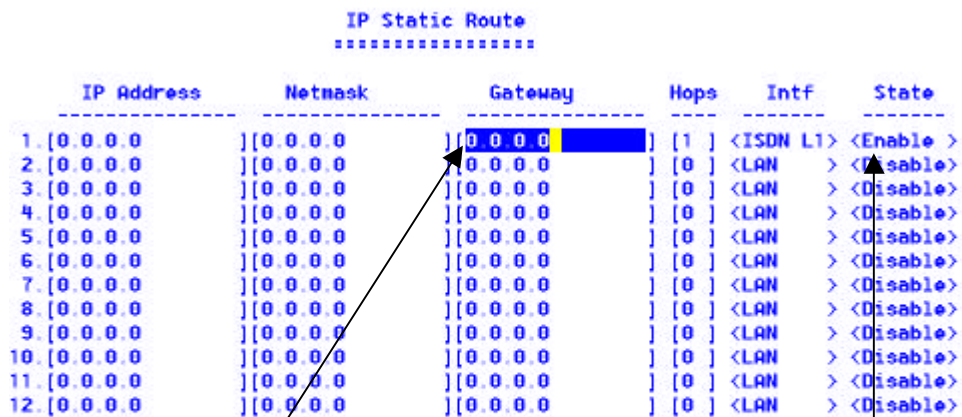


A callout box with a light blue background and black border contains the text "Router IP Address and Subnet Mask". An arrow points from this box to the IP Address and Netmask fields in the configuration menu.

## Setting up a Route to the ISP

- Main Menu – Network Configuration – IP Configuration – IP Static Route -

```
IP Static Route
*****
IP Address      Netmask      Gateway      Hops  Intf  State
-----
1. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [1] <ISDN L1> <Enable >
2. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
3. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
4. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
5. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
6. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
7. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
8. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
9. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
10. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
11. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
12. [0.0.0.0] ][0.0.0.0] ][0.0.0.0] [0] <LAN > <Disable>
```



Two callout boxes with light blue backgrounds and black borders are present. The first box, on the left, has an arrow pointing to the Gateway field of the first row in the table. The second box, on the right, has an arrow pointing to the State field of the first row in the table.

If your ISP assigns you a static IP address, enter the IP address here, otherwise leave the entire line as shown.

Remember to 'Enable' the configuration

## Remote Network (ISP) Configuration

- Main Menu - Advanced Functions – Remote Access Configuration – Remote Network Profile –

Select the first available free profile.

```
Remote Name [d-linkuk]
Direction <Out >
Interface <ISDN L1>

Incoming :
  Name [
  Password [
  Rem CLID [

Outgoing :
  Name [d-linkuk
  Password [
  Phone Number [08450798667

Remote IP Address [0.0.0.0
IP Address Supply <None >
State <Enable >
```

Profile Name

Dial out only

ISP Login name, password and ISDN number

SAVE EXIT

## Dial-on Demand and Idle Timer Settings

- Main Menu – Advanced Functions – Remote Access Configuration – Dial Configuration – ISDN Link1 -

```
Idle Time [120 ]
Dial-Out Retry Time [60 ]
Dial-Out Retry Count [3 ]
Dial on Demand <Enable >
Set Peer IP as Default Gateway <Disable>
```

SAVE EXIT

Set the idle time to be suitable with your Internet access requirements. Ensure the Dial on Demand setting is 'Enabled'.

## NAT Configuration

- Main Menu – Advanced Functions – NAT Configuration – Configure NAT/NAPT -

Select the first available free NAT profile and configure as shown below.

```
Name [d-linkuk ]
Global Interface <ISDN L1>
Local Interface <LAN  >
Translation Mode <Dynamic NAPT>
State <Enable >

SAVE   EXIT
```

### NAT IP Pool Setting

- Main Menu – Advanced Function – NAT Configuration – Configure NAT/NAPT

```
Configure NAT/NAPT
=====
1. D-linkuk  NAT IP Pool      9.          NAT IP Pool
2.          NAT IP Pool     10.         NAT IP Pool
3.          NAT IP Pool     11.         NAT IP Pool
4.          NAT IP Pool     12.         NAT IP Pool
5.          NAT IP Pool     13.         NAT IP Pool
6.          NAT IP Pool     14.         NAT IP Pool
7.          NAT IP Pool     15.         NAT IP Pool
8.          NAT IP Pool     16.         NAT IP Pool
```

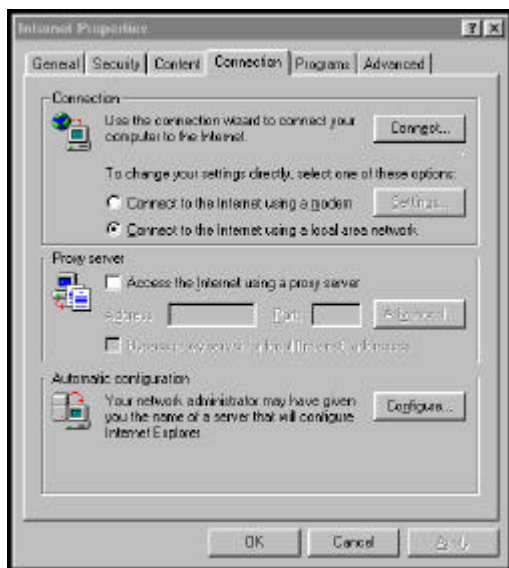
Cursor to the NAT IP Pool and press enter.

```
Dynamic NAPT
=====
Global IP      Local IP      Range      State
-----
1. 0.0.0.0     [195.10.10.1 ] [254 ] <Enable >
2. 0.0.0.0     [0.0.0.0     ] [0   ] <Disable>
3. 0.0.0.0     [0.0.0.0     ] [0   ] <Disable>
4. 0.0.0.0     [0.0.0.0     ] [0   ] <Disable>
5. 0.0.0.0     [0.0.0.0     ] [0   ] <Disable>
```

Set the local IP address as the IP address of this router and the range.

## 6. *Internet Browser Settings*

The Internet browser will need to be configured to connect using the LAN rather than using the dialup adapter. The setting below is from Microsoft IE4. Another browser will have a similar setting, which can be changed to connect using LAN (local area network)



You have now completed the configuration. Launch your Internet browser and see if a connection to the required web site is established. The router will dial automatically when the browser is launched.

### *FAQ's*

Q1. I am unable to connect to the router through the RS232 port?

Ans Check the com port you are using (COM1, COM2) and set the parameters to 9600,n,8,1

Q2. I am unable to ping the router from my Windows 95/98 workstation.?

Ans Check the TCPIP configuration of the workstation, ping the workstation IP address. If the workstation ping is successful, check the IP address of the router.

Q3. When I launch the browser, the router does not dial the ISP.

Ans Check the default gateway setting in the workstation, ensure it is the IP address of the router

Q4. I want to connect the router to my existing network, thus allowing more 6 users to access the internet?

Ans Using the uplink port on the router, connect it to your existing hub or switch. (10baseT only), please bear in mind the repeater count.

Q5. I want to dial my ISP using both the 'B' channels to get a 128Mbps link.?

Ans. If your ISP supports having this type of connection, then follow the install guide for setting up Bandwidth on Demand starting on page 15.

## **Bandwidth on Demand (BOD)**

This feature will allow both your ISDN B channels to connect to the ISP, thus giving a total bandwidth of 128Mbps. Some ISP's will not allow nor support this, as it requires them have sufficient service available for all there users. Also taken in to account is the additional costs of connecting with both lines, your telecom company may charge for using both channels separately.

To setup the second channel to dial the ISP, do the following step.

### **1. Remote Network (ISP) Configuration** (on page 12).

Main Menu - Advanced Functions – Remote Access Configuration – Remote Network Profile –

Where the interface should be changed from ISDN L1 to ISDN L2

### **2. Setting up a Route to the ISP**

Main Menu – Network Configuration – IP Configuration – IP Static Route -

Configure a second profile and change interface to ISDN L2.

### **3. Dial-on Demand and Idle Timer Settings**

Main Menu – Advanced Functions – Remote Access Configuration – Dial Configuration – ISDN Link2

### **4. NAT Configuration**

Main Menu – Advanced Functions – NAT Configuration – Configure NAT/NAPT

Use ISDN Interface L2

#### **NAT IP Pool Setting**

Main Menu – Advanced Function – NAT Configuration – Configure NAT/NATP

Select profile number 2, or another free unused profile.

### **5. BOD Setting Tab**

Main Menu – Advanced Functions – PPP Configuration – Multi-Link PPP Configuration –

Enable BOD, and set the BOD criteria parameters.

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