

Chapter 7: Accessing the Internet

The Internet has revolutionised information usage and dissemination. It has made the global village a reality whereby almost anyone any where in the world is reachable if the person has an Internet connection. The most common way to get Internet connectivity is by using the PC, be it at home, in the place of work, the community hall or even a cybercafe.

In this chapter we shall examine some of the more common methods in which a PC can gain access to the Internet.

THE INTERNET SERVICE PROVIDER (ISP)

For a personal or home user, before you can access the Internet you will need to sign up with an Internet Service Provider (ISP). The ISP usually has a network which is connected to the Internet by a permanent telecommunication link, i.e. one can view the ISP's network as part of the Internet. The ISP provides the necessary networking infrastructure to enable you to connect to its network. Thus once your PC successfully connects to the ISP's network, it can then access the resources and services provided by other computers on the Internet.

The Internet can be accessed from your system using a variety of methods, depending on the type of access methods supported by the ISP you sign up with and the type of networking devices you have installed in your system. Currently the most common methods of connectivity by a home or personal user to an ISP are:

- dial-up
- xDSL

DIAL-UP CONNECTIVITY

The simplest way to access the Internet is to use a dial-up telephone line connection. Almost all ISPs provide dial-up access connectivity to the Internet using the existing telephone line in the home or office. To do this you will need the availability of a telecommunication device called a "modem". Most modern PCs come with a built-in dial-up modem card or if it does not, you can purchase an external dial-up modem and use the serial port available on your PC for connection.

Before you can dial up to your ISP and access the Internet, you have to configure your system to recognise the modem and then dial the correct number to your ISP. You will need to have at hand the following information needed for the modem configuration:

- telephone number to dial to the ISP for the Internet access
- Internet access login name and password provided by the ISP

MODEM CONFIGURATION

To configure your modem for Internet access, start the "Internet Configuration Wizard" tool from the Main Menu:

Main Menu --> System Tools --> Internet Configuration Wizard

You will be prompted for the root password as this is an attempt to change the system settings and so only the system administrator is allowed to perform this. Enter the root password and the Internet configuration wizard main screen will be displayed.



Fig. Internet Configuration Wizard

1. Select modem connection. Click on the Forward button.
2. If your system cannot detect the modem you will be prompted to enter the modem device name and related communication information. You can choose as follows:

Modem device: /dev/modem
Baud rate: 115200
Flow control: Hardware (CRTSCTS)
Modem volume: Medium

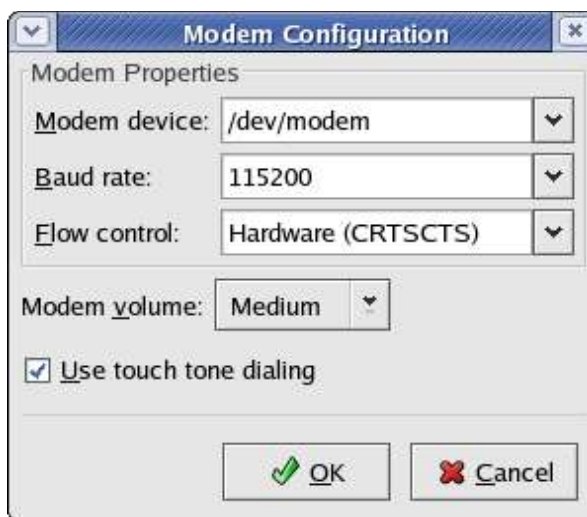


Fig. Select Modem Screen

Click on the Forward button.

3. Enter the phone number of the ISP (Internet Provider). If you need to use an area code and/or a dialling prefix to reach the ISP, you should enter them in the boxes provided, otherwise just enter the telephone number. Enter the name you want this connection to be known by, usually the name of the ISP is used (this is just a nickname provided by you so that you can recognise this connection). Enter the login name and the password in the boxes provided.



Fig. Filling in the ISP Provider Information

Click on the Forward button.

- For the IP Settings screen the default settings may be used if your ISP assigns IP addresses automatically (the default for most ISPs). Otherwise you will have to enable the "Statistically set IP addresses" button and enter your IP address and related information.



Fig. Filling in the IP Settings

Click on the Forward button.

- Click on Apply to accept and end the set up.
- The Network Configuration window will pop up; exit from it.

ACTIVATING THE MODEM

To test your modem and Internet connectivity, select the Network Device Control tool from the Main Menu:

Main Menu --> System Tools --> Network Device Control

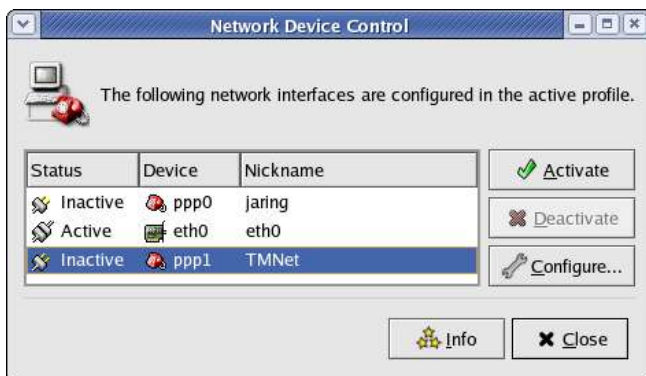


Fig. Activating the Modem

Select the profile you have set up (remember the ISP nickname you used in the set up above?) by clicking on it and then click on the "Activate" button. The modem will start to dial and connect to the ISP and after awhile upon successful login the status of the profile in the Network Devices Control screen will change to "Active" from "Inactive". You are now connected to the Internet. You can now perform the web browsing and other services discussed in the next few chapters.

To disconnect from the Internet bring up the Network Devices Control window and select the profile which was activated above and click on the "Deactivate" button. You will be disconnected from the Internet and the status of the profile will be changed to "Inactive".

EXERCISE

- Perform an Internet dial-up connection using the modem on the system
- Determine that you have Internet connectivity by accessing some well known websites
- Disconnect from the Internet

xDSL CONNECTIVITY

The dial-up Internet connection discussed above provides ready and easy access for places which have telephone infrastructure in place. However, it has the disadvantage that the maximum data transmission speed which normal dial-up technology can provide is about 56 Kbits per second. While this speed may be adequate for email text transmission and web browsing for non-multimedia intensive web content, it is not practical for multimedia access. For heavy multimedia content access using the Internet, a high speed link is required. For the personal or home user, broadband xDSL technologies make this possible.

xDSL is an acronym used for the family of DSL (Digital Subscriber Line) technologies which enable high speed data transmission through telephone lines. There are different types of DSL and they include, ADSL, SDSL, IDSL. Collectively these are known as xDSL. ADSL (Asynchronous Digital Subscriber Line) is commonly used for the home.

xDSL CONFIGURATION

There are two main types of xDSL configuration in use and most ISPs use either one of these:

- DHCP over Ethernet
- PPoE over Ethernet

Usually if you given a login id and password for your broadband xDSL connection then you should be using the PPoE configuration.

DHCP over Ethernet

For this configuration, what is needed is just to obtain the IP configuration parameters using DHCP (Dynamic Host Configuration Protocol). To set up your xDSL customer premises equipment to perform this, the "Internet Configuration Wizard" tool from the Main Menu may be used:

Main Menu --> System Tools --> Internet Configuration Wizard

You will be prompted for the root password as this is an attempt to change the system settings and so only the system administrator is allowed to perform this. Enter the root password and the Internet configuration wizard main screen will be displayed as described in the section on dial-up modem configuration.

- Select Ethernet connection in the select device type screen and click on the Forward button. A screen showing the detected Ethernet card(s) on your system is displayed.

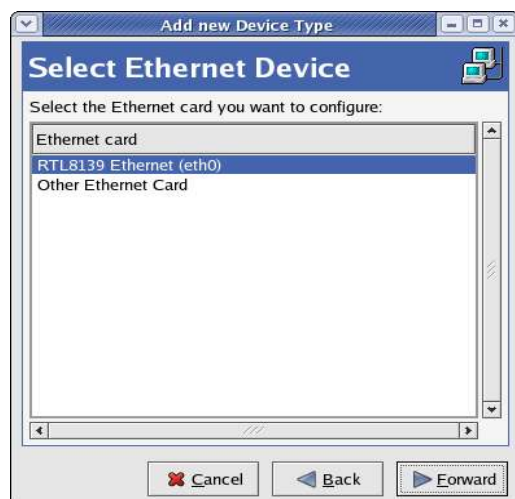


Fig. Select Ethernet Device Screen

2. Select the correct Ethernet device. (This is usually named *eth0* if you have only one Ethernet card installed on the system.) Click on the Forward button.
3. In the Configure Network Settings screen., click the button marked "Automatically obtain IP address settings with:" and ensure that "dhcp" is selected from the pull-down selection. Also check the box "Automatically obtain DNS information from provider". Click on the Forward button.

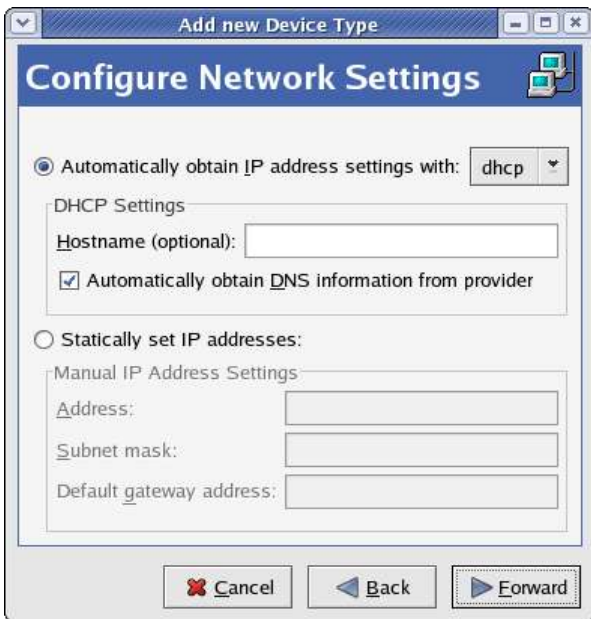


Fig. Configure Network Settings Screen

4. A summary of the configuration just entered is displayed. If something is incorrect, click on the Back button to go back and make the changes otherwise click on Apply to accept and end the set up.
5. The Network Configuration window will pop up; exit from it.

PPoE OVER ETHERNET

For PPoE over Ethernet, start up the Internet Connection Wizard as described in the previous section and select xDSL

1. Select xDSL connection in the select device type screen and click on the Forward button. A screen showing the DSL configuration will be displayed.



Fig. Configure DSL Connection

2. The Ethernet device type will have been selected automatically (this is usually *eth0* unless you have more than one Ethernet card) and entered in the box for you. If this is incorrect select the correct Ethernet device in the pull-down selection. Enter the ISP provider name and the login name and password provided to you by the ISP. Click on the Forward button.
3. A summary of the configuration just entered is displayed. If something is incorrect, click on the Back button to go back and make the changes otherwise click on Apply to accept and end the set up.
4. The Network Configuration window will pop up; exit from it.

ACTIVATING THE xDSL LINK

To test your xDSL link and Internet connectivity, select the Network Device Control tool from the Main Menu:

Main Menu --> System Tools --> Network Device Control

If you are using DHCP over Ethernet, select the Ethernet device name (usually this is *eth0*) you have used in the configuration set up by clicking on it and then click on the "Activate" button.

If you are using PPoE over Ethernet, select the ISP name you used in the configuration set up by clicking on it and then click on the "Activate" button.

The link will be established after a few seconds and the status of the profile in the Network Devices Control screen will change to "Active" from "Inactive". You are now connected to the Internet.

To disconnect from the Internet bring up the Network Devices Control window. For a DHCP over Ethernet setup select the Ethernet device which was activated above and click on the "Deactivate" button. For a PPoE over Ethernet setup select the ISP name which was activated above and click on the "Deactivate" button. You will be disconnected from the Internet and the status of the profile will be changed to "Inactive".

EXERCISES

Perform the same Internet connectivity tests as done previously with the dial-up modem connection