

Programming From Home with Microsoft Windows

If you have an Internet connection at home you can use the school computer system for your programming tasks. If you have a suitable C compiler at home you can transfer your programming assignments to and from the school via the Internet and use that compiler. Otherwise, you'll have to connect to the school network and use the **gcc** command as usual.

You will need to download either a telnet client or an ssh client from the Internet. Both client programs will allow you to connect to the school intranet via the Internet; however, the first program (telnet) communicates *en clair* so that anyone eavesdropping on the network can theoretically snoop both your username and password. The second uses automatic encryption to create a secure shell (ssh) connection.

If you just want a telnet client you can use the inbuilt telnet client. Click on **Start/Run** and type **telnet** into the command box before clicking on OK. Depending on which version of Microsoft Windows you've got, the quality of the client will vary. Therefore you are advised to download a better version from the Internet.

For telnet the Dtelnet program is preferred. You can search for it using google.ie by clicking on the link:

<http://www.google.ie/search?hl=en&q=dtelnet+download&btnG=Google+Search&meta=>

You can also get it directly at:

<http://dtelnet.sourceforge.net/>

If you wish to use ssh the program PuTTY is preferred. You can search for it using google.ie by clicking on the link:

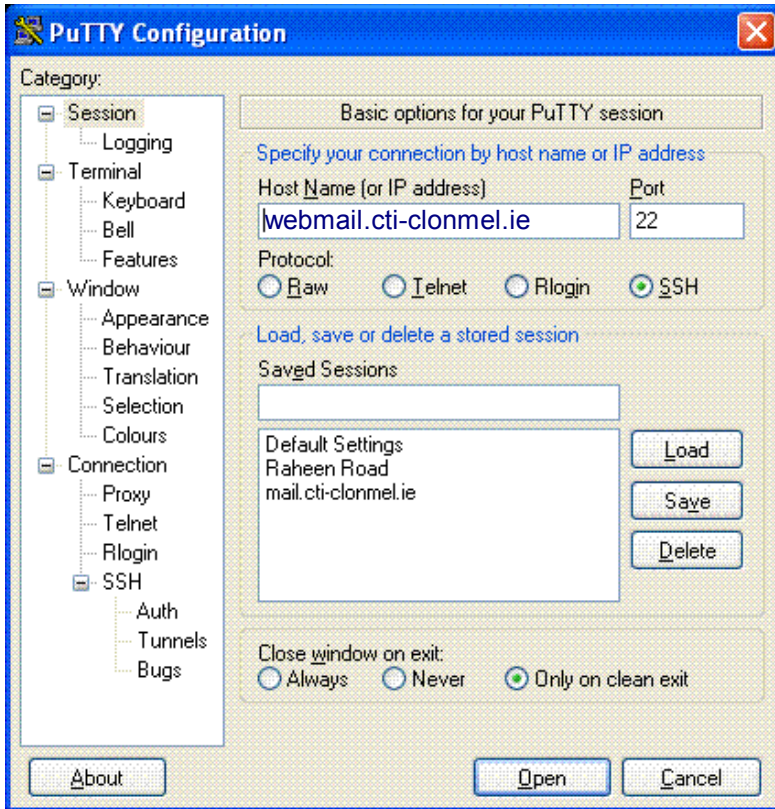
<http://www.google.ie/search?hl=en&q=putty+download&btnG=Google+Search&meta=>

You can also get it directly at:

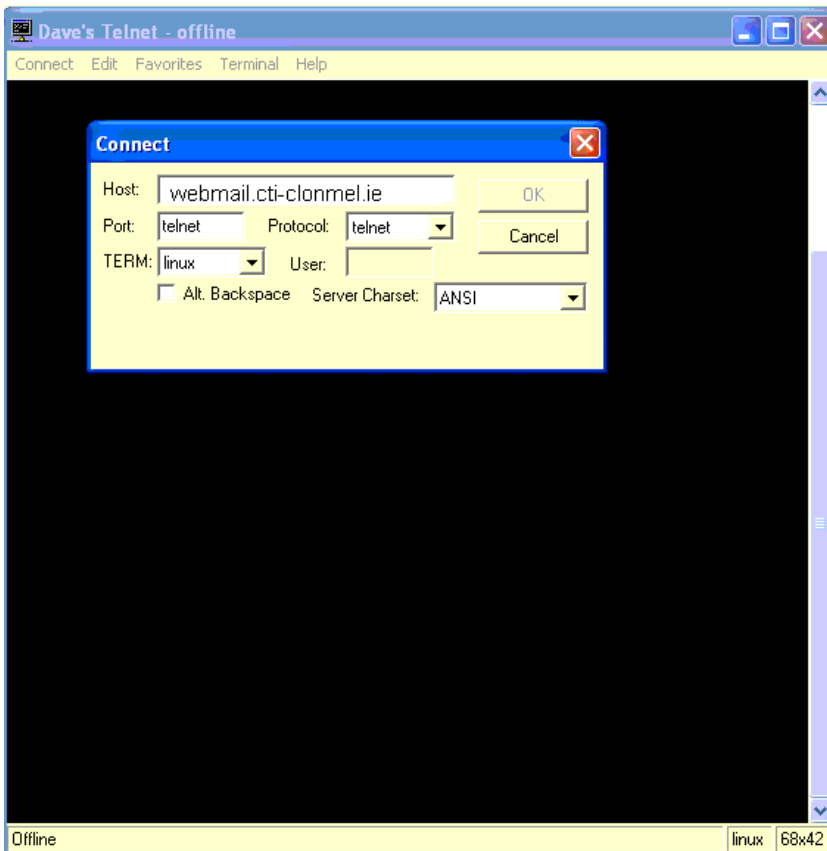
<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

Whichever you choose, download it, install it and run it. Depending on the program and where you installed it, you may have an icon on your start menu or desktop; you may be able to use **Start/Run** and then type either **dtelnet** or **putty** (case insensitive) and click on OK; otherwise, use the explorer to navigate to the folder where you installed the program and double click on the program icon.

Whichever you choose, the host to connect to is **webmail.cti-clonmel.ie** using port 23 for telnet or port 22 for ssh. Use the program to make this connection once you are connected to the Internet. You will be asked to accept a security cert with ssh – accept it. Either program, after connecting to the server, will prompt you with a simple login prompt. At this point give your username and then your password.



On the left is the PuTTY screen. Note that there is an option to use this program for simple telnet as well as **Secure Shell** sessions.



On the left is the DTelnet screen

Once logged in you should be in your home directory, but using the Command Line Interface (CLI). If you want to be sure that you have connected to the correct computer use the **hostname** command and the host (computer) name should end with **cti-clonmel.ie**. To be sure you are in your own folder use the **pwd** (Print Working Directory) command.

Once you are satisfied that you are in the correct location you can enter the **cprogs** folder as before using the **cd cprogs** command. (This assumes you have used the name **cprogs** for your C programs as directed at the start of the year.

For any other UNIX commands refer to the document 'A brief summary of UNIX commands'.

To edit your files when using Red Hat Linux you used the command **kwrite**. This was available to you as you were working using a Graphical User Interface (GUI). Since you are using the CLI you must use the **vi** command instead. Refer to the separate document on 'Using vi with Linux'.

To edit your program file (if it was called **prog1.c**) you would type **vi prog1.c** to start editing. Once your program appears on screen press **i** *immediately* on entry to the editor. The **i** key changes you to **insert** mode. You can then edit your program file.

When finished editing press the **ESC** key followed by **:** (colon) to enter command mode. You will then want to **w**rite your file to disk and the **q**uit. Therefore press **wq** to write and quit.

You can then compile your program (if it was called **prog1.c**) using the command: **gcc prog1.c**

As there will likely be errors in your file initially, make a note of the line in which the first error is reported. Start the **vi** editor again as shown above (remember to put in the filename – *without any spaces!*). Enter **insert** mode *immediately* and then count down to that line to make corrections.

When complete use the **ESC:wq** sequence to write and quit. Compile again.

When finally your program compiles without errors use the command **./a.out** to run the program and to test that it does as required. If it doesn't go back and continue editing.

When you are finished using the CLI you should disconnect from the server. First exit your session using the **exit** command. You can then close your Windows client using the close button on the program as required.