

## Remote Display: NMR Data Processing on a Windows-Based PC

1. Obtain and install the program **X-Win32**. This program can be purchased from Computer and Network Services (CNS, General Services Building room 302) for \$40 (license: \$30; media fee: \$10).
2. Obtain and install the program **Putty**. Putty is a free telnet/secure shell (SSH) program that is needed to connect to the NMR data station. Putty can be downloaded from CNS: <http://www.ualberta.ca/AICT/SOFTWARE/netsurf2004.html> or directly from the Putty homepage: <http://www.chiark.greenend.org.uk/~sgtatham/putty/>
3. Configure Putty to connect to the d601 NMR data station (unless you are instructed to use a different data station).

Start Putty from the Windows Start Menu; a configuration screen will appear similar to the one shown in Fig. 1.

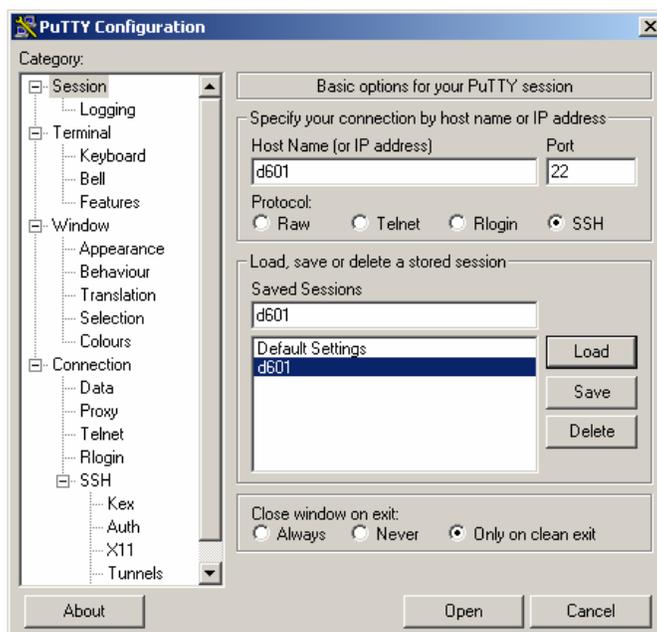


Fig. 1. The Putty configuration window.

In the field labeled *Host Name (or IP address)* enter d601 (the data station name is all that is needed) and then select the SSH protocol (\*). The field labeled *Port* will be configured automatically by Putty after the protocol has been selected.

In the *Saved Sessions* field, give the session a meaningful name, for example d601, and then click on the save button to save the session.

(\*) Note that only SSH sessions are allowed to connect to NMR data stations.

- To connect to d601, start Putty from the Windows Start Menu if you have not done so already. In the Putty configuration window, click on the session that was just created (d601), then click on the load button, and then click on the open button. The remote session can also be started by double clicking the desired *Saved Session*. A new window will appear, the Putty Terminal window, similar to Fig.2.



Fig. 2. The Putty terminal window.

Enter your login and password as shown above. The *gennmr* account is used as an example.

When asked: **Choose s)un x)window t)ek d)umb g)raphon [s/x/t/d/g(default)]:**

answer **x** as shown in Fig.2.

When prompted: **input display server name:**

input your computer's **IP address (i.e. 129.128.XX.YY) or name instead of *my-pc* as shown in Fig. 2. Information on how to find the IP address of your windows-based PC can be found at the end of this document .**

- Once connected to the NMR data station, start X-Win32 from the Start Menu on the Windows-based PC.
- In the Putty Terminal window, on the command line identified by *d601(gennmr) 1>* in Fig. 2, type: **vn**

and press the return key to start VNMR. X-Win32 may question you if you want to allow a connection from the NMR data station to your computer. Accept this connection and VNMR will appear on your desktop (Fig. 3).

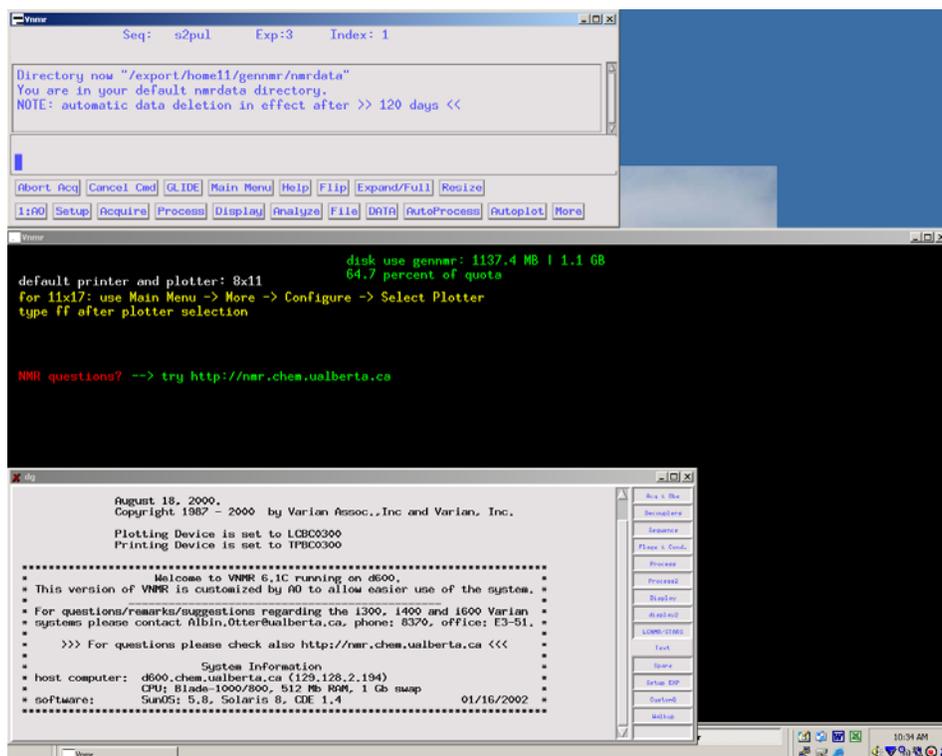


Fig. 3. VNMR on a Windows desktop.

VNMR will look and perform as though you were using it directly on a NMR data station.

- When finished, **exit VNMR**, then type **logout** on the command line in the Putty Terminal window, and then close X-Win32 by right clicking the X-Win32 icon in the Windows systray (the blue X in the bottom right corner of Fig. 3) and select close.

### Notes:

#### Mice

VNMR and Sun computers make use of three button mice for processing and viewing NMR data. Such mice are generally not present on Windows-based PC's. However, a mouse with a scroll wheel can be used as a three-button mouse in X-Win32. Depressing the scroll wheel will emulate the middle mouse button of a three-button mouse.

A two-button mouse can also be used as a pseudo three-button mouse. Simultaneously pressing the left and right mouse buttons is equivalent to pressing the middle mouse button of a three-button mouse.

**If you intend to do remote NMR processing regularly, you may find it useful to buy a three-button mouse.**

### *Plotting and Printing*

Note that the printer beside the NMR data station will perform all plotting and printing tasks! When remotely connected to d601 using Putty/X-Win32, all plot commands issued in VNMR will be sent to the printer attached to d601 in SB-3G. **If you wish to plot your spectra in your lab additional steps are needed** to configure your printer (see VNMR news 2004-02).

### *Finding the IP Address of Your Windows based PC*

#### Windows 2000/XP

Go to Start → Run and enter **command** and press the return key. The Windows Command Prompt window will appear. In the Windows Command Prompt window enter the command:

**ipconfig** and press the return key.

The IP address for the computer that you are using will be displayed in the Windows Command Prompt window. Record the computer's IP address and close the Command Prompt window by typing **exit** and press the return key.

If you have any further questions, please contact the  
NMR support group for more information.