

NUCLEAR MAGNETIC RESONANCE RESEARCH RESOURCE

Using Windows FTP to Obtain Your NMR Data

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The NMR³ facility has setup a central workstation in Room 430 that serves to store (temporarily) NMR data from the facility's high-resolution NMR spectrometers. When an NMR experiment completes, the spectrometer software automatically saves the data on the local hard drive and subsequently automatically archives the data to this workstation. Consequently, researchers can retrieve their data directly from this computer using usb/thumb drives at their convenience (shortcuts to the relevant data folders are available on the desktop). Note that the use of thumb drives for data retrieval directly from the spectrometer workstations is **NOT permitted** under any circumstance.

An ftp (File Transfer Protocol) server is also setup on this workstation in Room 430. This means that researchers with ftp client software and knowledge of the server login details can download their NMR data to a remote computer system for work-up and analysis. The purpose of this document is to provide an overview of how to use the built-in Windows ftp client to obtain NMR data from the NMR³ ftp server. The server address and login specifications are not provided here; these are made available during facility spectrometer training sessions. Although the figures in this document are taken from a Windows XP installation, note that the procedures are similar on Vista and Windows 7 computers.

Windows FTP Overview

On Windows XP, Vista and 7 systems, a built-in utility [ftp.exe](#) is available within the "windows\system32" folder. The program can be executed as a basic command line utility via the Windows "Run..." interface. Fortunately, there are other implementations within Windows that are significantly more user-friendly, allowing the user to list and manipulate remote files in an identical fashion to files on the local computer (i.e. copy and paste, drag and drop, etc). Essentially, the files on the ftp server appear as an extension of the local Windows computer system and can be "operated on" as such.

Before proceeding, you should confirm that this capability has been enabled on your system by going to the Control Panel and selecting "Internet Options". Go to the "Advanced" tab and within the "Browsing" section, make sure the option "Enable FTP folder view (outside of Internet Explorer)" is checked. Depending on this setting, the

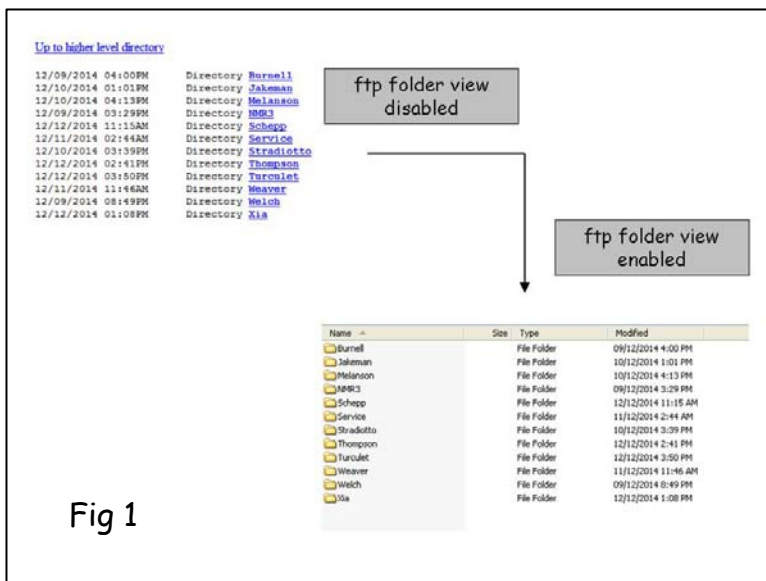


Fig 1

folders and files on the ftp server look very different, as shown in **Figure 1**. With folder view disabled, the folders and files appear as simple text-based links. This interface is sufficient for anonymous ftp access to individual files (simply right click on a file and choose "Save Target As...") but is far from adequate when the need is to copy entire folders (as for Bruker NMR data) from a server with login credentials (as for the NMR³ server). With folder view

enabled, you will be prompted for login credentials after which entire folders are easily copied in the exact same manner local folders are copied.

A second important configuration item within the "Browsing" section of the "Advanced" tab is "Use Passive FTP (for firewall and DSL modem compatibility)". Windows FTP users should ensure this item is checked before trying to connect to the NMR³ ftp server.

Procedure #1: Using Windows Explorer

Windows Explorer and the web browser Internet Explorer are tightly integrated such that the instructions for one essentially apply to the other. However, in what follows, Windows Explorer (designed for files rather than websites) will be utilized as the procedure is a bit simpler.

- (1) Open an explorer window by pressing and holding the Windows key and pressing E.
- (2) If an address bar is not available in explorer, select View → Toolbars and select Address Bar.
- (3) Type <ftp://xxx.xxx.xxx.xxx> in the address bar, where "xxx.xxx.xxx.xxx" is the ip address provided during your NMR training. Note that you must specify the "ftp://" in the address so that the correct port on the ftp server is accessed.
- (4) You will be prompted for the server login credentials which were provided during your training (see **Figure 2**). Enter the information and click "Log On".
- (5) Once logged in, you will see separate folders for the av300 and av500 archived data, as shown in **Figure 3**. Although it appears as if these folders exist on your computer, keep in mind you are looking at folders and files on a remote computer. Drill down to find the folder containing your experimental data.
- (6) Open the local folder where you want the NMR data to reside. Then use CTRL-C and CTRL-V (or drag and drop) to download the data from the server to your computer.

****Note**** you can easily create a desktop shortcut to an ftp folder. Right click on the desired ftp folder and while holding the right mouse button down, drag the folder to your desktop and select "Create Shortcut Here".

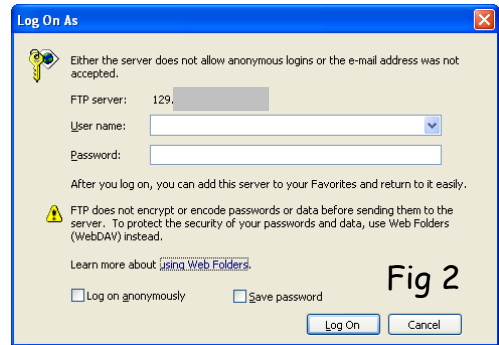


Fig 2

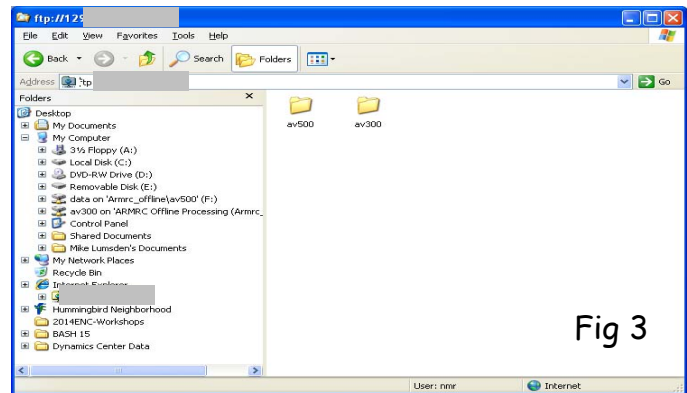


Fig 3

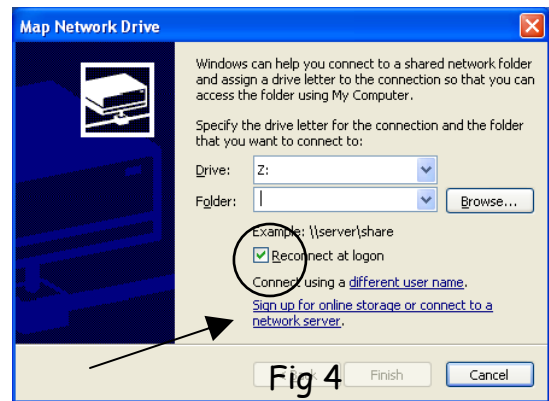


Fig 4

Procedure #2: Add a Network Location

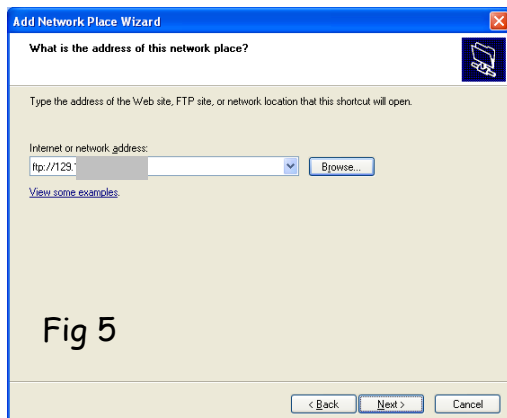


Fig 5

An alternative and perhaps more convenient approach within Windows is to add the ftp server as a network location.

- (1) Open My Computer and under Tools select "Map Network Drive...".
- (2) A "Map Network Drive" dialogue box very similar to that shown in **Figure 4** opens. Make sure the "Reconnect at logon" is checked and then click on "Sign up for online storage or connect to a network server."
- (3) This launches the welcome screen for the "Add Network Place Wizard". To continue, click Next.
- (4) A window will appear where you will select "Choose another network location". This will allow you to specify the address of the ftp server. To continue, click Next.

- (5) In the dialogue box shown in **Figure 5**, specify the address of the ftp server. Type <ftp://xxx.xxx.xxx.xxx> in the internet or network address field, where "xxx.xxx.xxx.xxx" is the ip address provided during your NMR training. To continue, click Next.
- (6) In the User Name and Password dialogue box (see **Figure 6**), uncheck the "Log on anonymously" check box and in the "User name:" field, enter the username you were provided during your training. To continue, click Next.
- (7) You will be prompted to provide a name for this network place with the default name being the ip address. If you want, specify a suitable name such as "NMR3 FTP Server". To proceed, click Next.
- (8) A window will open (hopefully) stating that you have successfully created your new network place. Click on Finish to complete the wizard.

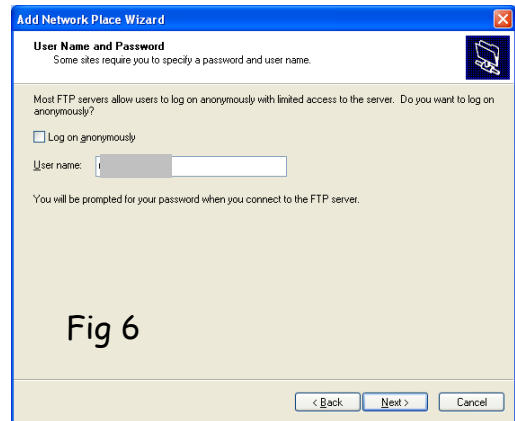


Fig 6

After completing these steps, you can easily access the server via "My Network Places". You may wish to place a shortcut on your desktop or in the Start menu for this purpose. Alternatively, "My Network Places" is available in the Folders section of Windows Explorer, as shown in **Figure 7**.

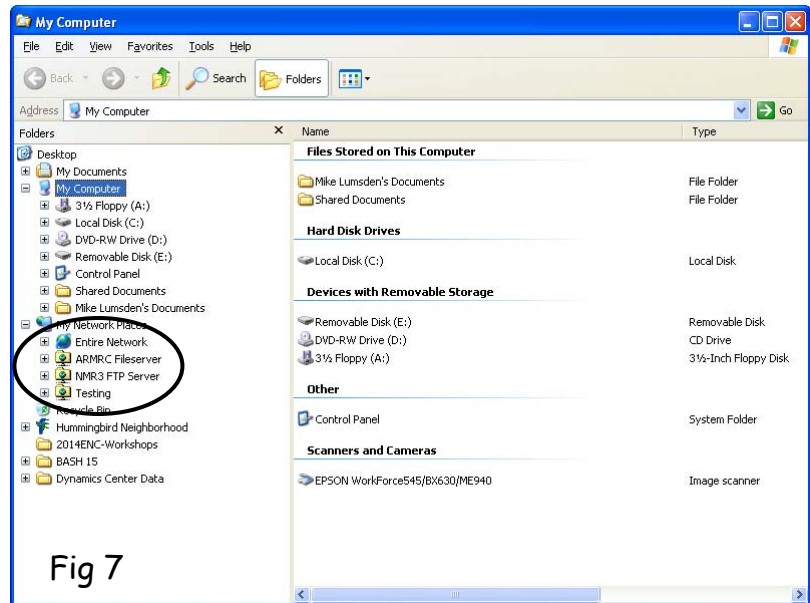


Fig 7