

A Few Useful UNIX Commands

If you are familiar with DOS (disk operating system used on PC's) you will find UNIX very familiar. The main difference is that each UNIX file has an owner and a group that it belongs to, as well as a set of **permissions** which determine who is allowed to read, alter or delete, or execute the file. These permissions are set up for the owner, the group, and the world and are listed in that order. For example, a file with permissions `rw-r-xr--` can be read, overwritten and executed (as a program) by the owner (first 3 characters `rw`), read and executed by any member of the group (next 3 characters `r-x`), and read by the world (final 3 characters `r--`). An attempt to delete this file by anyone but the owner will give the error message "permission denied".

pwd show current directory and path

e.g. `/export/home/hruby/jones/diester_1h.fid` would indicate the following path:

root (top) directory = /

I. **export** (directory)

A. **home** (directory)

1. mcgrath (directory)

2. walker (directory)

3. **hruby** (directory)

a. smith (directory)

b. ying (directory)

c. **jones** (directory)

i. crude_13c.fid (directory)

ii. crude_1h.fid (directory)

iii. **diester_1h.fid** (directory)

a) **fid** (file)

b) **text** (file)

c) **procpa**r (file)

d) **log** (file)

The contents of the directory (four files) are also shown.

Note: Unix uses the forward slash (/) where DOS uses the back slash (\)

ls list contents of directory (equivalent of DOS **DIR**)

ls -l list contents of directory with detailed file information

e.g.: `rw-r--r-- 1 jones hruby 166 Jan 29 09:14 fid`
permissions # of files owner group size date and time filename
(bytes) created

cd change directory e.g. `cd /export/home/hruby/jones`

`cd diester_1h.fid` (selects directory "diester_1h.fid" below "jones")

cd .. (moves up one directory to "jones")
cd ../mcgrath (moves up to "hruby" and down to "mcgrath")

Note that **cd** must always be followed by a space. The double period (..) always refers to the "parent" directory - the directory directly above the current location.

cp copy a file (equivalent of DOS command **COPY**)
e.g. **cp jones/diester_1h.fid/fid /smith/diester_1h.fid/fid**
(source) (destination)

will copy the file "fid" from directory "jones/diester_1h.fid" to directory "smith/diester_1h.fid" if you are in /export/home/hruby. If the file name is the same in the new directory location, you can substitute a period for the destination filename. Pathnames are relative to the current directory in this example: the full path would be /export/home/hruby/jones/diester_1h.fid/fid for the source file.

mv move a file - moves the file to the new destination (which may include a new name) and removes it from the old location and name. The syntax is the same as for **cp**. This can be used either for renaming a file or for changing its directory location, or both.

rm remove (delete) a file; e.g. **rm /export/home/hruby/smith/diester_1h.fid/fid**

mkdir make a new directory - creates a new directory just below the current directory
e.g. **mkdir data** creates the new directory "data" beneath your current location

rmdir remove a directory - removes a directory located just below the current directory. Note that the directory must be empty (contain no files or directories) before it can be removed.

Using ftp (file transfer protocol) to copy files from one computer to another over the network:

Ftp can be used on either DOS or UNIX machines (There is a Windows-based ftp program which is based on point-and-click rather than keyboard commands). First enter the ftp command followed by the computer you want to communicate with: **ftp uanmr**

You will be prompted for a username (your login name on the other ("remote") computer) and a password. If these pass muster, you will get the ftp prompt: **ftp>**. If they fail, you will also get the ftp prompt but you will need to try again by entering **user**, or exit by entering **quit**.

Now you can use normal UNIX commands **ls**, **pwd**, **cd** to find the desired directory in the remote computer. You can also move around and list files in the local computer by prefacing the UNIX commands with an "l" for local: **lls**, **lcd**. Next set the data type by entering either **ascii** (for text files) or **bin** (for binary files such as NMR data files). To copy a file from the remote computer to your computer, enter **get <filename>**; to copy a file from the local computer to the remote computer enter **put <filename>**. If you want to copy a number of files using a wildcard (*), first enter **prompt** and then use **mget** or **mput** (m for "multiple") in place of **get** or **put**. To exit from ftp enter **quit**.