CLTC Project Information Sheet 5:
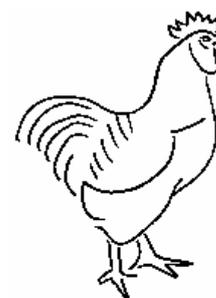
Using File Transfer Protocol (FTP) to Move Data

Developed by The 'Free Range' Community Linux Training Centre Project –
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Moving information from a server to your computer is routine – for example reading a web page, or down–loading your email. But sometimes you just want to move large chunks of data efficiently – without worrying about timing–out. You may also want to send data in the other direction – from your computer to the server. In both these cases File Transfer Protocol offers a simple means of moving data from A to B.

Files, directories and servers

You computer holds 'files'. Files are a logically organised block of data that has boundaries – a start and an end. The files are themselves organised into folders or 'direc–tories' – logically organised areas of files, usually centred on a particular use or theme. The files within the directo–ries of a computers hard disk can be read and moved around.

With graphical interfaces like KDE or Windows, you see the content of these directories and you can move files from one directory to another. Essentially, that's all FTP does – but it does it from your computer to a server via the Internet. From one set of directories on a hard disk to another via a telecommunications link.

Using gFTP

For a server to accept or provide files it requires an FTP server program running on it. On your computer you have
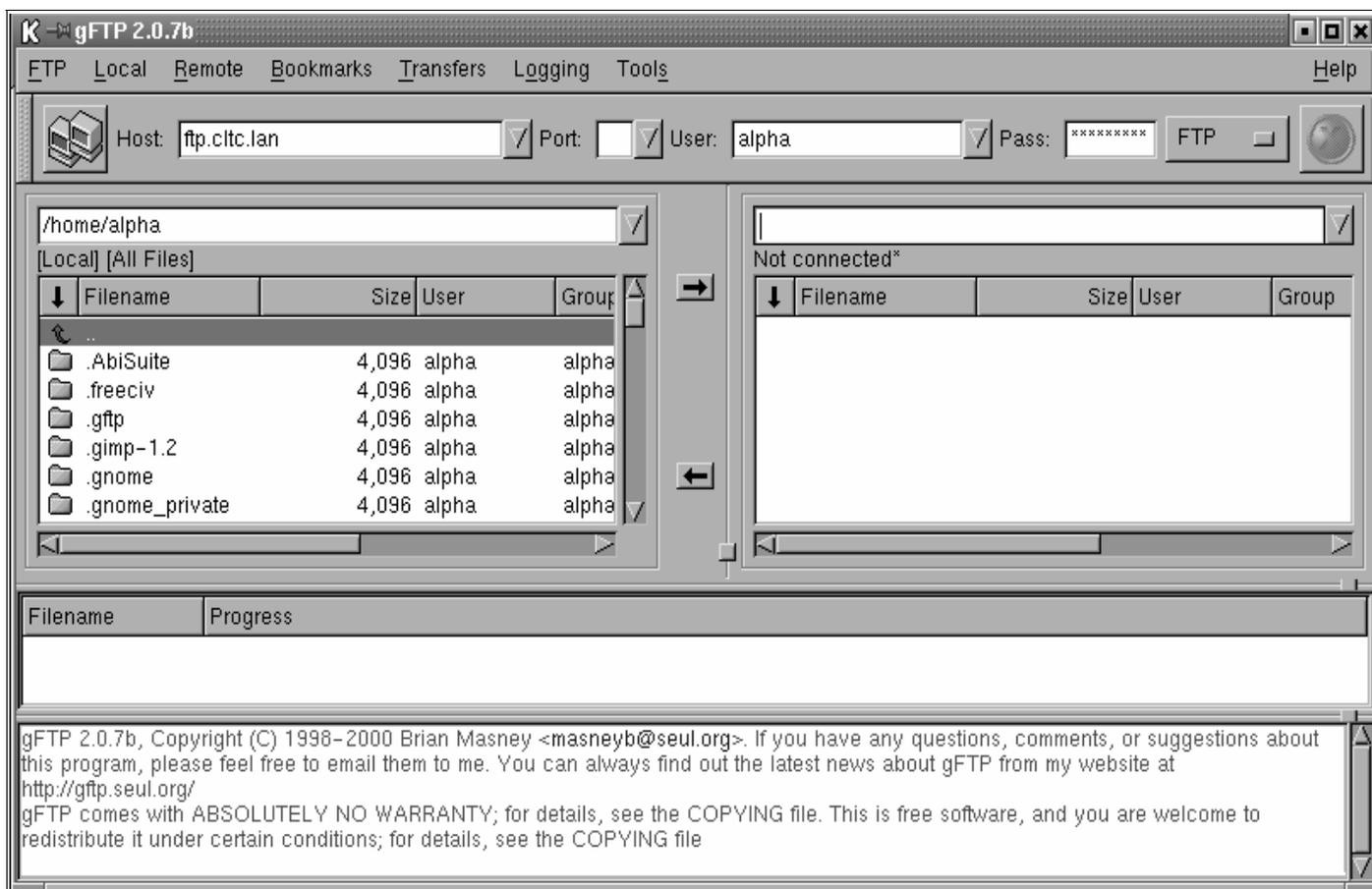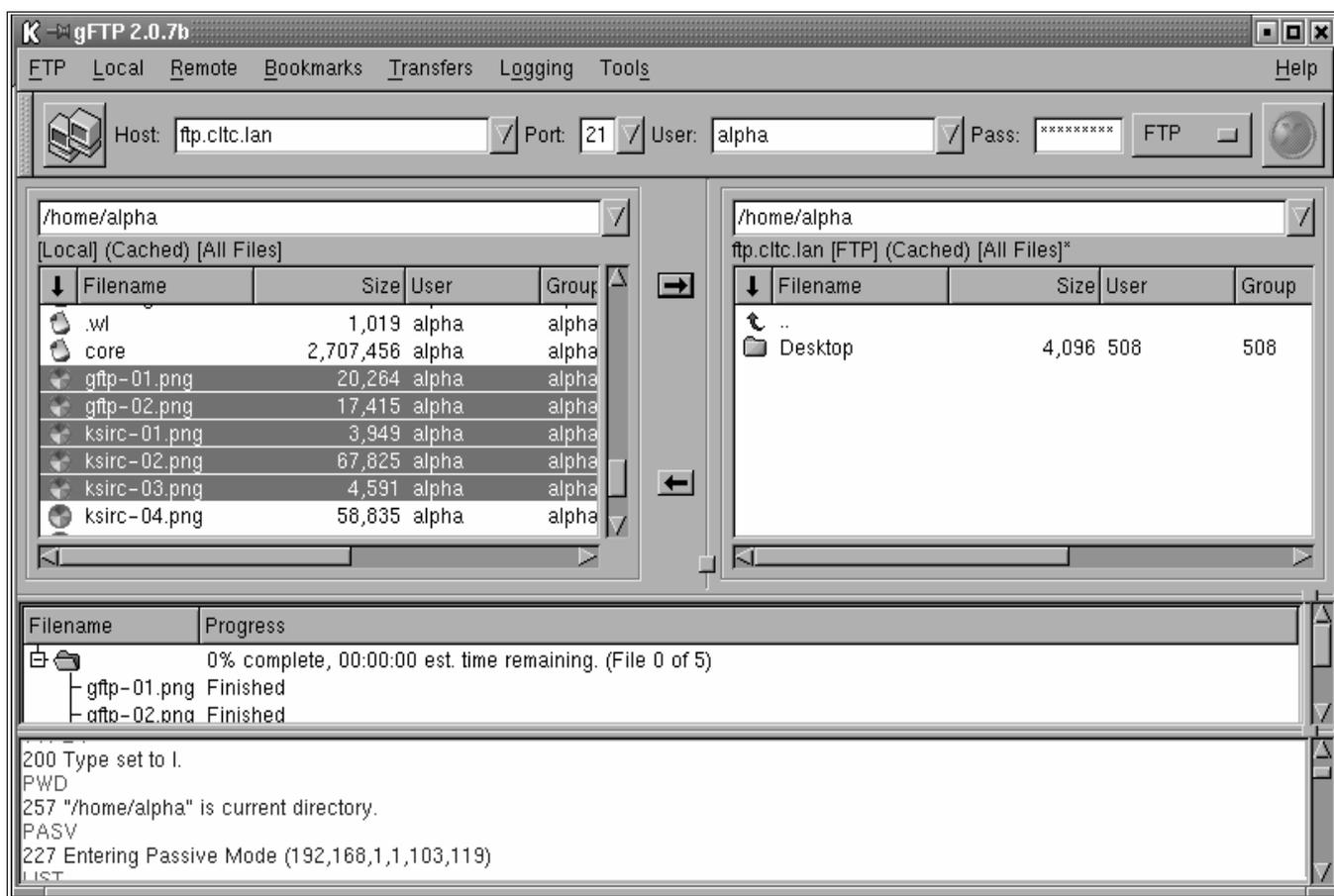
an FTP client program that organises the transfer of files between your hard disk and the server's hard disk.

On the CLTC system we use the Gnome FTP client – *gFTP* – although there are many other client programs available, all with different features. gFTP has five parts to it (see above):

– At the top is the menu/taskbar with various buttons and boxes containing information about the site you are connected to, and the various menu options.

– Below this are two directory windows. The one on the left shows the content of the current directory on the 'local' system – your computer. On the right the window shows the contents of the directory on the 'remote' system – the FTP server you are connected to.

– Under the directory display is a status window that reports the progress of file transfers. When you ask to move files this window displays a list of the files to be moved, and the progress of moving each file.

– Finally there is a report window that lists the commands sent to the FTP server, and the server's response. FTP was originally a text–based protocol – this window replicates the text of the commands and the response as if you had issues the commands yourself.

To login to a server you need to know the server's name, and have a user account and password. Don't worry about the port number – FTP uses port 21 unless otherwise stated by the server operator. If you are using a public server you won't have a user account. We therefore class FTP as either 'anonymous' FTP or 'user–based' FTP.

When you use the FTP server anonymously, you enter your user name as 'anonymous' and the password as your ordinary email address – 'alpha@cltc.lan'. You are then given access to a set of 'public' directories.

When using user–based FTP you have to have an account on the system. You are then given a user name and password to login with.

Finally, you have the option of entering a directory path for the remote system (by default, the local system directory path is your Linux home directory). This can be a useful way to save time when you know the location you want to go to on the server. But sometimes, with user–based FTP, you have to enter a path in order to be located in the proper directory – for example, you upload files to your web site.

Pressing the enter key from a text box, or clicking the button containing two computers causes gFTP to attempt to connect to the server. If successful, you will see the contents of the directory displayed in the right directory window. The successful connection is also logged in the report window at the bottom. If the connection fails, this is reported in the report window, along with a rather cryptic reason why.

Once you are connected you can manipulate the content of both directories. The exception is anonymous FTP which usually does not allow you to modify the content of the server's directories. If you can upload files with an anonymous login, then it is usually only to identified 'up–load' directories.

Between the directory windows are two buttons – each with an arrow (see above). If you select a file in the local directory by clicking on it, and then press the '→' button, it will be uploaded (if you have permission) to the remote directory. If you select a file in the remote directory, and press the '←' button, it is downloaded to the local direc–tory. To select more than one file you can click on one file, press the shift key, and whilst holding the shift key use the arrow keys to highlight more than one file.

To navigate to different directory, double–click on a di–rectory name. There will be a short delay whilst the client connects, and then it will begin downloading the new di–rectory information. To go upwards to the directory you just came from click on the '. . /' line – this takes you up one level. You can also manually edit the path above the directory window, and press enter to make the client jump to the new path.

You can also manipulate the content of the directories by selecting a file and then right–clicking with the mouse on the directory window – this will give you a menu of editing options (see below). You can also get these same menus by clicking on the 'Local' or 'Remote' menu options.
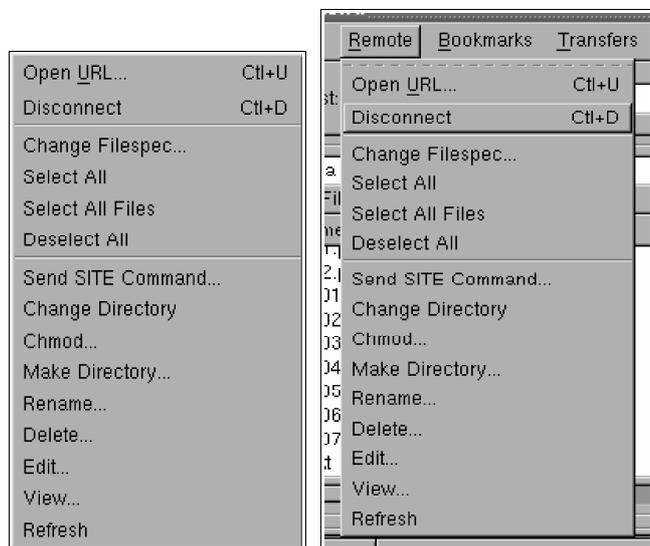

You can delete, rename and view a file. But this menu also allows you to disconnect the current connection, or open a new one.

If you want to keep location information of the site to use again you can 'bookmark' it (see top right – as you do with web pages. Clicking on 'Bookmark' and 'Add' will add your current locations.

If you click on 'Bookmark' and then click on the name of a site the client will attempt to connect to it.

There are actually many other things that you can do with gFTP – this is only a basic introduction to its use. There are many features available within gFTP's menus if you explore them.
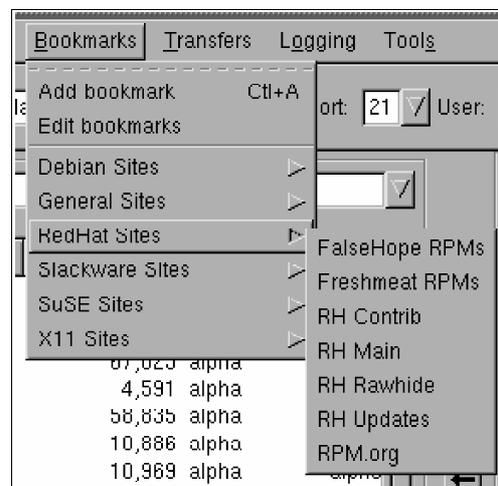
Uses for FTP

FTP is often used for downloading large files – such as archives of information or computer programs – to or from remote systems. This is why, like email, FTP persists as a well used protocol even though today the World–Wide Web is the predominant means of moving files.

FTP is commonly used to upload files to web sites. The web pages can be created locally – and a 'mirror' of the web site should be kept on your own computer incase the web server system you use fails. The files are then moved from the mirror site on the local computer to the web server, using FTP.

On the CLTC system FTP is used with the four 'virtual servers' that allow users to practice developing web sites. After uploading the files using FTP, their work can be checked with a web browser. For details of connecting to the virtual servers using FTP see the configuration sheet for your client machine.

There is also an anonymous FTP server on the CLTC system that links into the server's 'networked file system' directories.

Finally, FTP servers are a useful way of 'depositing' infor–mation. You can put information on an anonymous server, as you would a web site. But you can also use it for back–ing up data. For example, if you are on the move with a laptop you can back up important information to an FTP account – such as a directory within the free web space you get with many email accounts. This is a good method of preventing data loss if the laptop is lost, broken or sto–len. However, if the information is sensitive, you should encrypt the file(s) first.