

FIT 100: Fluency with Information Technology

Lab 2:

Creating Directories and Navigating Directory Structures

(or, Where am I, where are my files, and how do I put my files somewhere else?)

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Introduction:

For many of you this course is an introduction to a variety of new concepts, tools and technologies. Labs for FIT 100 are designed to help you learn the use of these tools in a logical and structured fashion.

Get into the habit of bringing a floppy disk or zip disk as an additional storage device for lab work. What you learn in today's lab will show you how to store documents in your remote account (Dante), but it doesn't hurt to always have a backup.

What other reasons are there for using our remote accounts on Dante for storage instead of a relying solely on a floppy or zip disk?

- A larger storage space for lab and project work (each student receives 100 MB of file space, a floppy disk is 2 MB)
- You don't have to carry around a disk or be physically located at a machine holding your work. You can work at a different machine each time as long as you have an Internet connection and the SSH client.
- Your floppy may be damaged carrying it in your backpack!!!!!!
- Backup! A lifesaver if your computer dies....!

The computers in this lab are PC and run with a Windows Operating System (aka Microsoft!). The tools used here are particular to that environment. There is software available for Macs to do the same thing, but will not be a specific part of this lab.

For today's lab you should already have your email account up and running.

Objectives: Learning to transfer files

1. To become comfortable with the concept of navigating directory structures to get to folders and files stored in different locations.
2. To understand the concept of directory location and its impact on retrieval.
3. To understand that there are many ways to access directories. We will explore how to securely transfer files when located in UW campus labs using a secure file transfer protocol known as **SSH Secure File Transfer**.
4. To create a folder (directory) on the local machine in a specific location.
5. To create a folder (directory) on the remote machine (Dante) that is holding your user account using **SSH**.
6. To move files (documents, etc) from a folder on the local machine to a folder inside of your Dante account and vice-versa

What you know:

- Your UserID and Password for email accounts
- Directory = Folder

Local vs. Remote Directories: "What's the difference?"

What is a directory?

A directory, or folder, is a container for files. Just like the folders in an office file cabinet hold documents, a directory on your computer or any other, can hold files of all types. A directory is a way to organize related files in a manner that allows for quick retrieval. If you have your work divided into the various areas they pertain to, you can use folders to hold them in a logical manner.

A directory can also be a collection of user accounts. It is still a container holding related files. You will make directories in this lab to hold your work this quarter, but you are also part of a directory of the users of email and web pages at the UW.

There are many ways to define a **local directory**. For this lab, local directories are referred to as the folders that are located on the C drive on the PC physically in front of you. Documents placed in folders at this location cannot be accessed at other campus computers. They are local to the machine in front of you.

Remote directories are folders stored on remote computers (called servers) that can be accessed from various computer labs on campus and even from home, if you have a way to connect.

Absolute versus Relative Paths when pointing (referring) to files or folders

A:\INFO100\MyFirstLab\myfile.txt
C:\My Documents\My Webs\images\

Consider the two lines just above. Both are path names that refer to the location of a file or folder. Now look at the two lines below. They refer to the same file and folder above, but are considered relative path names.

myfile.txt
images\

It's all **LOCATION, LOCATION, LOCATION!!!**

An absolute path name shows the exact path to the file. Starting from the drive it is located on, right down to the name of the folder or file itself. It always gives the exact location.

The second set of path names are known as *relative path names*. They are named relative to the current folder. The name "myfile.txt" is only useful to me if it is a file name I am looking for within the current directory. It would not be as helpful to someone just sitting down at the computer who didn't know where to start looking.

This same reasoning will be used when you begin to build web pages next week.

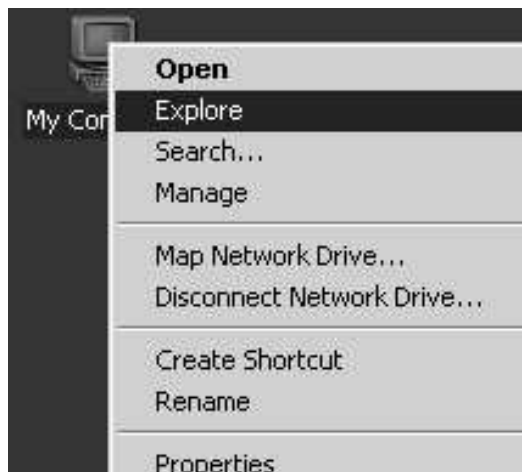
TO DO:

1. Navigate to and create a directory (folder) locally using Windows Explorer

Windows Explorer is NOT Internet Explorer. Windows Explorer is the program on the Windows operating system that allows the user to create directories and organize and search for files.

- A. Open **Windows Explorer**. You can do this one of three ways (there are even more than that):
- Press <Window key> + <e> key [Your TA will demonstrate] OR

- Move your mouse over the **My Computer** icon, right click and select Explore



OR

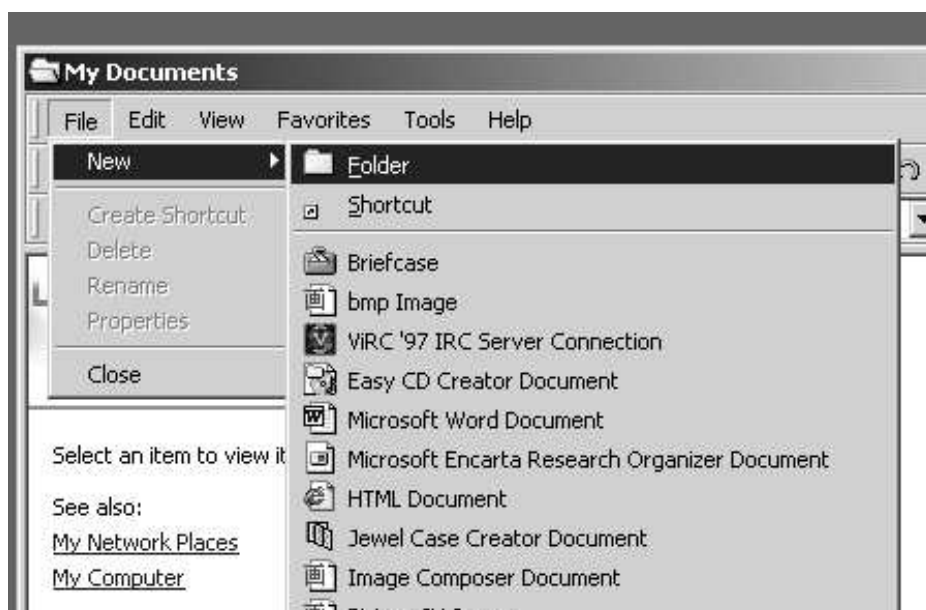
- Go to **Start>Programs>Windows Explorer**

B. Create a directory called **EraseMe** in this location:

C:\Documents\EraseMe\.

If there is no Documents folder on the C Drive, go to My Documents.

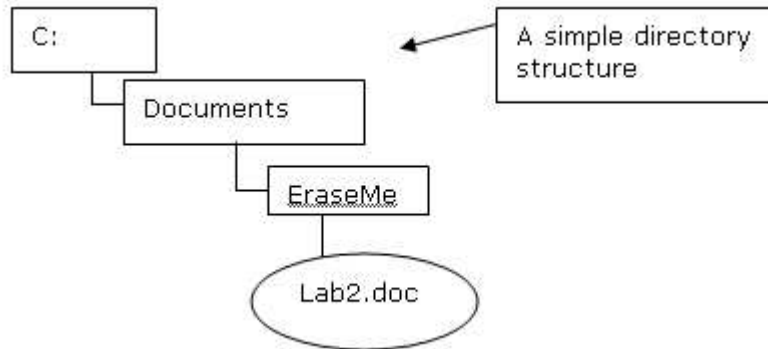
You will first move to the **C drive**, then to the **Documents** folder. Once there, go the file menu in the upper left of the screen. From the options select **New>Folder**. Name your folder **EraseMe**.



- C. Open Microsoft Word and create a new document called **Lab2.doc** (type in a few lines of text, then save). Save Lab2.doc to the following location:

C:\Documents\EraseMe\Lab2.doc

C is the top of the structure in this path, the **root** of the directory.



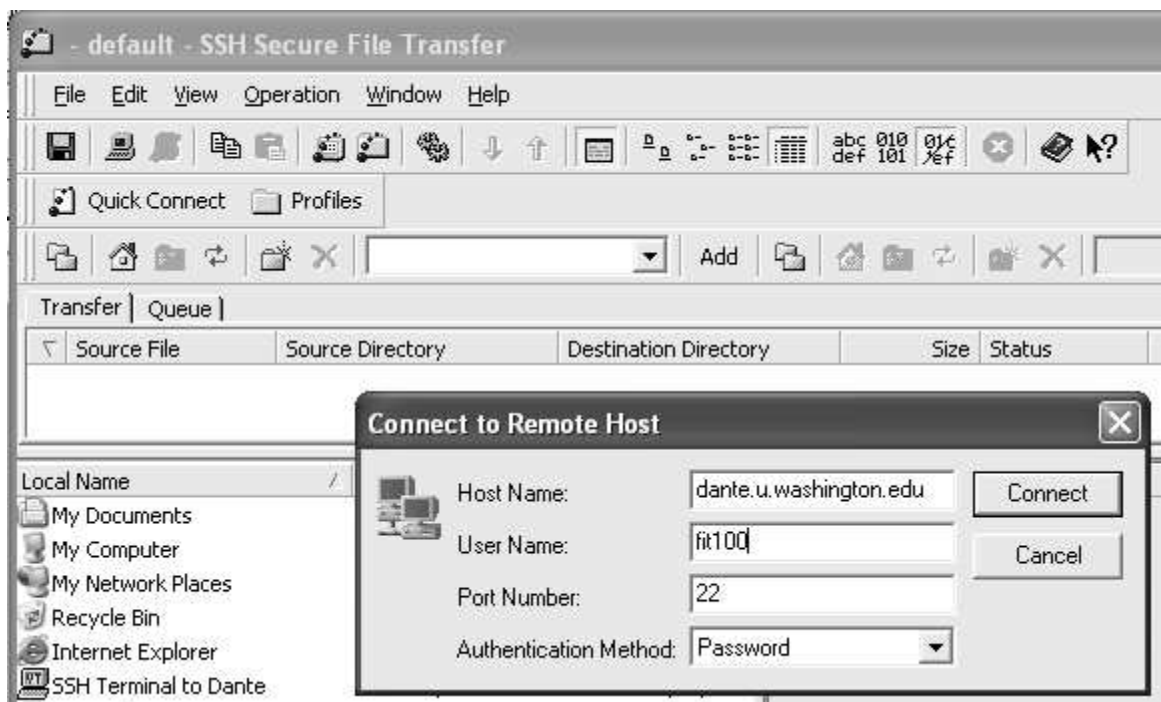
You will need the file Lab2.doc in a few steps.

2. Moving Files using Secure File Transfer (SFTP)

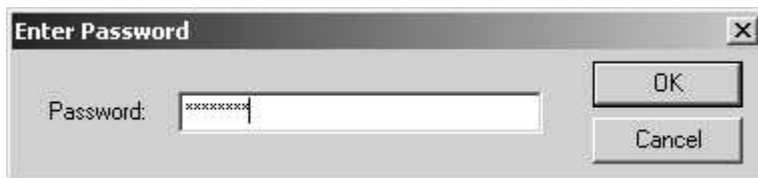
A simple way to move files over the Internet between local and remote directories is by using a secure File Transfer Protocol (**SFTP**).

This lab will demonstrate the secure application used for transferring files at the UW. It is called **SSH Secure File Transfer**.

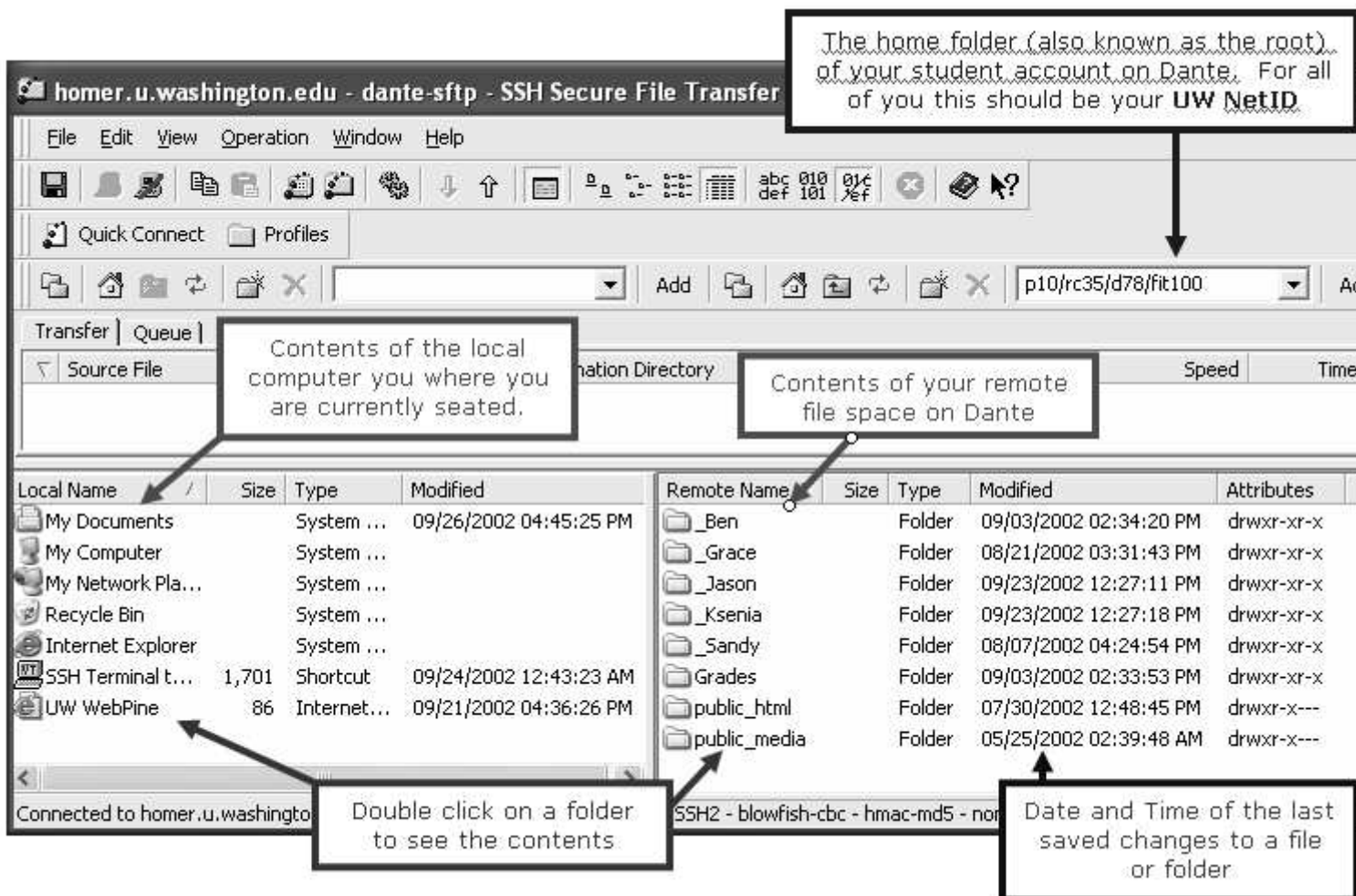
- A. Open **SSH Secure File Transfer** (the location may vary from lab to lab, your TA will direct you). Make sure the profile name is **dante.u.washington.edu**:



- B. Enter your UserID (UW NetID) in the User Name text box and click the connect button.
- C. If you have not used SSH Secure File Transfer on this machine before, you will be asked if you want to store the public key in a database. Simply click "Yes" and then enter your password on the next screen.



When you have completed entering your password, your home directory, known as the root directory, on Dante will be displayed on the right and the folders and programs from the desktop of the local computer will display on the left.



The left side of the interface displayed above shows:

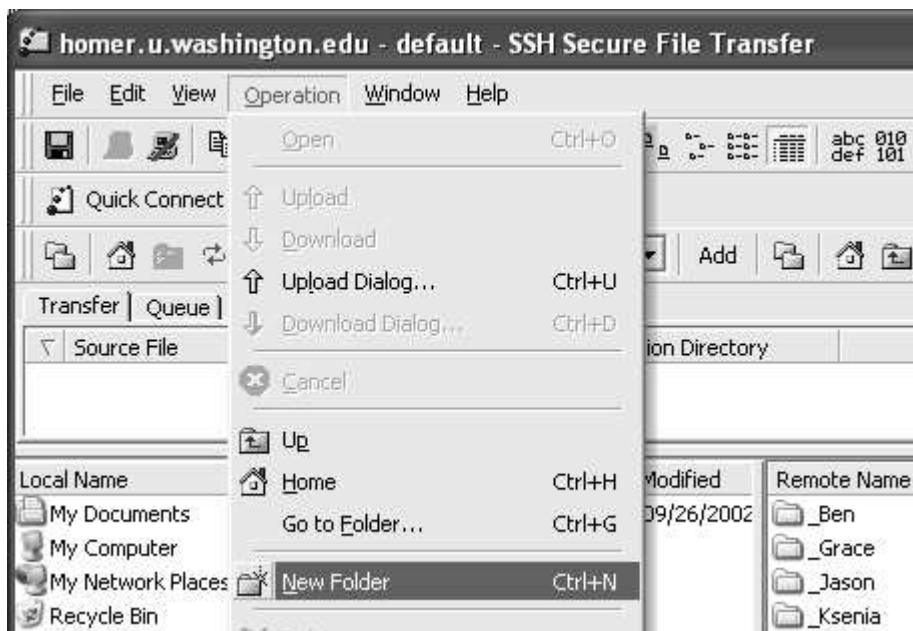
- the program shortcuts and directories (folders) that are on the desktop of the local computer.
- What the size and data type the folder or file is
- The last time the folder or file was modified

The right side displays:

- The contents of your remote file space. The name given to this space is the same as your UW NetID. Inside of this root directory many of you will not have any directory (folder) other than your public_html folder.
- The last time the folder or file was modified
- What the size and data type the folder or file is
- The permissions that are currently set on the folder or file

Explore the various features of the SSH Secure Shell interface.

3. Create a Directory remotely using SSH Secure File Transfer



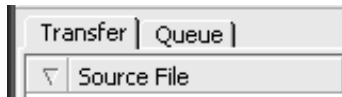
- A. Go to the Operation item of the menu bar up on top.
- Select **New Folder** and make a directory called **FirstLab** inside of your *root directory*
(HINT: you are placed in the root when you first enter your account, so what you see on the right side of the SFTP window is inside the root.)

Your root, or home directory, is the top level of your account.

You can always get there by clicking on the Home icon on the tool bar.

- B. When you finish, the new folder should appear on the right side. Double click on the folder, and an empty screen will appear on the right side. You are in the **FirstLab** directory.
- C. Navigate on the left side of the SFTP window to find the document you created in step 3 above. You should go to the C Drive to begin.
- D. Double click in the **Documents** folder and then on the **EraseMe** folder to find **Lab2.doc**.

- E. Click on **Lab2.doc** and drag it over to the right side of the screen to upload. There are other ways to upload files from your local computer to your remote space as well. Explore the SSH client window to try and find them.
- F. A copy of Lab2.doc has now been sent to your Dante account and appears on the right. There is also a log kept of what files are uploaded or downloaded during your session. See the Transfer tab on the screen:



G. Using **SSH Secure File Transfer**, perform the following exercises:

- Rename the folder (directory) that you created in your remote account on Dante. Change the name from **FirstLab** to **fit100**.
- Transfer the **Lab2.doc** file from your renamed fit100 folder to **C:** using the Operation menu. This is not the same location as earlier.
- *Is it possible to open a file from the SSH window?*
 - a. It is possible to open a file from within the SSH window, by double clicking on it. **HOWEVER**, it is just a copy stored in a temporary folder on your local machine. Any changes you make to the file will not be saved to the copy on your remote account.

You should always download a copy of the file to a local folder that you decide upon. Make changes, save it, then transfer (upload) it back to your Dante account.

A simple way to download from dante is by using the drag and drop method: left click on the file you want to download from your dante account, hold down on the left mouse button and drag the icon to the local folder you want to place the file into. Release the mouse button and a copy of the file has been downloaded to your local directory.

4. Understanding the concepts covered in lab 2:

- A. Create folders in your remote account (Dante). These folders will hold your future projects. Place them inside your new **fit100** folder for better organization for your class work:
- Create 2 folders inside fit100: **labs** and **projects**
 - Go into **projects** and create 3 folders:

project1
project2
project3

Use these folders to store copies of your projects as you work on them from different locations on campus.

B. Exit SSH Secure Shell.

You now can create folders and move their contents between locations on the local machine and your remote account on Dante. This is a very helpful resource when you need to be able to access and work on documents at a variety of locations but may not have a disk to transport the work.

There is an extra piece to this lab that has you navigate through your remote directory structures using a command line prompt rather than the Graphical User Interface. It is suggested, but not required, that you become comfortable in the environment introduced in this portion of the lab and compare it to the command line environment you will use next.

Helpful links

Use the links provided here to obtain a copy of the secure FTP and secure Telnet clients if you do not already have them:

(UWICK) UW Internet Connectivity Kit Information
<http://www.washington.edu/computing/software/uwick/>

Download UWICK kit if you have an Internet Connection:
<http://www.washington.edu/computing/software/uwick/starter/>