Setting Up Remote Access for Windows

Required Equipment:

- Raspberry Pi
- Raspberry Power Cord
- A Computer with Windows

Steps:

SSH Remote Connection

1. Boot the Raspberry Pi and the computer up. Make sure they are on the same network.

2. If Raspberry Pi setup has been done recently use the IP address created in the earlier steps other manually get the IP address by typing in the following command:
   ifconfig

3. Figure 1 is an image of information given and the circled information needed; this will be different for all devices.

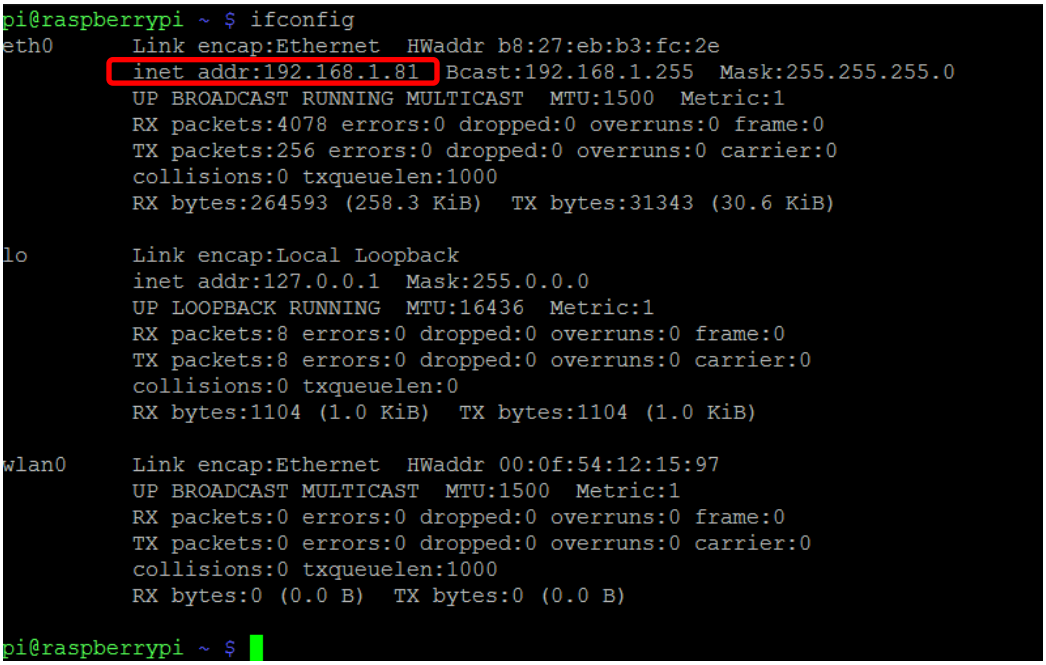

Figure 1. Information Given by *ifconfig*

4. On the computer download PuTTy from http://www.putty.org/. PuTTy is an independent executable so put the main executable in a safe place such as the program files. Then make shortcuts to it as needed.

5. When PuTTy initializes it should look like figure 2.

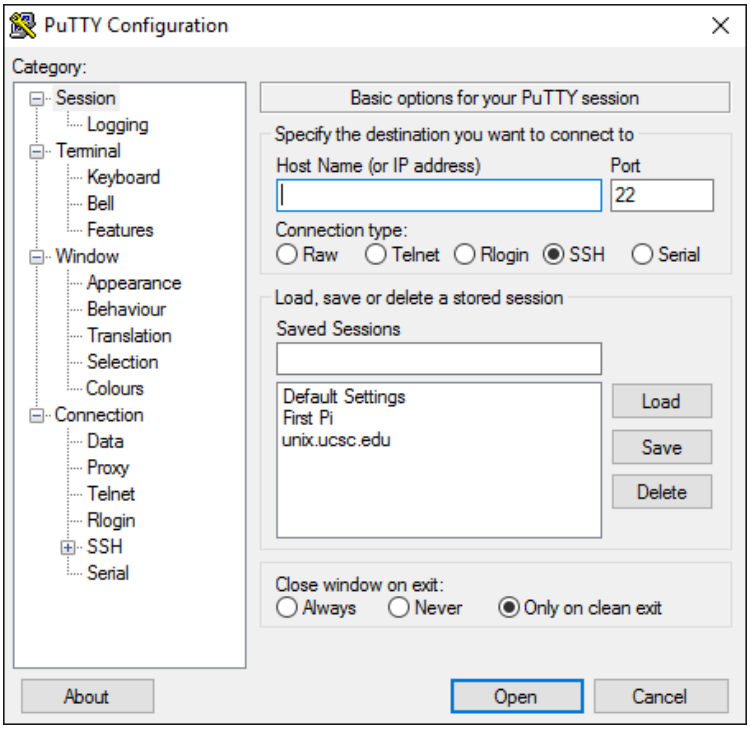

Figure 2. PuTTy's User Interface

6. In the box under Host Name put the IP address and leave port as 22.

7. For connection type make sure SSH is chosen.

8. Then think of a name for this connection and put in the saved sessions box.

9. Save the session. Now the name will be in the list bellow and selecting it will automatically put the IP address in the box.

10. When ready open the connection. It will bring up a console window for the Raspberry Pi.

11. Type in the username and password to gain access. The defaults are:
    User: pi **Password: raspberry**

Remote File Access

12. Download the FileZilla ***client*** from https://filezilla-project.org/.

13. Install FileZilla and find a spot for a shortcut.

14. When FileZilla is initialized the user interface will look like figure 3. (Directories and Folders are the same thing)

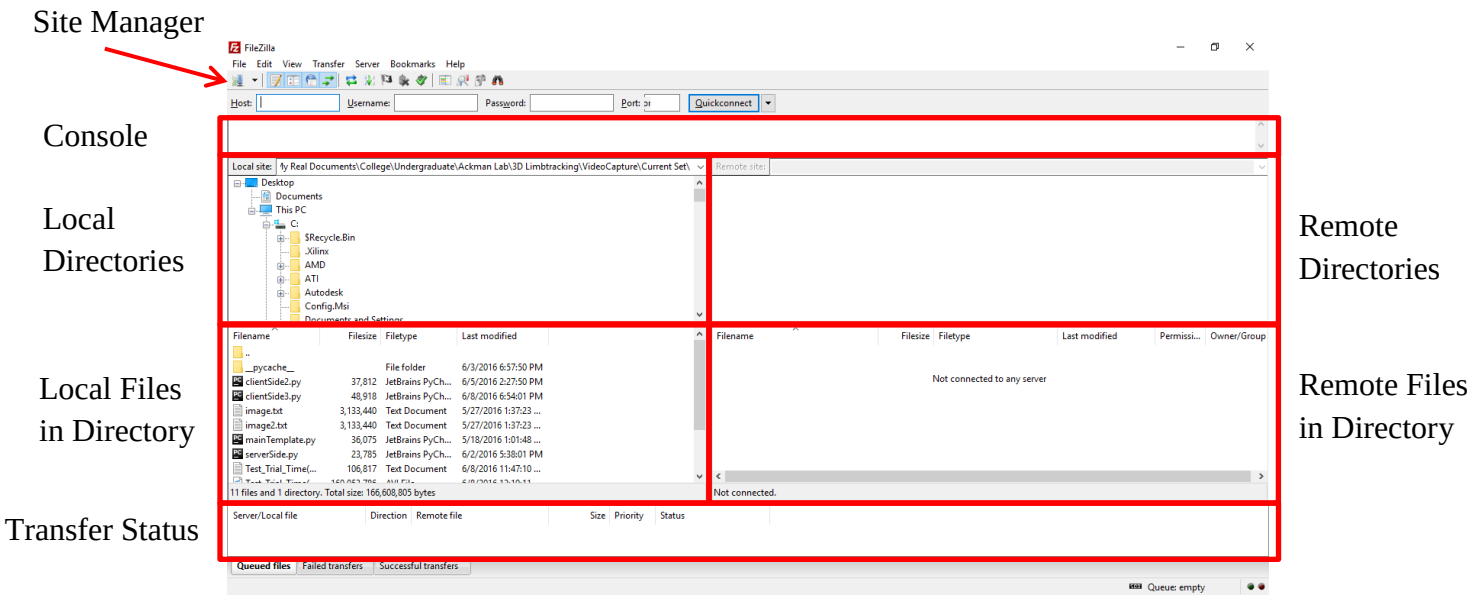

Figure 3. FileZilla User Interface

15. To add a new connection, open the site manager by clicking on it. Figure 4 shows what that should look like.

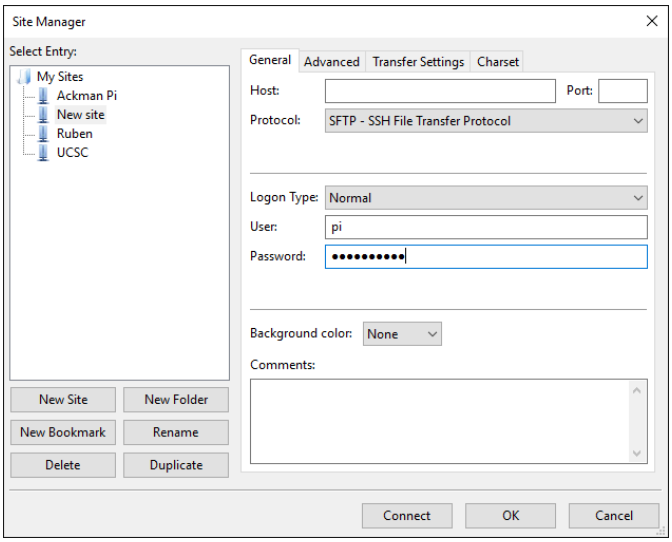

Figure 4. FileZilla New Connection

16. When once the file manager is open add a new site.

17. Change the name on the left to something fitting.

18. In host put the IP address.

19. Change the protocol to SFTP.

20. Change the log on type to Normal.

21. Input the user name and password to the Raspberry PI. The defaults are:
    User: pi Password: raspberry

22. Click OK when finished.

23. To connect either right-click on the site manager icon or left click on the arrow next to it.

24. Then select the connection desired.

25. The panels displaying the directories and files work just like the normal file explorer. So to copy files from the Raspberry Pi just drag them from the right panels to the left ones and vice versa for copying to the Raspberry Pi. Similarly a file can be dragged out from the FileZilla window onto the desktop or another window to copy it there. Also right clicking gives the option for creating new directories or deleting files/directories.

Remote Desktop

26. Windows already has program to control desktops remotely. It is called Remote Desktop Connection and is a default disabled program included with the Professional, Business, or Ultimate versions of Windows.

27. The only requirement for the Raspberry Pi is XRDP. In RaspberryPI-Setup installing XRDP is a part of the steps but if it has not been downloaded the command is:
    sudo apt-get install xrdp

28. Search for Remote Desktop Connection by typing its name into the program search in the start menu.

29. If it does not show up it might be disabled. To enable it for Windows 8 and 10 the search should have yielded a control panel setting, click on that. Figure 5 shows this.

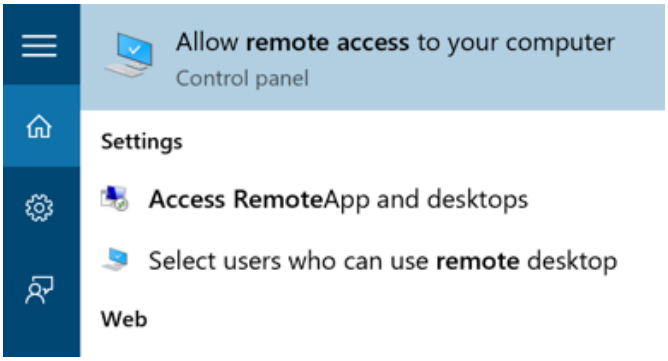

Figure 5. The Remote Access Allow Option.

30. Under the System Properties select “Allow remote connections to this computer” from the Remote tab. Figure 6 shows this.

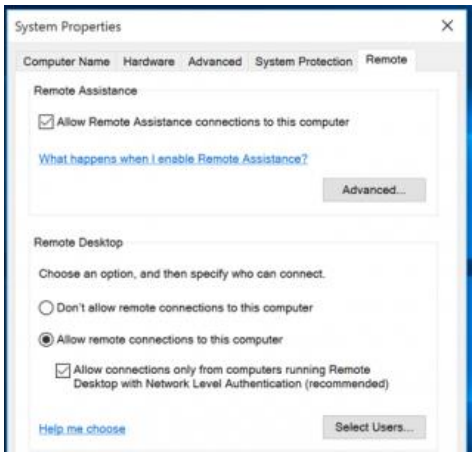

Figure 6. Windows 8+ System Properties

31. For Windows 7 and earlier either right-click the Computer icon and choose properties, or type in system into the start menu search box, and then find the entry for System. Figure 7 show where it is.

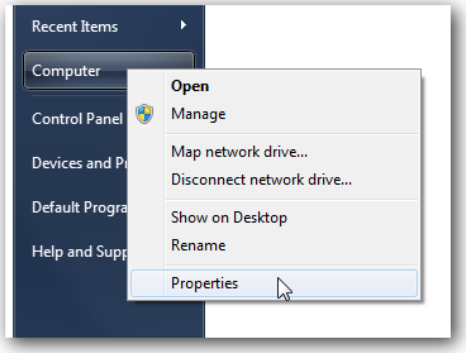

Figure 7. Windows 7 Start Bar Computer Properties

32. Click the Remote Settings link on the left hand side. Figure 8.

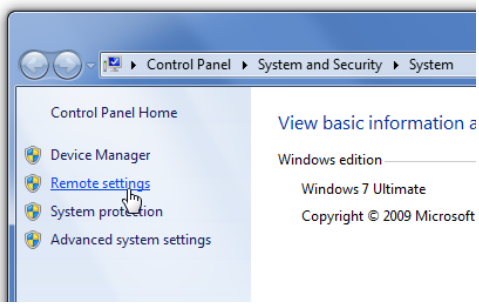

Figure 8. Control Panel Remote Settings

33. Under the System Properties select "Allow remote connections to this computer" from the Remote tab. Figure 9.

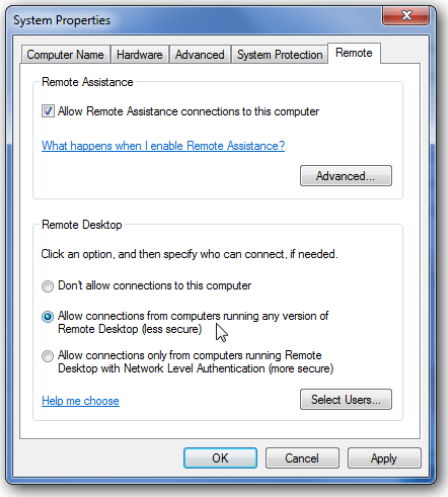

Figure 9. Windows 7- System Properties

34. Once enabled start up Remote Desktop Connection. Figure 10 is the user interface.

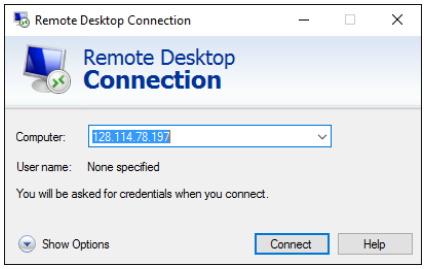

Figure 10. Remote Desktop Interface

35. Put the IP Address into the computer box and connect to begin remote control. As usual enter the username and password. The IP is automatically saves the IP but only the numbers so it can be a bit confusing after a few IPs are added. There is a way to have named connections as well. First reset Remote Desktop Connection if connected to a Raspberry Pi and get back to the first user interface.

36. Click on the show options arrow in the bottom left to expand the interface. Figure 11.

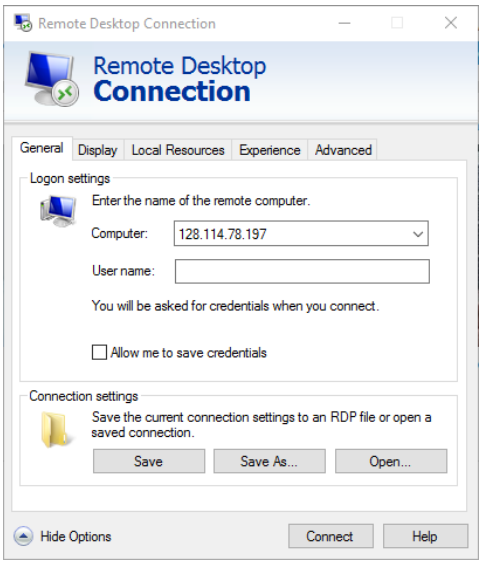

Figure 11. Expanded Remote Desktop Interface

37. Make sure the IP information is correct and save the file as some appropriate in a dedicated directory for IP information only. The User name and credentials boxes can be ignored.

38. Now the Open feature can be used to open IPs that have been named.