Connecting to the Rutgers Astrolab Server Remotely: VNC and file transfer

You will use the Rutgers "Astrolab" server to analyze images and spectra. This document describes how to connect to your "Virtual Network Computing" (VNC) desktop environment on Astrolab from your own PC or laptop. This environment has image display and analysis tools that you will use with your data. Once the initial analysis is complete, it is often useful to transfer intermediate or final results to your own computer for further analysis or to write up your report. The second part of this document describes some file transfer tools.

You will be given your username and password on the Astrolab system. The former is usually your last name (removing spaces and punctuation, if any) and the latter is the last six digits of your student ID number (with leading zeros if appropriate). Each of you has a unique 2-digit VNC session number; this will be the same number throughout the semester.

VNC Desktop
The best option for connecting to your VNC desktop depends on the operating system of your computer. Using the web browser to connect to your desktop works for any operating system, but confines the desktop to your browser window. For Windows machines, the best option is probably the TightVNC program (there is a MacOS equivalent program, but it seems to be somewhat flaky for later versions of the operating system). For MacOS, the recent few versions have a VNC server built in and this seems to work well. If you have a generic Linux machine, you probably know enough to set up a VNC server, but consult with us if you are having problems connecting. Details on these options are given below.

No matter how you connect to the **astrolab** server at Rutgers, a second password request will probably come up once you connect – this is normal – don't panic!

Once you see the desktop environment, clicking on the ***Terminal*** icon will open a terminal window in which you can enter text commands. A prompt will appear in the form of:
[user@astrolab ~]$

When you are finished with your session, *don't log out*! Just kill the window: click on the "x" in the box at the upper right corner of the screen for Windows or on the red ball at the upper left corner for MacOS.

If your VNC session is not working, see the directions at the very end of this document on how you can remotely restart your VNC session.

Installing and using a VNC server program

I. *Get VNC (Windows) or Chicken of the VNC (MacOS)*
1. Download the latest version of *TightVNC* from **http://www.tightvnc.com** or *Chicken* from **http://chicken.sourceforge.net**.
2. Follow the steps for installing the program. When you're done, you should have a *TightVNC* icon on your desktop (Windows) or a *Chicken* icon in your applications folder (MacOS).

IIa. *Connecting to your **astrolab** desktop using **VNC Viewer***

1. Click on the *TightVNC* desktop icon.
2. Enter your *VNC Server*: **astrolab.physics.rutgers.edu:##**
   ## refers to the session number that you've been assigned.

   Then click the "Connect" button.

3. Enter your password at the prompt.

IIb. *Connecting to your **astrolab** desktop using **Chicken (MacOS)***
1. Start the *Chicken* application.
2. Enter the *host*: **astrolab.physics.rutgers.edu**
3. Enter the *Display or port*: **##**
   ## refers to the session number that you've been assigned.
4. Enter your password at the prompt.
5. Then click the "Connect" button.

A Browser-based VNC Connection

If you don't want to (or are not allowed to) install *TightVNC* or *Chicken* on your computer, you can accomplish the same thing using your web browser. Go to the URL:

http://astrolab.physics.rutgers.edu:58##

where you substitute your session number for the ##. This must be 2 digits, so if you are session 3, you would use 5803. Use your password as discussed above.

Native MacOS server
1. Open the finder and press command+k or select *Go* from the top of the screen and then *Connect to Server*.

2. Type in the server address vnc://astrolab.physics.rutgers.edu:##, where ## is your session number (use a leading 0 if your number is a single digit). This will open up the screen-sharing app which will ask for your password (your astrolab password). After entering your password, select *save in keychain*, then *connect*.

This opens up a desktop window in the same way Chicken would except that, for me, the screen is fitted better, the image quality is much better, and the response is much faster as well.

3. Once the VNC connection is established and the window is open, go back to the top of the screen. You should see screen sharing in bold. Next go to *Connection* and click on it to get the drop down menu. From there select *Save As*. I named my connection astro and saved it to my desktop. This will place a VNC object on your desktop and opening this object (double clicking) will bring up the screen sharing connect prompt. If you saved your password in keychain you just need to press connect and you are good to go. [For a machine running Snow Leopard, you cannot save the connection but are still able to open and use the connection. Later versions of the operating system do allow you to save the connection.]

File Transfer Tools

The best tool again depends on the operating system of your computer.

Windows: The SSH and FTP programs are used to connect to **astrolab** from your Windows PC and to transfer files. Go to https://software.rutgers.edu/ and login using your RUID and password. Click on the FTP software category in the left-hand panel and click on "Remote Access Client" under the Utilities group.

1. Click on "Secure Shell and FTP Client 3.2" to select the software.
2. Click on "setup.exe" to download the software.
3. Follow the instructions to install the programs.

To use the program, double-click the SSH icon on your desktop. Select "Quick Connect". Enter host name "astrolab.physics.rutgers.edu" and your username, then click "Connect". In the password window, enter your astrolab password (see above) and click "OK". For quicker access, once you're logged in, click on "Profiles", then "Add Profile", and then a name (like astrolab). Then in the future, you can connect from the "Profiles" pull-down list.

For file transfer, click on the FTP icon, and then connect as above. You'll see two windows – the one on the left shows your local computer, and the one on the right the computer that you've connected to (astrolab). You can move files back and forth by simply dragging and dropping.

MacOS: On Macs, you should download and install the "preview version" of *Fugu* release 1.2.1 from *http://rsug.itd.umich.edu/software/fugu* (assuming that you are running a newer version of the operating system than Snow Leopard). Click on the link under the 6 Aug 2011 news item and on the destination page click on Fugu_1.2.1pre1.zip to download the program. This will create a Fugu.app in your Downloads directory. Drag this to *Applications* in the dock. The first time you start the program it will probably complain about starting an application from an unknown developer. Start *System Preferences* in the dock and open *Security and Privacy*. At the bottom of that window you will be able to click *Open Anyway* for *Fugu* (after unlocking the window to allow changes). After that, the program should start normally. *Fugu* works in a very similar manner to the FTP program described above. If you prefer to use a different tool, feel free to use it.

To log into **astrolab** from a Mac, just type
      ssh –l *username* astrolab.physics.rutgers.edu
at the command line of a terminal window, where *username* is your username on astrolab.

VNC not working? Restarting Your VNC Session Remotely

If VNC connects to the desktop window, but all you see is a fuzzy gray screen (or if your desktop icons are missing), you need to restart your session. You can do this from home! Here's how:

For **Windows**:
    (1) Use SSH as above to connect to **astrolab** and logon. Then type the commands:
    (2) **vncserver –kill :##**   **<Enter>**
    (3) **vncserver –geometry 1152x864 :## <Enter>**

Again, replace ## with your two digit session number. After a very brief pause, your session should be up and running!

For **Mac OS X**:
    (1) Open *Terminal* (found in the *Utilities* folder within *Applications*)
    (2) Type the command:
        ssh –l *username* **astrolab.physics.rutgers.edu   <Enter>**
    Once you are logged into astrolab, type the commands (## is again your two-digit session number):
    (3) **vncserver –kill :##**   **<Enter>**
    (4) **vncserver –geometry 1152x864 :##   <Enter>**
    (5) **exit**   **<Enter>**

Remember! *Don't log out* when you leave VNC. Just kill the window: click the "x" in the upper right corner of the screen for Windows or the red ball in the upper left corner for MacOS.