

X11

for

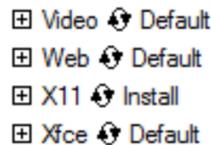
Windows

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This document introduces how to work with X11 for Windows. The installs of Cygwin and PuTTY with Xming are covered. It is recommended to use Cygwin, however since the install is large and takes up a lot of space, PuTTY with Xming can be used instead for a lighter and easier install.

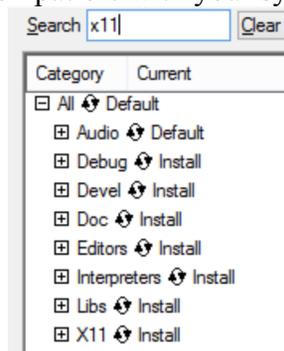
Installing Cygwin

Please note that Cygwin can take up many gigabytes of disk space to ensure you have some room to install it (5+ gigs). First, navigate to <https://cygwin.com/install.html> and download the setup for your windows computer (32 bit or 64 bit). After downloading this setup run it. Then hit next, select “Install from Internet”, hit next. Then select your root directory, it is recommended to use C:\cygwin64 and hit next. Choose your local package directory, your download folder for example, and hit next. Then click direct connection and hit next. Now you will choose a download site. I suggest using <http://mirrors.kernel.org>. You can use other sites however they may not have all the packages you will need to install. Now select the packages you want to install. Select “Default,” then scroll down and find X11 and select Install by clicking on Default.



A screenshot of a package selection window. It shows a list of categories with a search bar at the top. The search bar contains the text 'x11'. Below the search bar, there are four entries: 'Video' with a radio button set to 'Default', 'Web' with a radio button set to 'Default', 'X11' with a radio button set to 'Install', and 'Xfce' with a radio button set to 'Default'.

Then in the search bar type in x11 and install everything. Note, that this is more than you need, but will help make sure Cygwin is compatible with your system.



Install any other packages you may like or find interesting. Hit next a couple of times and then you will have to wait a while for everything to install. Then you are done with the installation.

Start Cygwin by opening up a Cygwin terminal. Log into tera with the directions as specified on the Hitchhikers Guide to Linux. Then hit `firefox &` and see if you can open a Firefox browser

running on tera. If you cannot, see the next section *Cygwin Additional Help*, to help resolve this issue.

Cygwin Additional Help

No Display Error:

```
Error: no display specified
```

Since you have a network program, you have a server (in this case the X display server) which runs on a specific machine, and you have X clients that try to connect to that server to display information. Sometimes the server and client run on the same machine, but other times this is not true.

Solution: Done on YOUR MACHINE not tera

```
export DISPLAY=yourmachine.yourdomain.com:0.0
    commonly
export DISPLAY=local:host:0.0
    or
export DISPLAY=:0.0
```

Please note that if this does not work the first time, you will need to run this **every time you open a new Cygwin terminal**. A work around for this would be to modify your `.bashrc` configuration file by adding that command to the bottom of the file. The file is commonly located in the path “C:\cygwin64\home\YOURNAME” where YOURNAME is likely the name of the computer.

Fake Authentication Warning:

```
Warning: No xauth data; using fake authentication data for X11 forwarding.
```

Solution:

Don't worry too much about this warning. Sometimes using `ssh -Y` instead of `ssh -X` will sometimes fix this problem.

Cannot Open Display Error:

```
connect /tmp/.X11-unix/X0: No such file or directory
Error: cannot open display: tera.eng.hmc.edu:10.0
```

Solution: Done on YOUR MACHINE not tera

This error means you do not have an x-server running. Either navigate to the directory C:\cygwin64\bin and locate `xlaunch.exe` (or your Cygwin install) or type `xlaunch &`

Run this executable, select “Multiple windows,” select “Start no client”, and select Clipboard and Native OpenGL on extra settings. Then click Finish. To ensure that everything is working start Firefox after logging back into tera:

firefox &

Finally, you will have to repeat this process multiple times each time you restart your machine. To solve this problem, but these steps into your bashrc file to run at startup.

Please note that if this does not work the first time, you will have to run XLaunch **every time you restart** your machine.

Slow/Non Responsive:

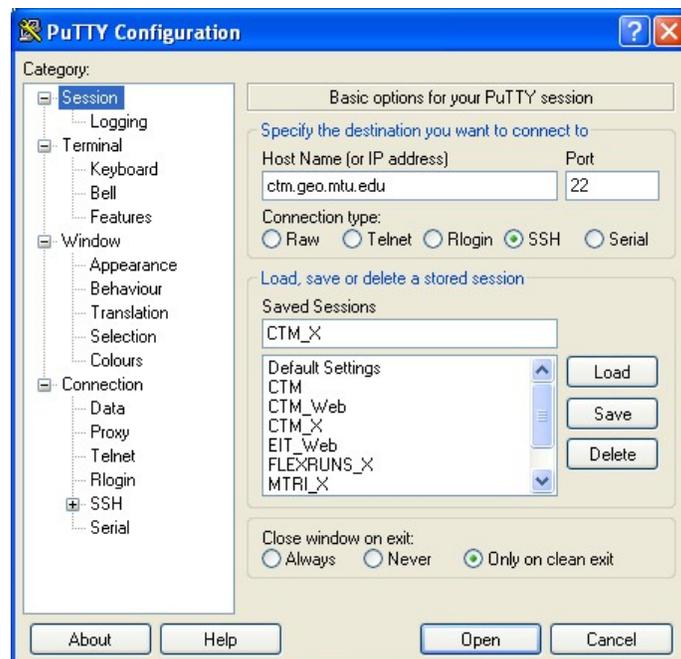
XForwarding is highly dependent on connection speed. If you have a poor connection you may experience slow speeds. Furthermore, if you are far away from terra, (thousands of miles away), you will experience slow speeds due to that distance, as many acknowledgment requests are needed in both directions. This can be slightly solved by using compression. When you ssh in use the flag `-C` in addition to `-Y`.

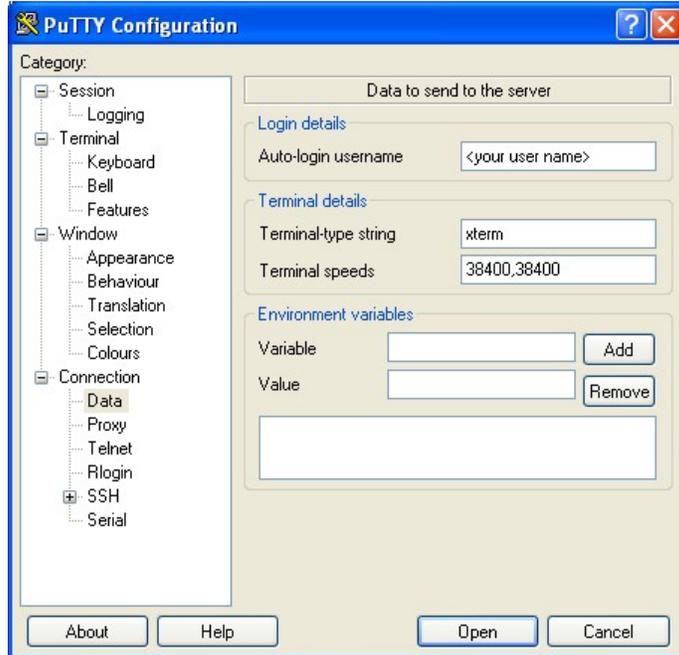
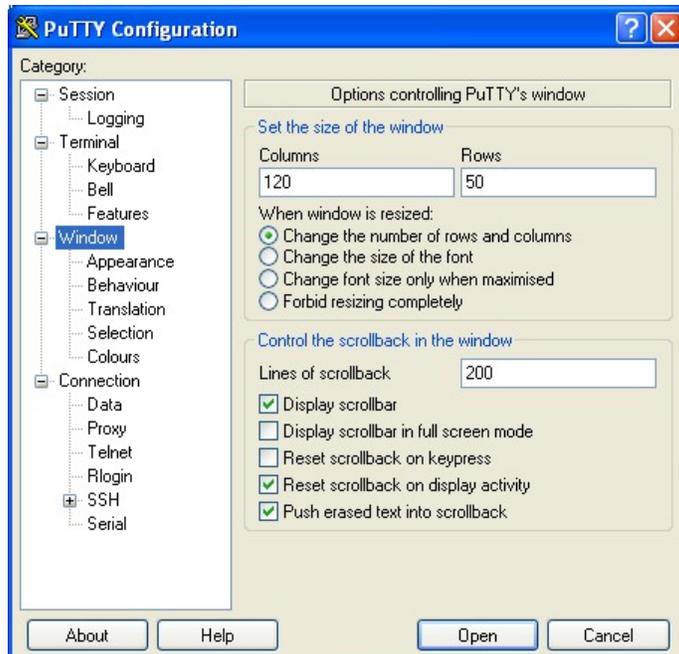
Installing PuTTY with Xming

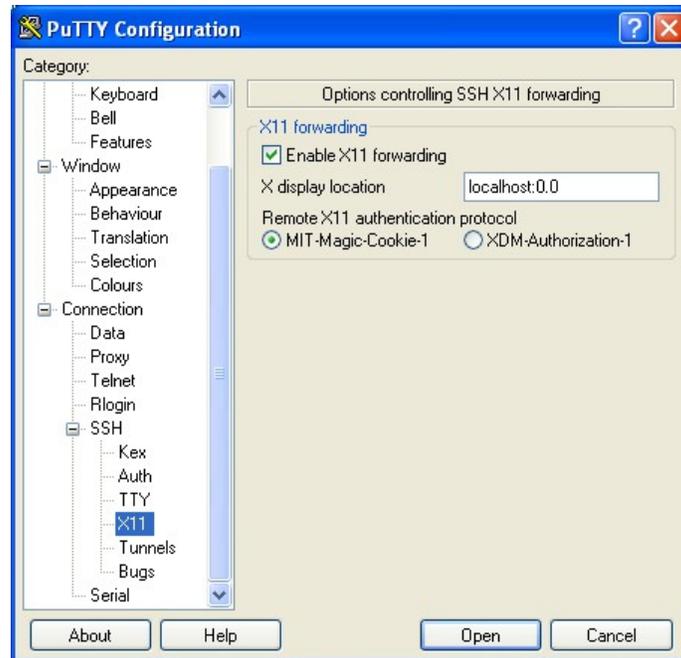
First, navigate to <http://www.chiark.greenend.org.uk/~sgtatham/putty/> to install PuTTY. Then navigate to <http://sourceforge.net/projects/xming/> to install Xming. Install each according to their respective instructions.

Now configure Xming. Open up a “File Explorer” and navigate to the path “C:\Program Files (x86)\Xming” or wherever you installed Xming. Then run the executable XLaunch.exe. Select “Multiple windows,” select “Start no client”, and select Clipboard and Native OpenGL on extra settings. Then click Finish. Now you have an XServer running in the background.

Now configure PuTTY. Open up PuTTY and configure as shown below [1]:







After this, a terminal will pop up and you can now run X11 applications. Test this by running the command

```
firefox &
```

if you have a Firefox browser open than you are set to go!

References

All pictures and the process for installing and configuring PuTTY with Xming are from:

[1] "Installing/Configuring PuTTY and Xming." Michigan Tech. N.p., n.d. Web. 10 Dec. 2014. <http://www.geo.mtu.edu/geoschem/docs/putty_install.html>.