Setting Up an X Server for Windows

1 Introduction

If you are using a Windows operating system at home and want to connect to a remote Linux/UNIX system and use some of its GUI applications, such as `gedit` or `emacs`, you will need to install and configure an *X server* on your home machine and modify your SSH client's settings. This document explains how to do this. The instructions presuppose that the Linux system to which you want to connect is running an SSH server. Here at Hunter, our host machines all do. Most modern systems run an SSH server. If you can connect and login to the server using SSH, then it has a running SSH server.

On the Mac, there is no need to install any special software, since it is already part of the Mac OS. I will describe what you need to do on Macintosh systems after.

Downloading and Installing an X server for Windows

The easiest and simplest X server to install and run is *Xming*. *Xming* is a open source X server that runs under Windows and is easy to install and use. It is small, making the download and installation fast. You can get the *Xming* executable installer from *SourceForge*:

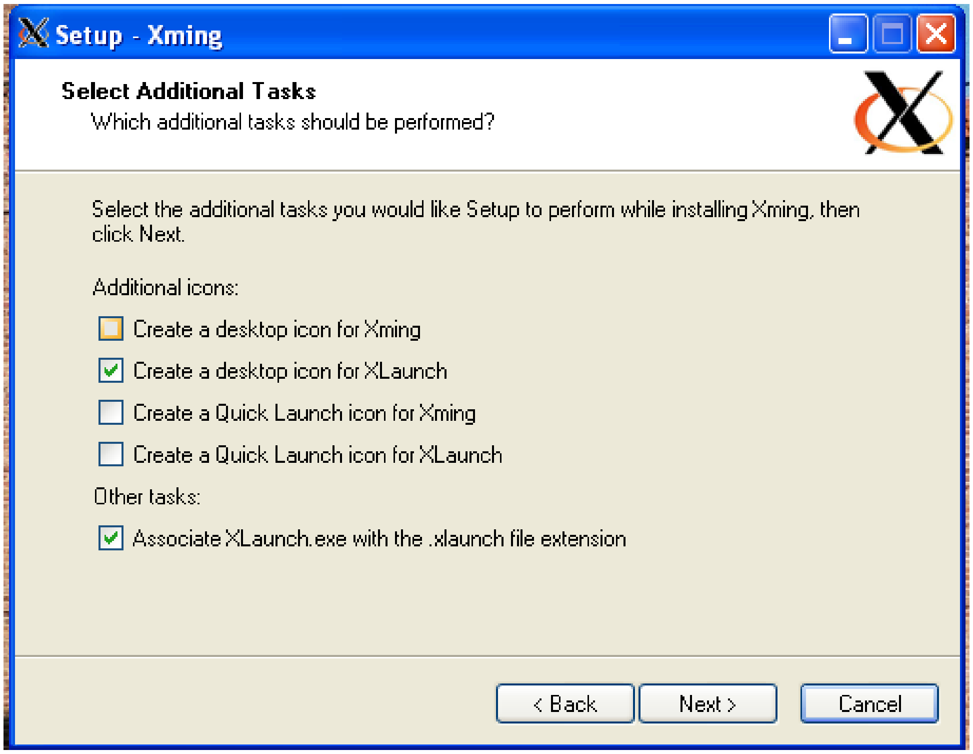
http://sourceforge.net/projects/xming/

On the webpage, click on the *Download* button. After it downloads, run the installer. Installation is pretty straightforward; just accept all of the defaults, clicking "Next" on each page of the wizard until you get to the page that asks whether to add desktop and Quick Launch icons for *Xlaunch* and *XMing*. Check the box to create a desktop icon for *XLaunch*, but not for anything else. You do not need to run *Xming*. Continue through clicking Install and then Finish eventually. If your computer has a firewall, you may need to tell it to unblock the XMing X server.

After it has been installed, there will be an X icon on your Desktop for XLaunch. All you really need is to run XLaunch. If you double-click the icon it will run. A wizard will ask you a few questions. Since all you want is for it to start up the X server, you can accept all of its defaults as well. Before you click the Finish button, click the button that says Save Configuration to a file someplace. If you do not, it will ask you these questions every time that you launch it, which can be annoying. If you save the configuration, then you can double-click that file instead, and it will silently start the X server and do nothing else. I put the saved configuration on my desktop for easy access.

Configuring your SSH client

You need to tell your SSH client to turn on X11 forwarding/tunneling. You need to do this so that your SSH client can notify the SSH server to forward all of the X11 commands to your Windows machine and draw them there instead of executing them on the remote machine. How to do this varies from one client to another. Somewhere in the client's preferences, there will be a checkbox labeled with something like "Allow X11 forwarding". It has to be checked and the changes must be saved. Figure 2 illustrates how to do it in the cleitn application that I use, SSH Secure Shell Client for Windows (which can be downloaded from the Resources page on my website.)



Setup - Xming

Select Additional Tasks

Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing Xming, then click Next.

Additional icons:

☐ Create a desktop icon for Xming

☑ Create a desktop icon for XLaunch

☐ Create a Quick Launch icon for Xming

☐ Create a Quick Launch icon for XLaunch

Other tasks:

☑ Associate XLaunch.exe with the .xlaunch file extension

Figure 1: Xming installer

Making the connection

To connect to the remote Linux system and run an application such as gedit so that its window is on your local Windows machine, do these things in the given order:

1. Start the X server by double-clicking your XLaunch configuration file.
2. Run your SSH client with X11 forwarding (or tunneling) turned on.
3. When you are logged into the remote system, try running the application. E.g.

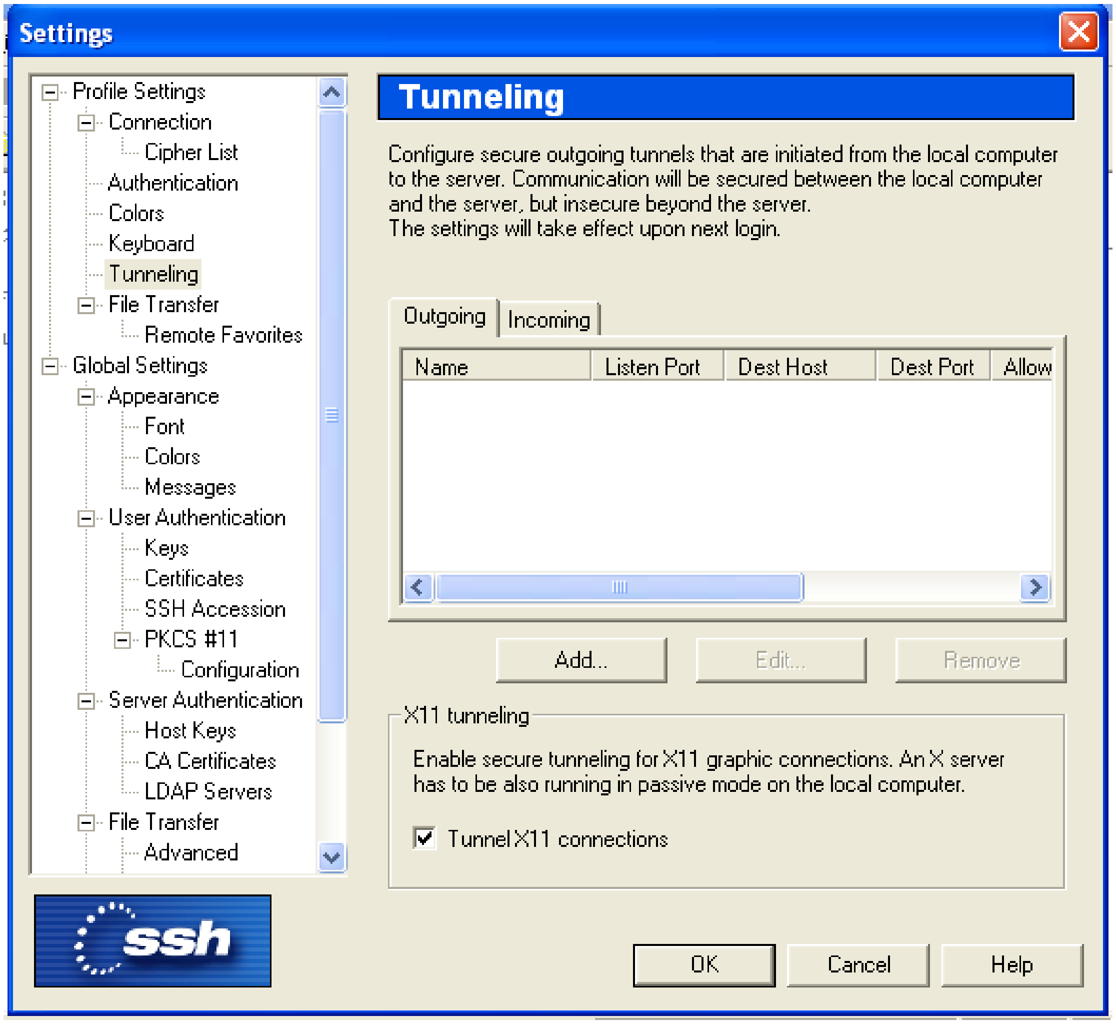
   ```
   $ gedit myfile &
   ```

It should now be working.

Suppose that the remote network has a gateway machine, like `eniac` at Hunter, and you are supposed to login to a different machine once you have logged into the gateway. What then? For example, you need to work on the host named `cslab10`. Then you connect to `cslab10` with the command

```
$ ssh -X cslab10
```

The `-X` option to `ssh` tells it to forward X11 from `cslab10` back to `eniac` (and back to your home machine.)



Tunneling

Configure secure outgoing tunnels that are initiated from the local computer to the server. Communication will be secured between the local computer and the server, but insecure beyond the server.
The settings will take effect upon next login.

Name	Listen Port	Dest Host	Dest Port	Allow

X11 tunneling

Enable secure tunneling for X11 graphic connections. An X server has to be also running in passive mode on the local computer.

☑ Tunnel X11 connections

Figure 2: Configuring SSH Secure Shell Client