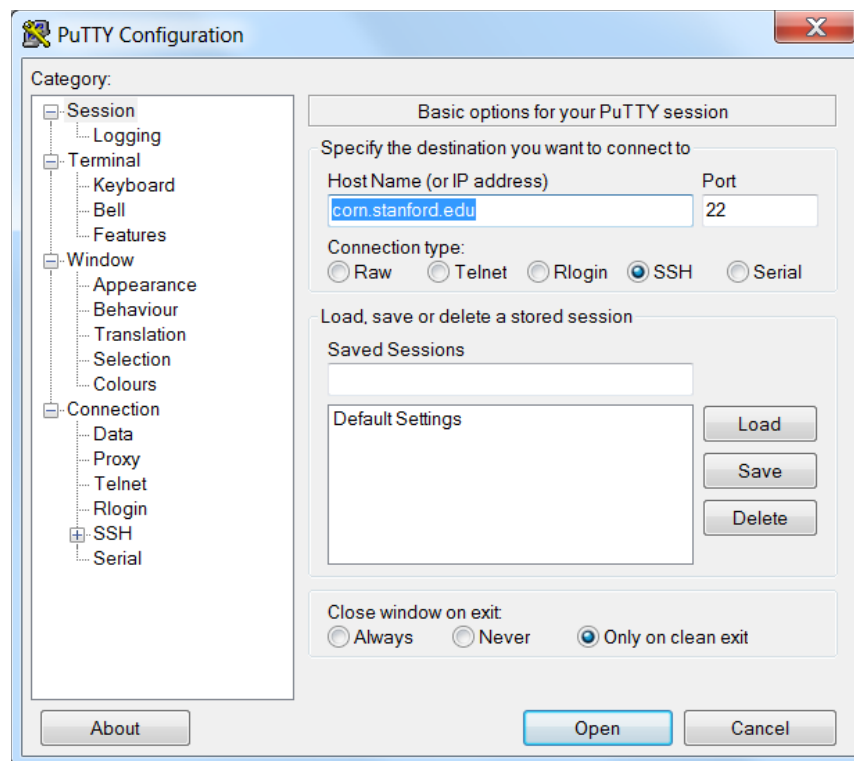


Windows: How to Install an SSH Client and an X11 Server

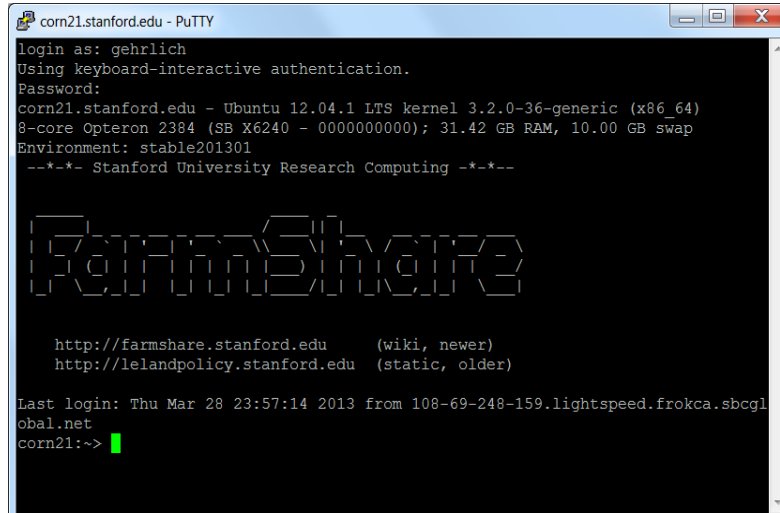
For this class, you will be logging into [Stanford's corn machines](#) remotely and using the programs installed there. For that you'll need two free programs. The first one, PuTTY, lets you access the command line of the corn computers. The second one, Xming, lets you see the graphical elements of the programs you open. PuTTY is called an SSH client, and Xming is called an X11 server.

Installing and using PuTTY

1. Download [the PuTTY executable](#). (If you're curious, [here's the site that links to it](#). It's the link in the top-left corner of the table.) Put the file somewhere on your computer convenient for you, like your desktop. PuTTY is now ready for use.
2. Open PuTTY by double-clicking `putty.exe`. You will see a dialog box. First you have to tell PuTTY which computer you're trying to access: `corn`. On the starting screen ("Session", on the left-hand navigation pane), under "Host name (or IP address)", type `corn.stanford.edu`. Underneath that, make sure the radio button "SSH" is selected. Then click "Open".



3. A new window will open and it will prompt you: "login as:". Type your SUNet ID (the one you type into WebAuth) and press enter. Then it will ask for your password; enter it. The characters will not appear. If you are welcomed by the title text "FarmShare", you're ready to go.



```
corn21.stanford.edu - PuTTY
login as: gehrlich
Using keyboard-interactive authentication.
Password:
corn21.stanford.edu - Ubuntu 12.04.1 LTS kernel 3.2.0-36-generic (x86_64)
8-core Opteron 2384 (SB X6240 - 0000000000); 31.42 GB RAM, 10.00 GB swap
Environment: stable201301
--*-* Stanford University Research Computing -*-*--

FarmShare

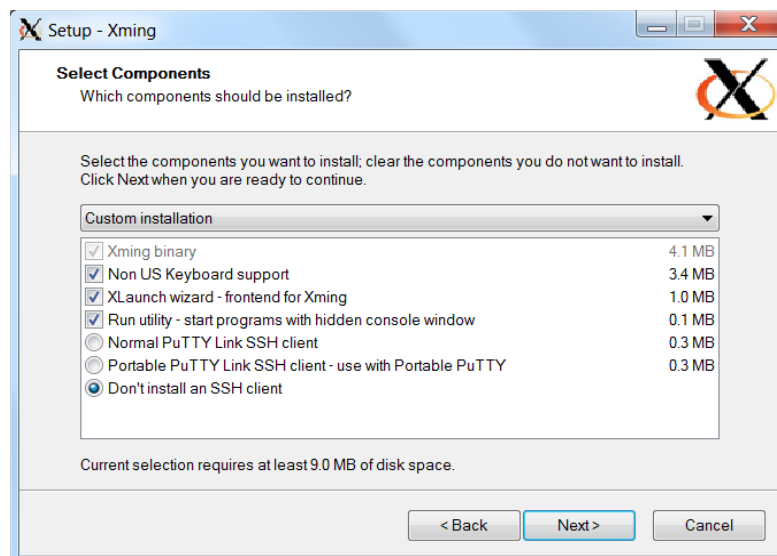
http://farmshare.stanford.edu (wiki, newer)
http://lelandpolicy.stanford.edu (static, older)

Last login: Thu Mar 28 23:57:14 2013 from 108-69-248-159.lightspeed.frokca.sbcgl
obal.net
corn21:~>
```

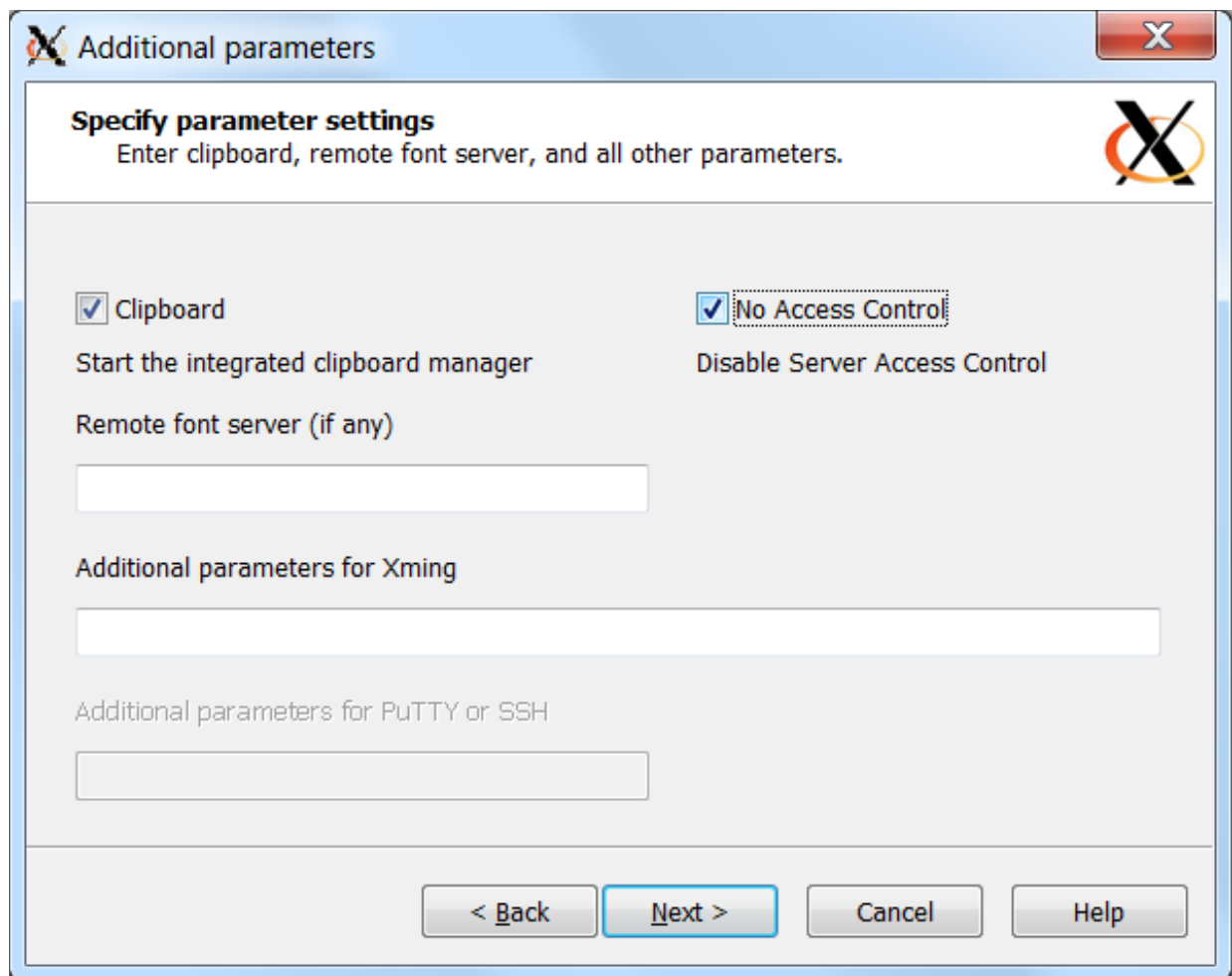
4. You'll need to make one more modification in the dialog box after installing the X11 server. It is discussed below.

Installing and starting Xming

1. Download [the Xming installer](#). Put it somewhere where you can find it and delete it afterwards, since you won't need it once everything is installed.
2. Run the Xming installer. Everything will be fine if you don't change any of the defaults. However, a couple of suggestions:
 - a. On the "Select Components" page, choose the radio button "Don't install an SSH client". You already downloaded PuTTY, which is your SSH client.

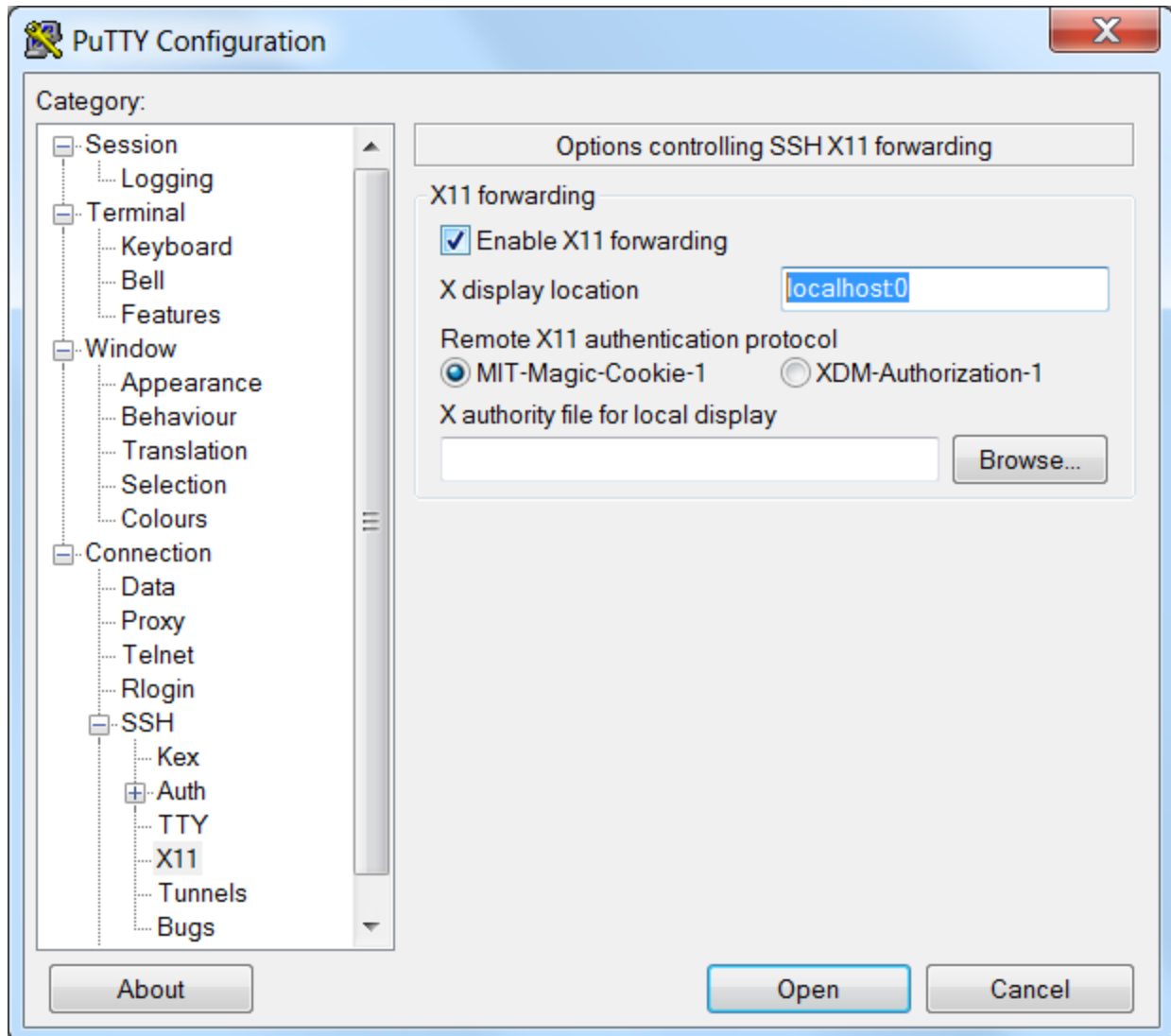


- b. On the "Select Additional Tasks" page, select the option "Create a desktop icon for XLaunch". You'll be using it in conjunction with the PuTTY exe.
 - c. Once it's finished installing, it will offer to start Xming for you. Deselect that option; we'll start it another way. Then click "Finish".
 - d. Now you can delete the Xming installer (not the XLaunch shortcut!).
3. Open XLaunch (not Xming). Click Next twice, then choose "No Access Control", then click Next and Finish. (We'll talk more about additional options during class.) That's it; now you have an X11 server running. Don't expect anything to happen just yet.



Telling PuTTY to recognize Xming

1. Now that the X11 server is running, you just need to make one little change to make sure PuTTY will interact with Xming the way we want it to. In the left-hand navigation pane, under "Connection," click on the little plus sign to expand "SSH", and then click on "X11." Then select "Enable X11 forwarding". Under "X display location", type "localhost:0". Go ahead and click "Open" again, and log in.



2. Now you can see what PuTTY and Xming can do together. In the PuTTY window, you should see a cursor blinking near the bottom. Type `gedit` and then press enter. After a few seconds, a window should pop up, and it should look like a text editor. *That window is a program that's running on the corn machine but displaying on your computer.* That's really cool and useful, and we'll be using it a lot. But for now, go ahead and close it like any other window.

Let me know your questions! Send them to Gabe at gehrlich@stanford.edu.