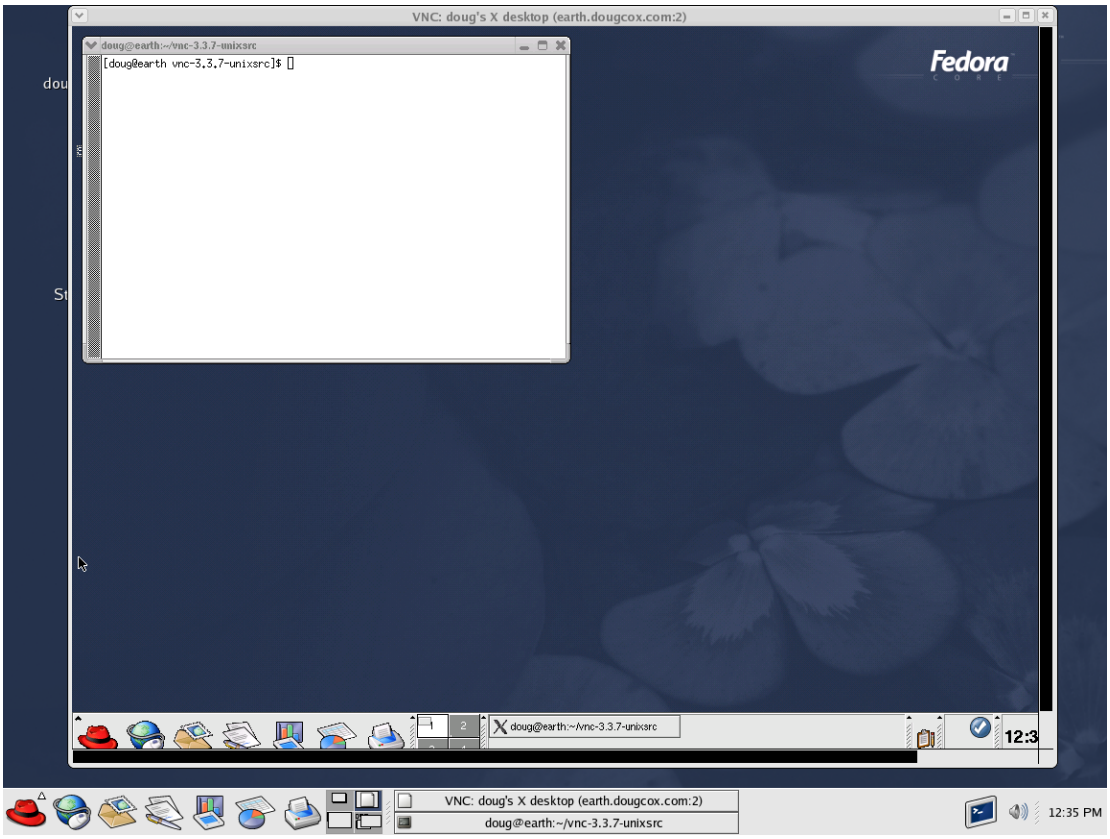
7.3.1

Remote Desktop Monitoring

(VNC)



Laboratory Overview

Objective

At the end of this lab students will be able to configure software to remotely monitor, access applications, and verify connected ports.

This lab will review the various remote options and walk through the installation on a Windows XP platform and a Linux platform.

Information for Laboratory

Students will research the following remote access applications:

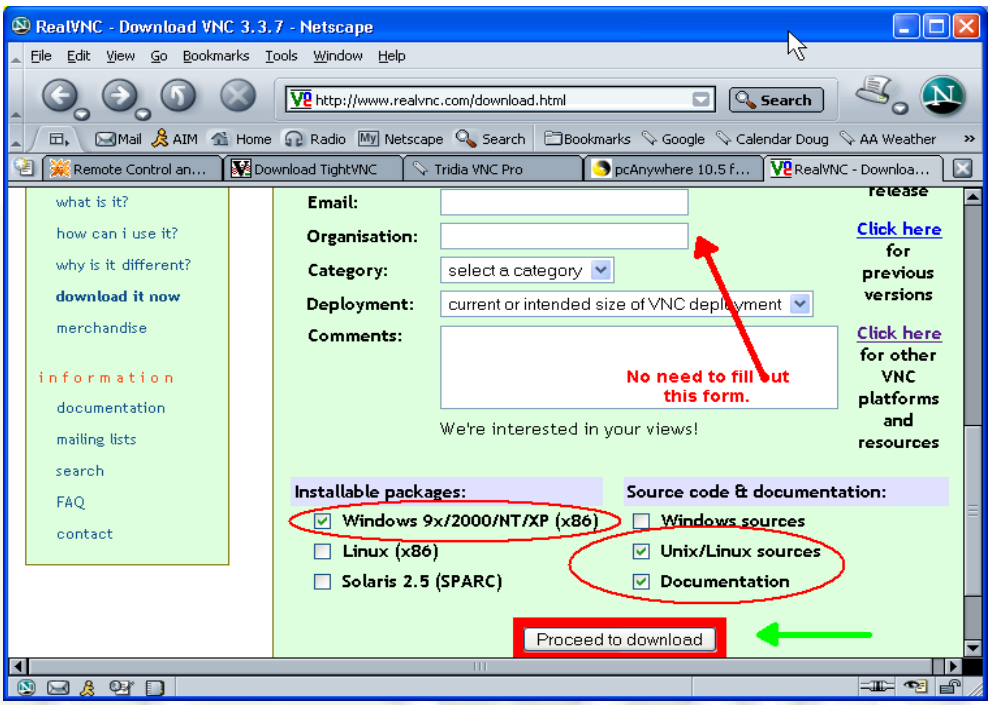
PC-Anywhere	http://www.symantec.com/pcanywhere/
Remote-Anything	http://www.remote-anything.com/
TridaiVNCpro	http://www.tridiavncpro.com/
TightVNC	http://www.tightvnc.com/
VNC	http://www.realvnc.com/

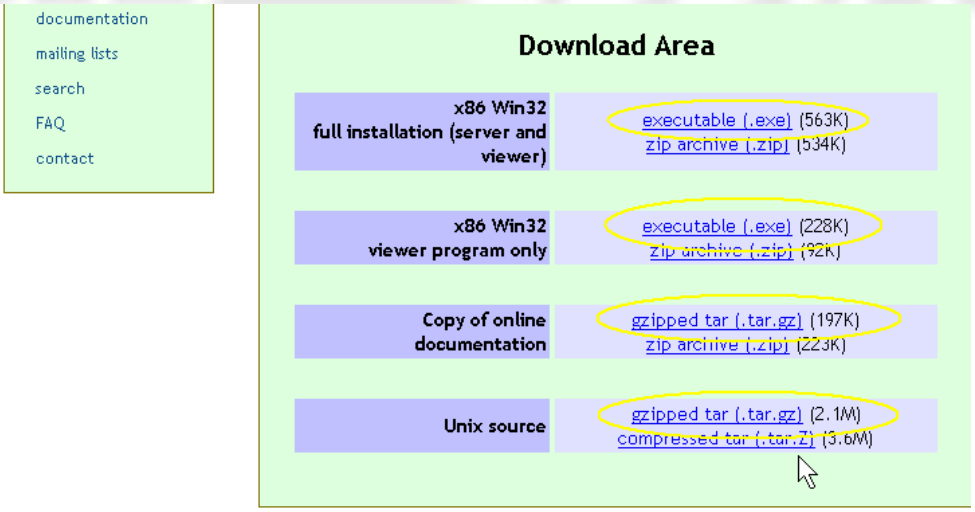
Student Preparation

1) Which products are commercial or require a license?
2) Which products are open source?
3) Which products are currently cross platform?
4) Which products will transfer files between client and server?
5) Which products are secure?
    a. Number of and strength of user name and password?
    b. Is the transmission encrypted?
6) Which products use a Browser as a client interface?
7) Which products offer a java client?
8) Which products support Palm, Zaurus, WindowsCE other devices?
9) Develop a comparison chart of the different features and discuss when it might be more appropriate to use on product over the other.

Students will need access to two computers, one with Linux (with development tools installed) and the other with Windows XP machines on the same network with a current browser and a zip utility (Winzip or PowerAchiver). Students will need admin, root and user accounts on the platforms.

Have available the following VNC software on a local server or CD (http://www.realvnc.com/download.html)





Estimated Completion Time

90-120 Minutes (perhaps up to 240 Minutes to really explore)

How it works

The software creates a server that listens for connections on a predetermined port. The client software then connects to the server which may ask for authentication. We will install a server VNC on both a Linux and a Windows platform, use a browser to connect and also a client package. The server will share its desktop to the viewer application running on the client. Depending on the configuration of the server, multiple clients can connect to one server which can useful in a training application.

PART I

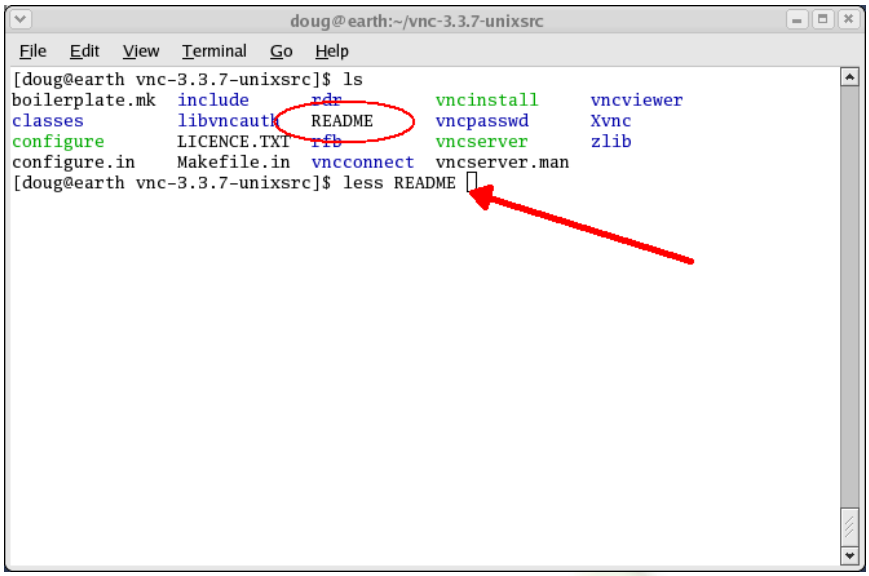
Step I: Install server on a Linux platform:

As a user (not root) log into the Linux box and in your home directory copy the vnc source code from the course CD, course server or the www.realvnc.com (see above Instructors section).

Untar the source code and cd into the source directory

tar xfvz vnc-3.3.7-unixsrc.tar.gz
cd vnc-3.3.7-unixsrc

Review the vnc README



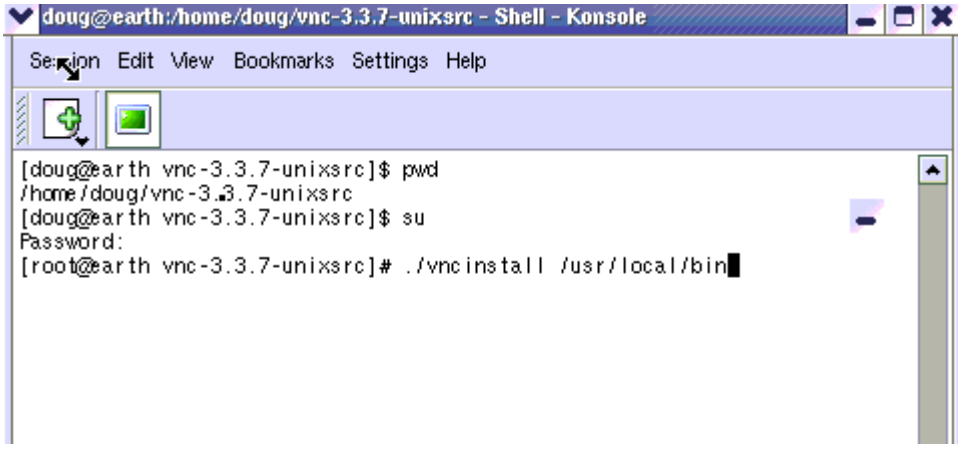
Step 2: Compile (build) the vnc server and client

Issue the following commands. If you have trouble, see the FAQ and READMEs

./configure --with-installed-zlib
make
cd Xvnc
make World
cd ..

Step 3: Install the vnc server and client

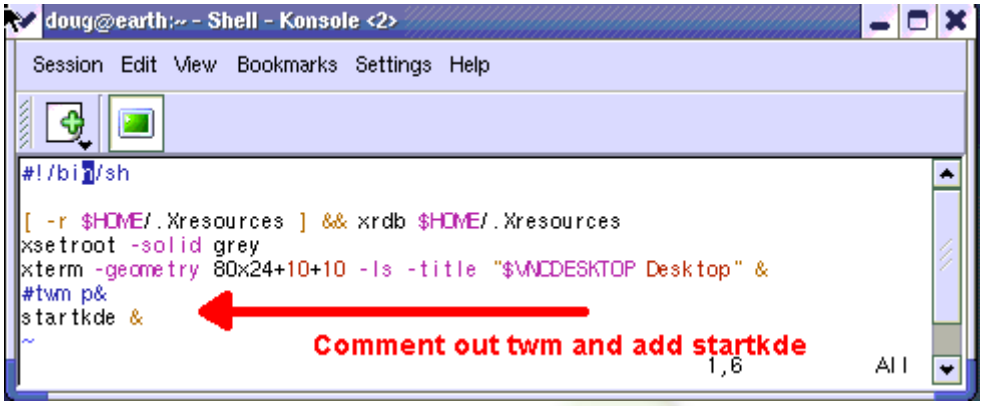
Issue the following commands from the vnc directory



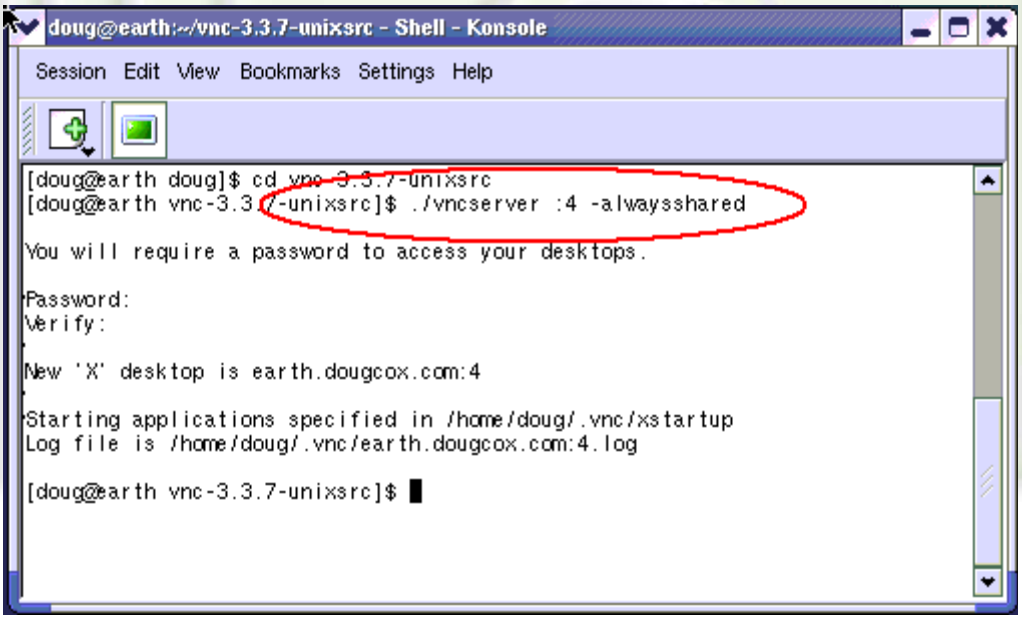
su
./vncinstall /usr/local/bin
mkdir -p /usr/local/vnc/classes
cp classes/ /usr/local/vnc/classes*
exit

Step 4: Start the vnc server

First edit the ./vnc/xstartup file to set the display manager to KDE



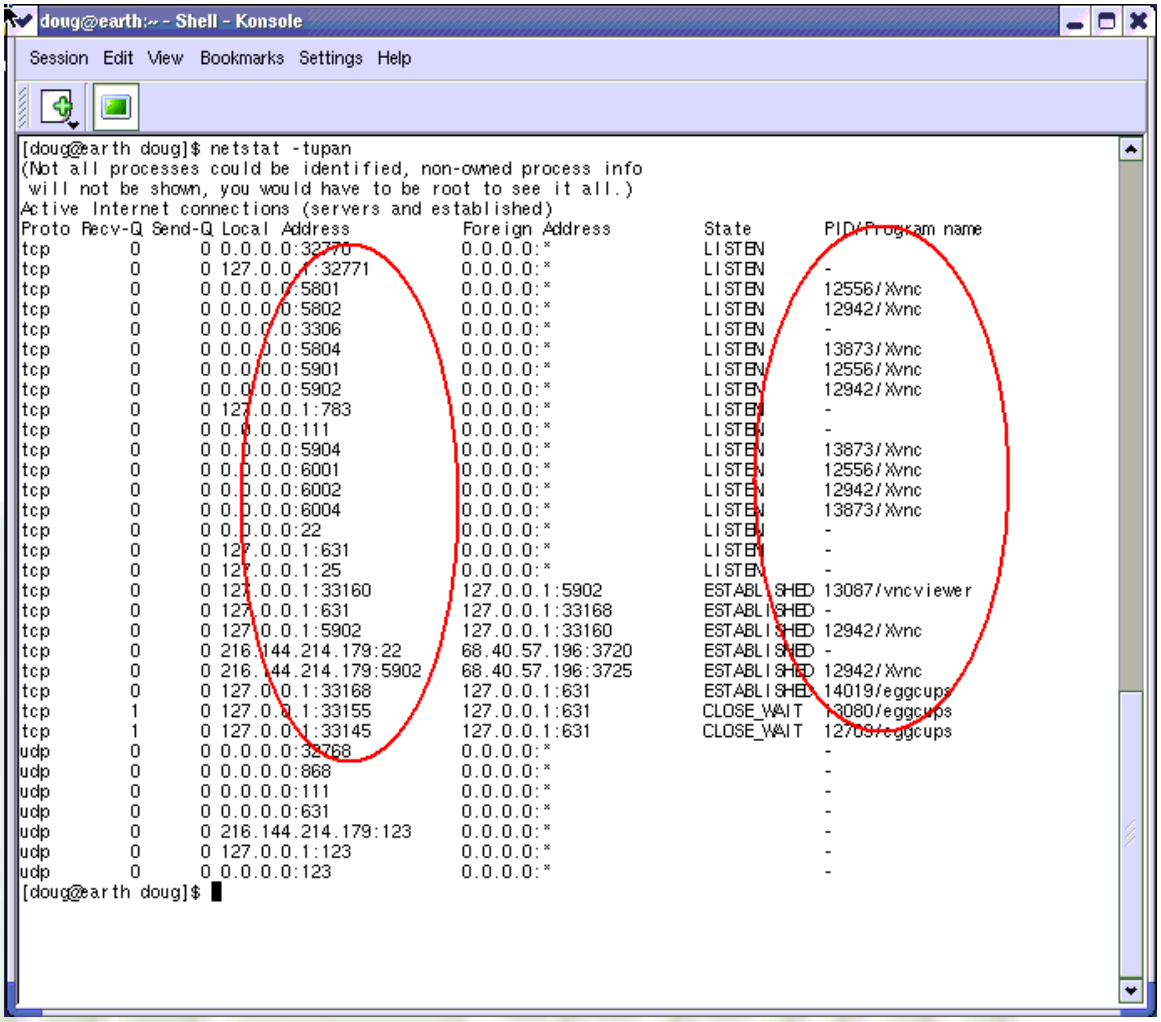
From the vnc directory start the server on screen 4



1) Where is the session being logged?
2) What happens if you don't put in a password?
3) What is the significance of "*:4*"?
4) If the server does not start what should you do?

Step 5: Verify that the server is up and running

Issue the following command: *netstat –tupan*



1) What are ports 580x, 590x, 600x?
2) Are there any connected sessions in the screen shot?
3) Are there any connected sessions on your system?

Step 6: Connect from localhost

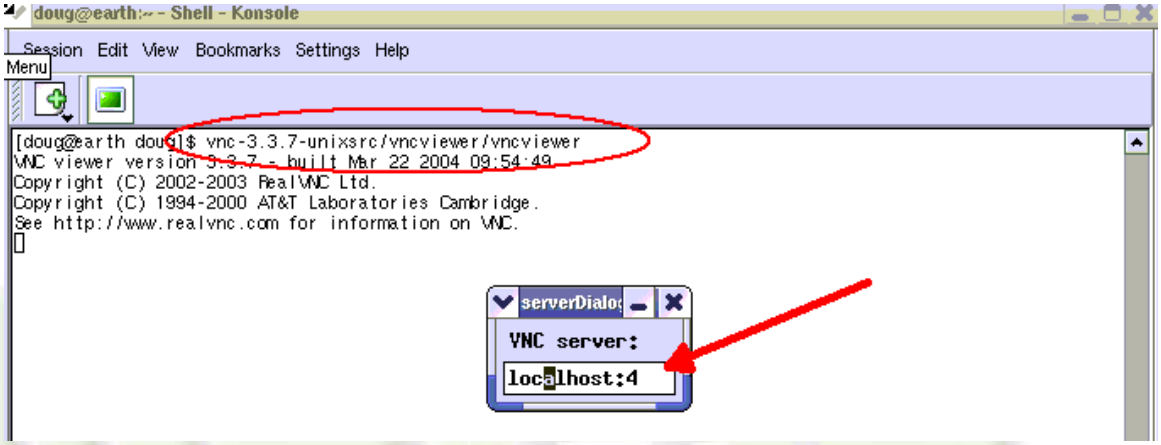
Issue the following commands:

cd

vnc-3.3.7-unixsrc/vncviewer/vncviewer

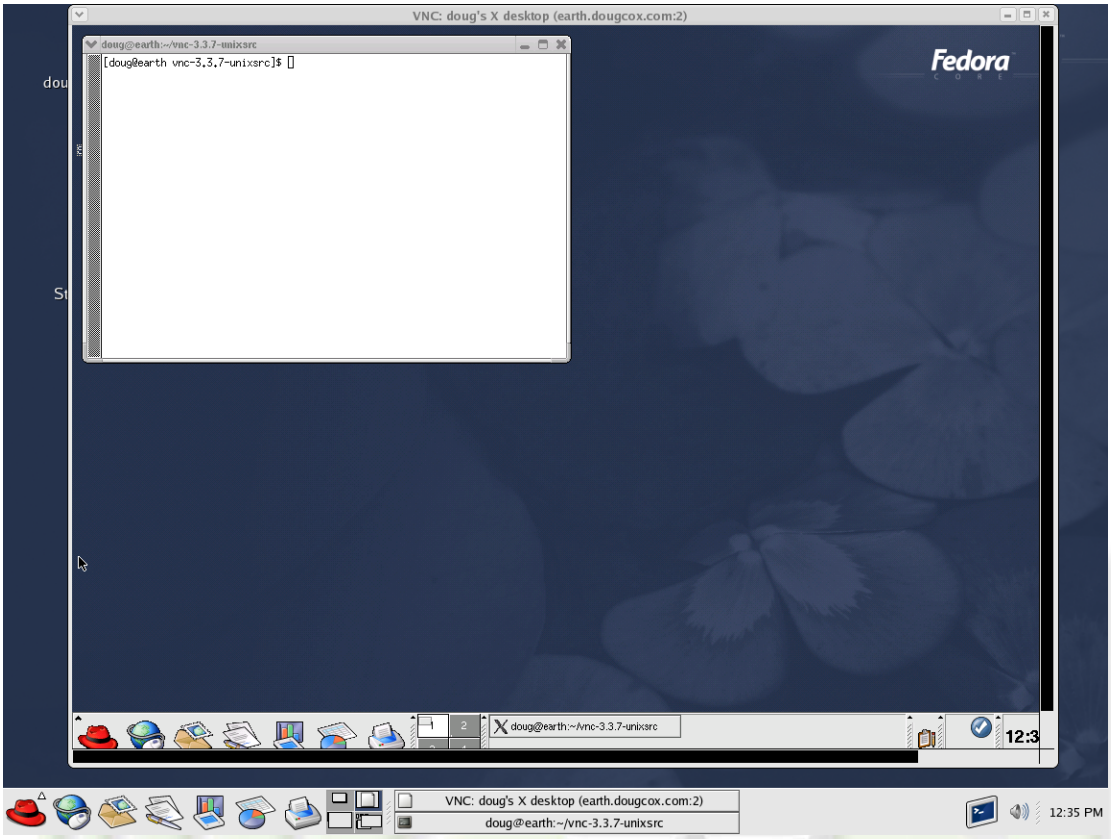
When the server Dialog box opens put in:

localhost:4



Enter Password

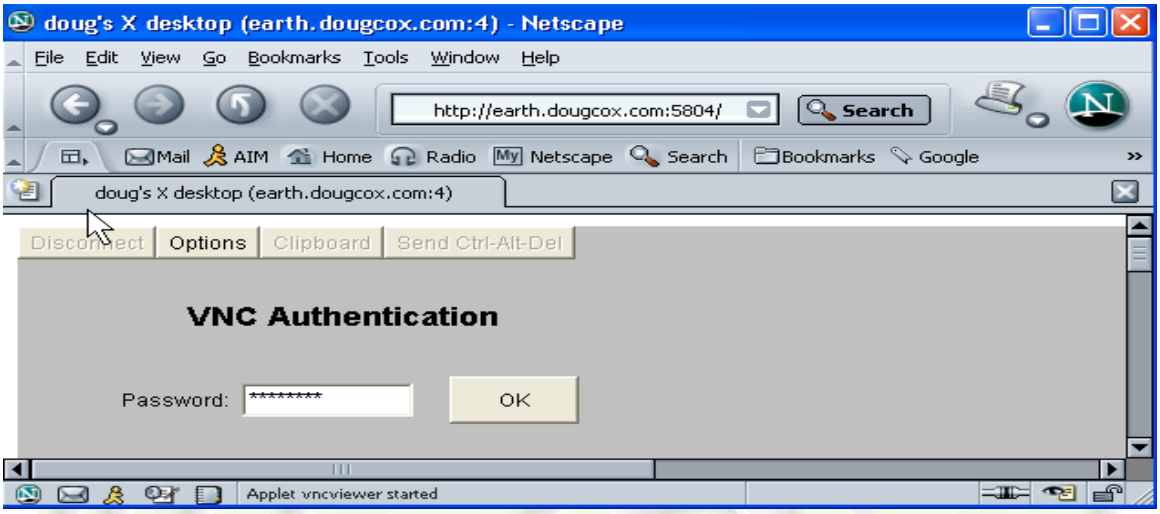
If all went well you should have another Desktop within your current desktop.



1) Why is this window different from the original Desktop?
2) Can this new window be shared by other clients?
3) Can you make it so only one remote client can access this desktop? (One at a time or only one IP or MAC address?)

Step 7: Connecting from a browser on a Windows machine

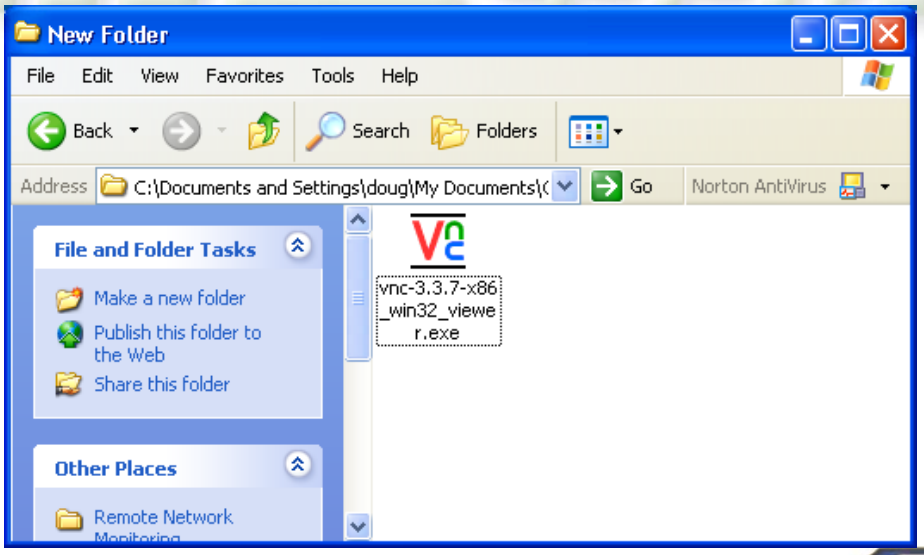
Open a browser to the address of the Linux machine
http://earth1.dougcox.com:5804
Enter password if you supplied one



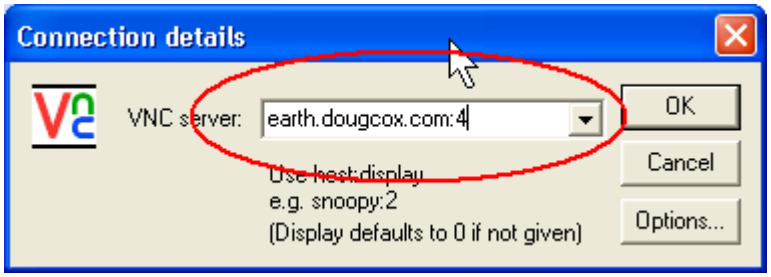
1) **What is the significance of :5804?**
2) **How many different users can attach to this system?**

Step 8: Using vnc viewer on a Windows machine

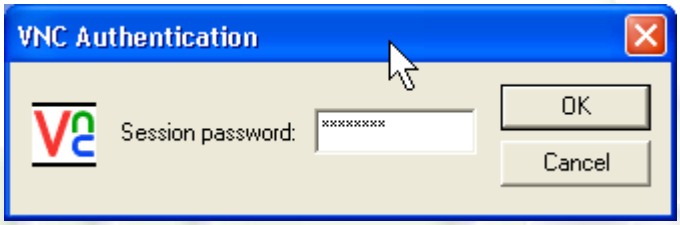
From the course CD, course server or the www.realvnc.com find vnc-3.3.7-x86_win32_viewer.exe



Open the viewer and enter the machine name and desktop you wish to attach. Then select *OK*.



At this point you will be asked for the password.

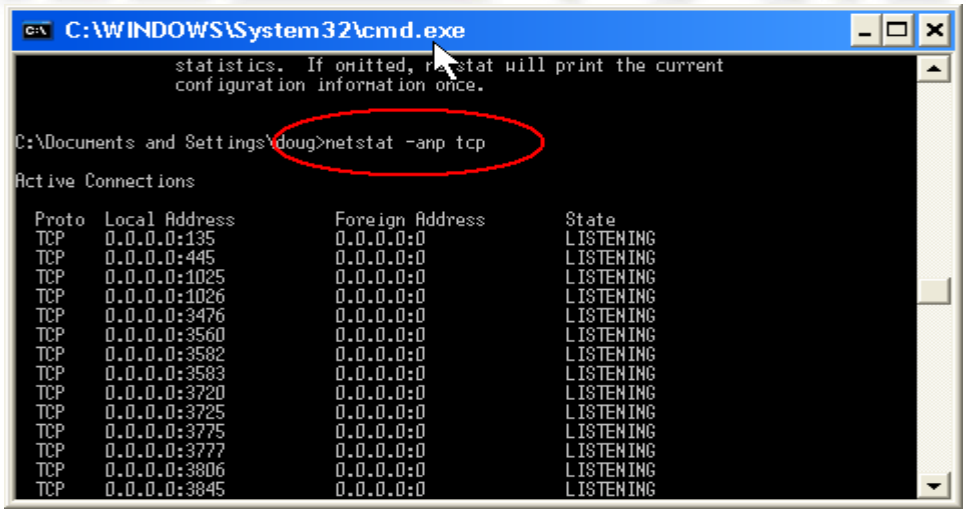


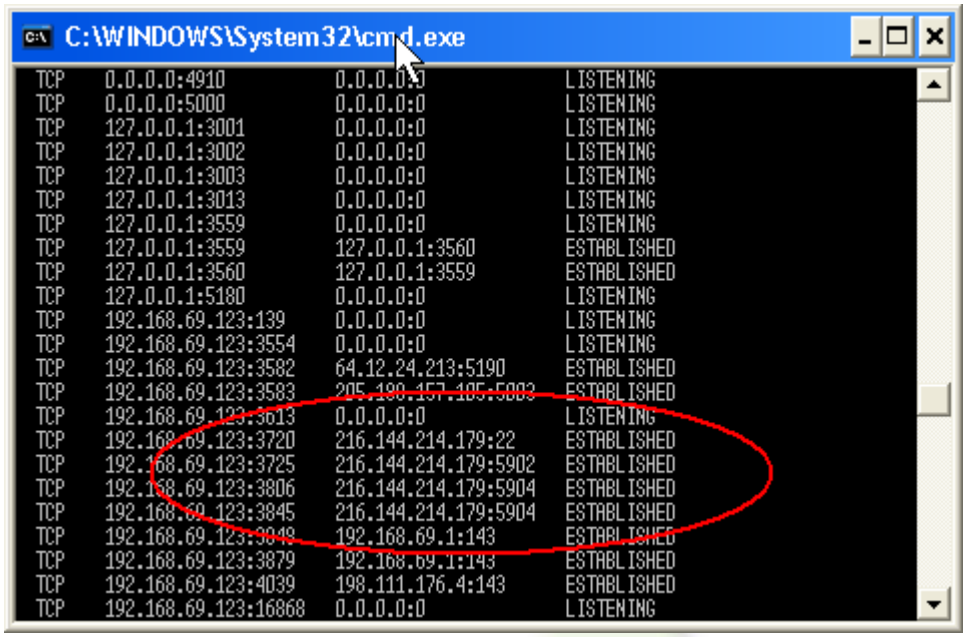
Enter the password and compare to the web session.

1) What port are you attaching to on the Linux box?
2) What port are you coming from on the Windows box?
3) How could this be helpful for desktop support?

Step 9: Verifying connections

On the Windows box issues the command: *netstat –anp tcp*

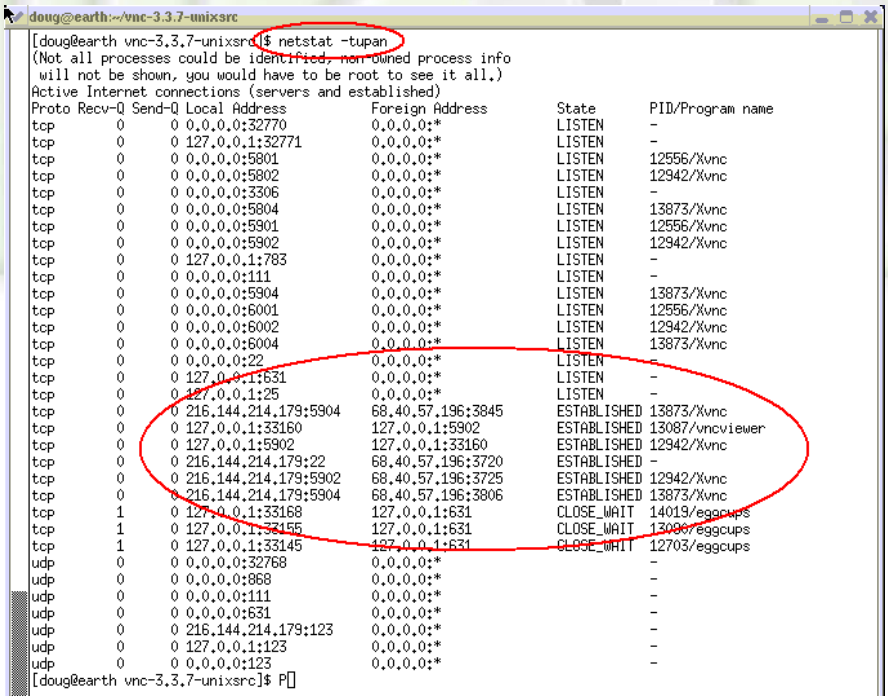




Find the connections to the vnc server.

1) Can you tell which viewing method the connection is? How? (viewer or browser)

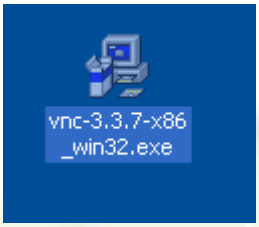
From the Linux box issue the command: *netstat –tupan*



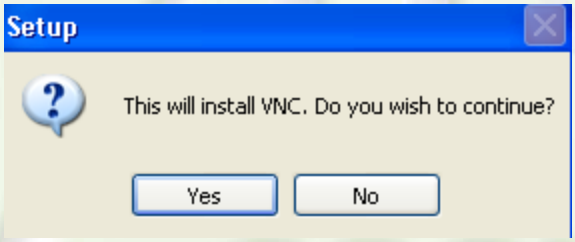
1) Can you tell how many sessions are open to the same desktop?
2) Connect from the browser and viewer and verify the server port connections 590x and 5800x.

Part II
Step 1: Installing vnc server on the Windows Platform

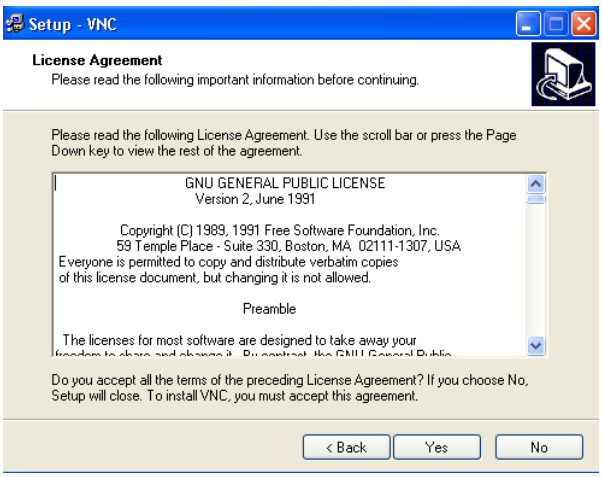
From the course CD, course server or the www.realvnc.com copy the vnc-3.3.7-x86_win32.exe to the desktop.



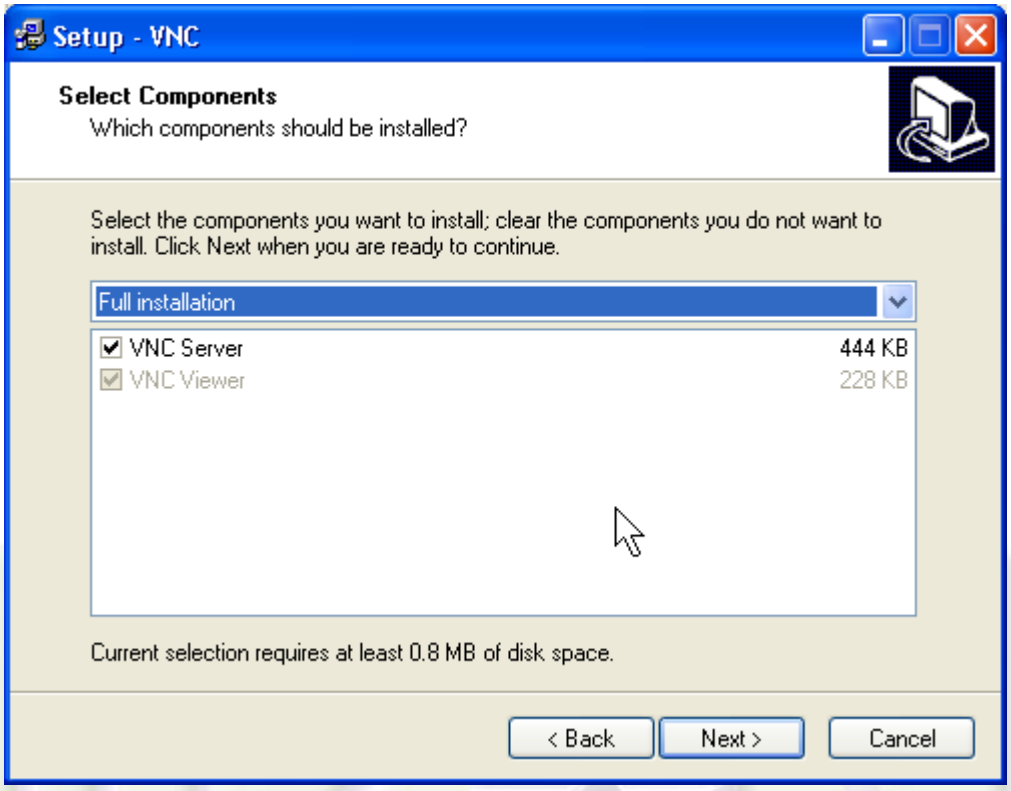
Open vnc-3.3.7-x86_win32.exe by double clicking.



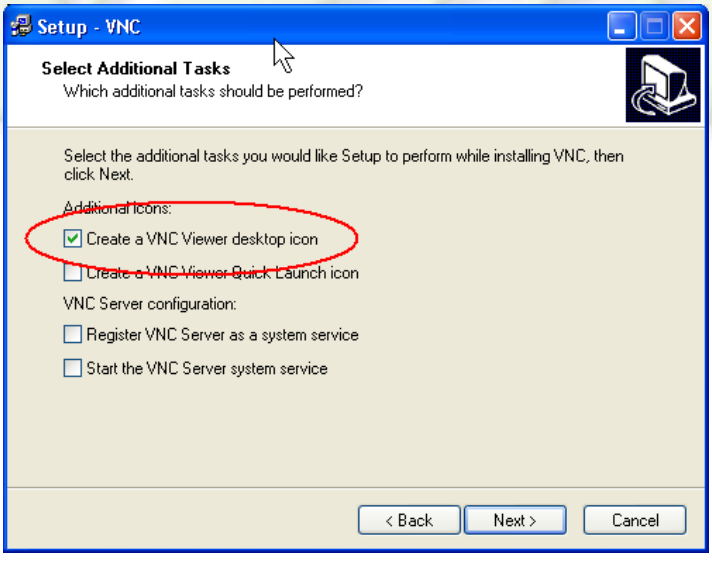
Click next
Agree to the license



Click next
Select server and full installation (default)

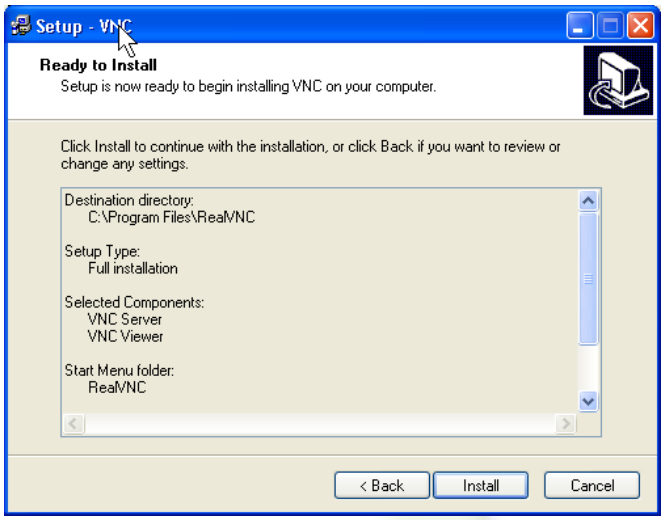


Click Next until you get to this screen
You may want to choose some of these options.

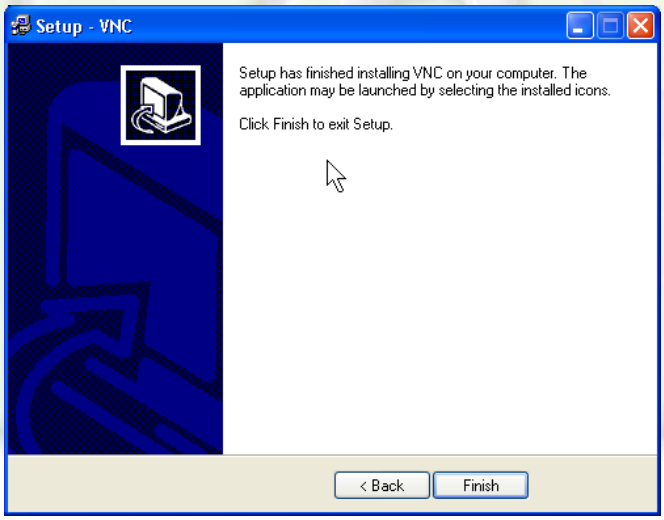


1) Why would you want to register as a service?

Finish the install.



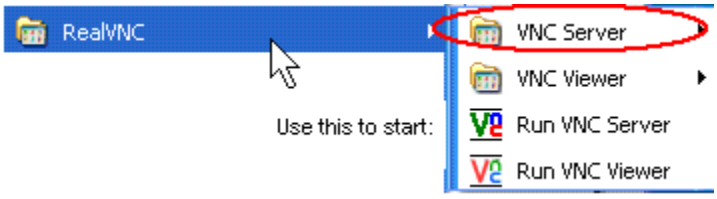
Review the information page



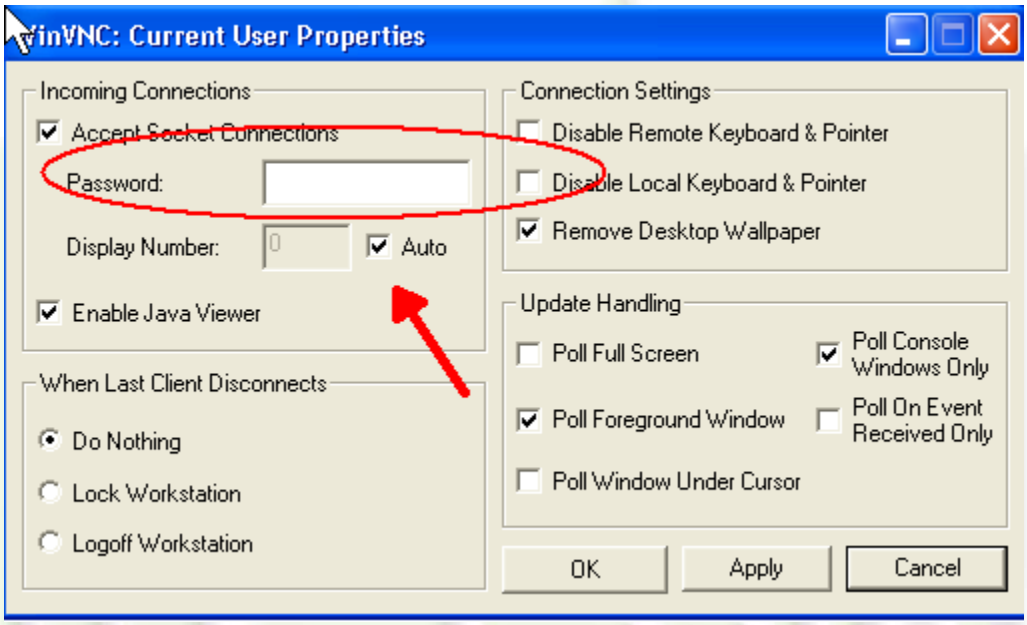
Finish

STEP 2: Start the server

Select start programs and find the vnc server:



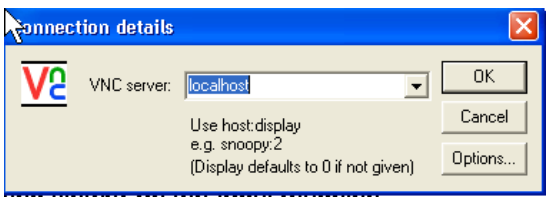
Configure the connection type
Set the password



1) How do these options compare to the Linux server options?
2) Why would you need to lock the workstation?
3) Why would you want to disable either the Remote or Local Keyboard & Pointer?
4) Explore the other options.

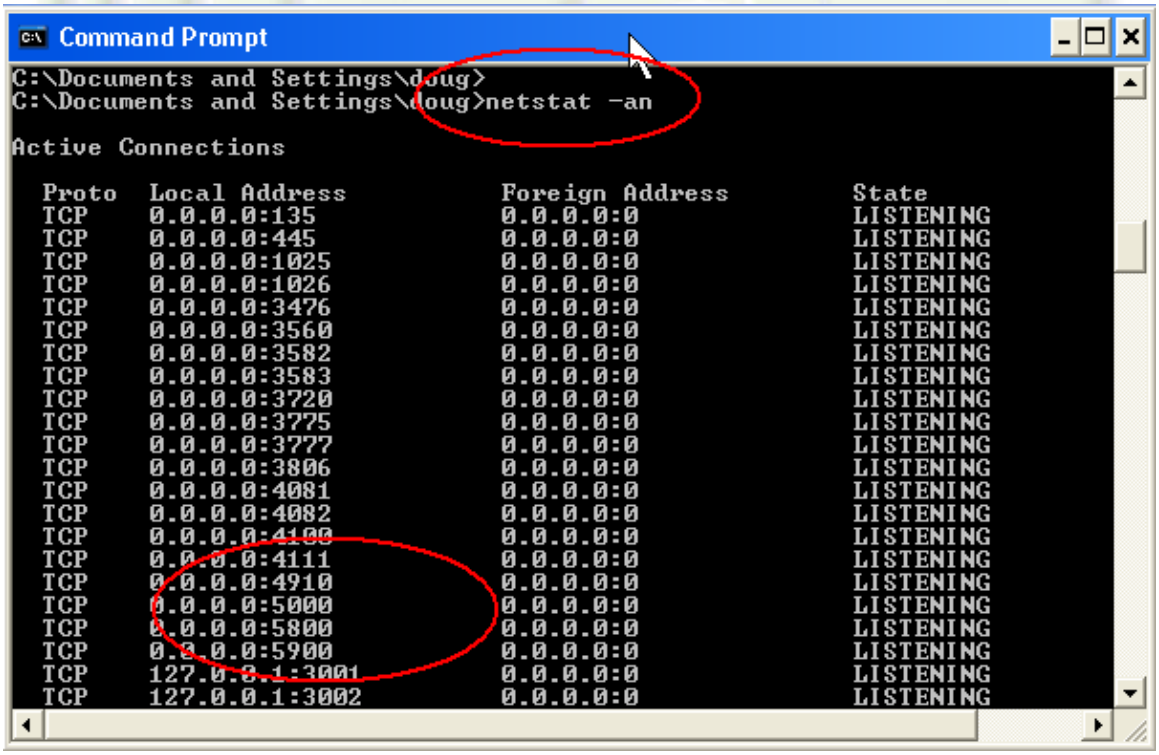
STEP 3: Attempt to connect to the localhost

Open the vnc viewer on the local machine



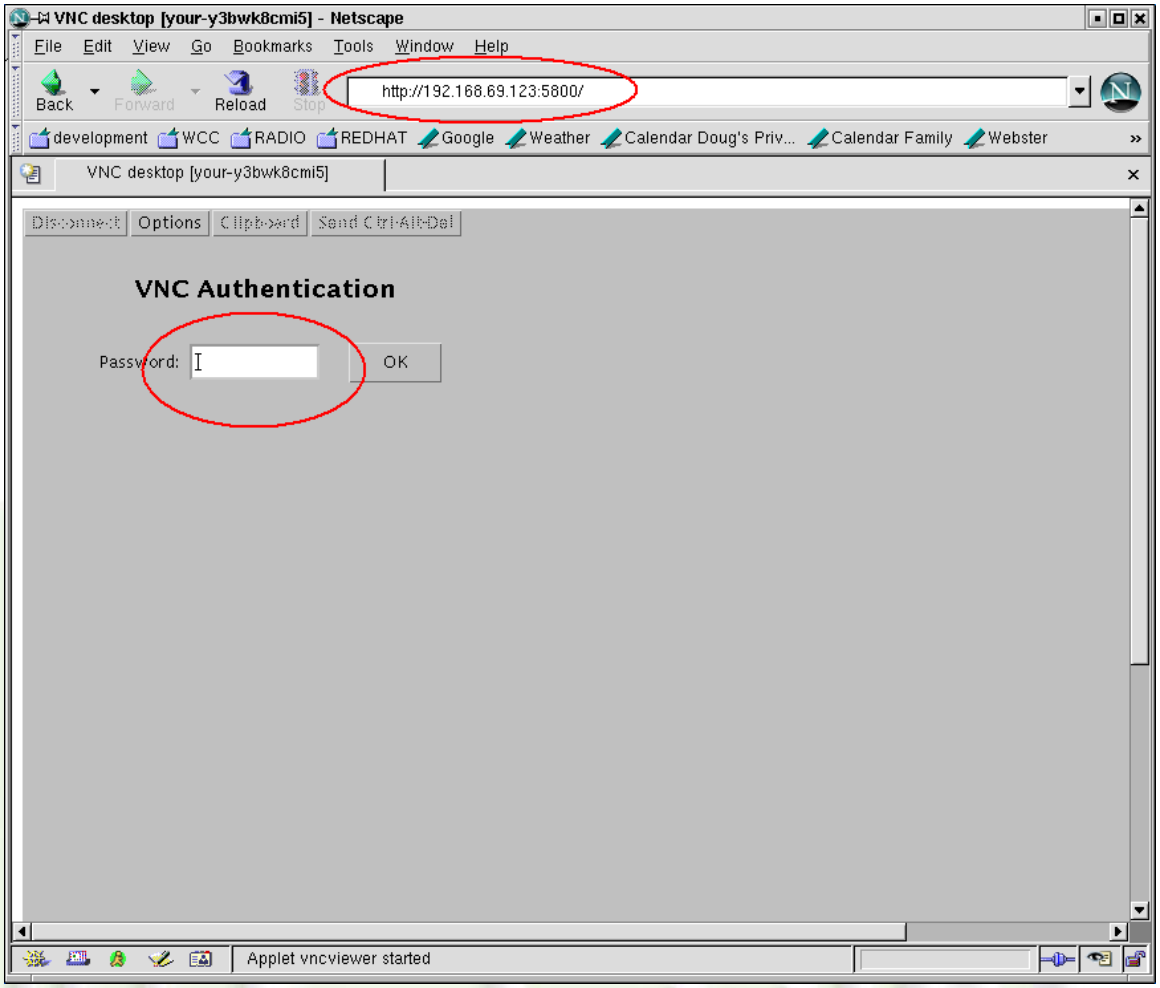
1) Why does the connection fail?
2) Discuss how this may prevent misuse of the server.
3) Can you use the browser to connect?
   Hint use localhost:5800

STEP 4: Verify server started

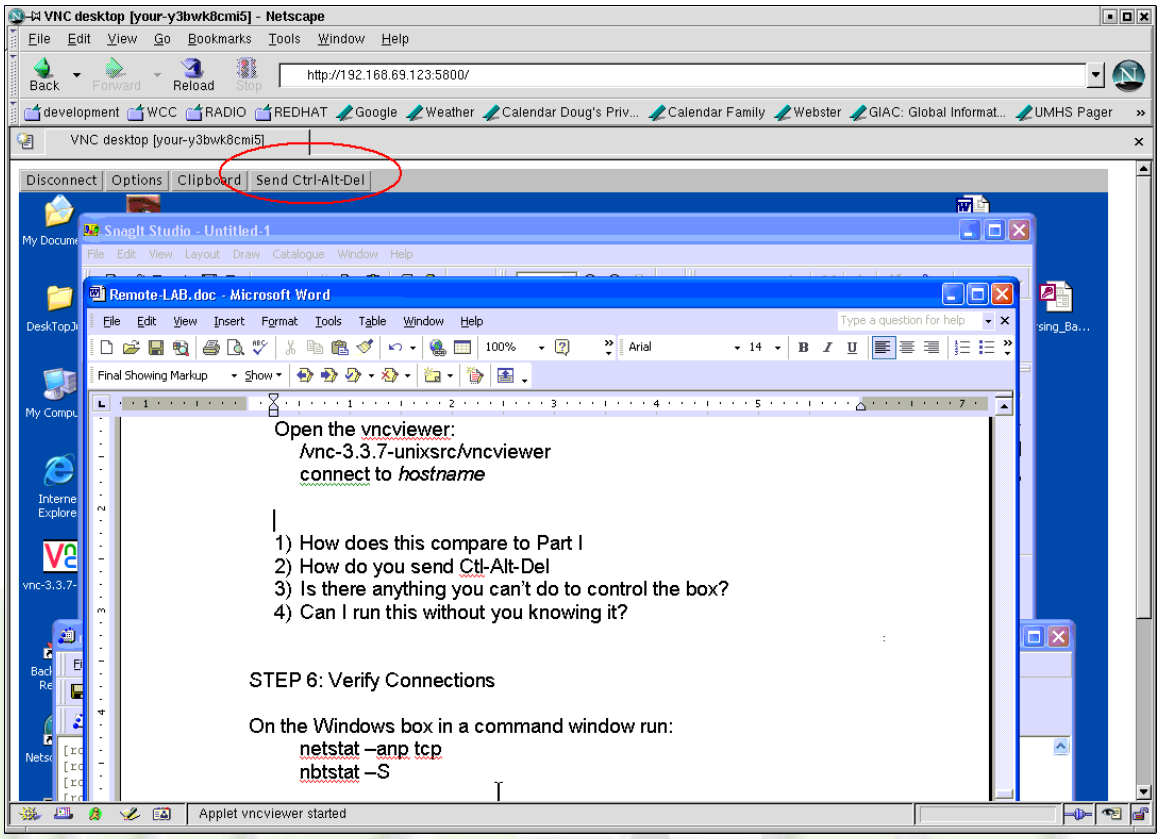


STEP 5: Connect from a Linux box

Open a browser and connect to *http://hostname:5800*



Enter the password

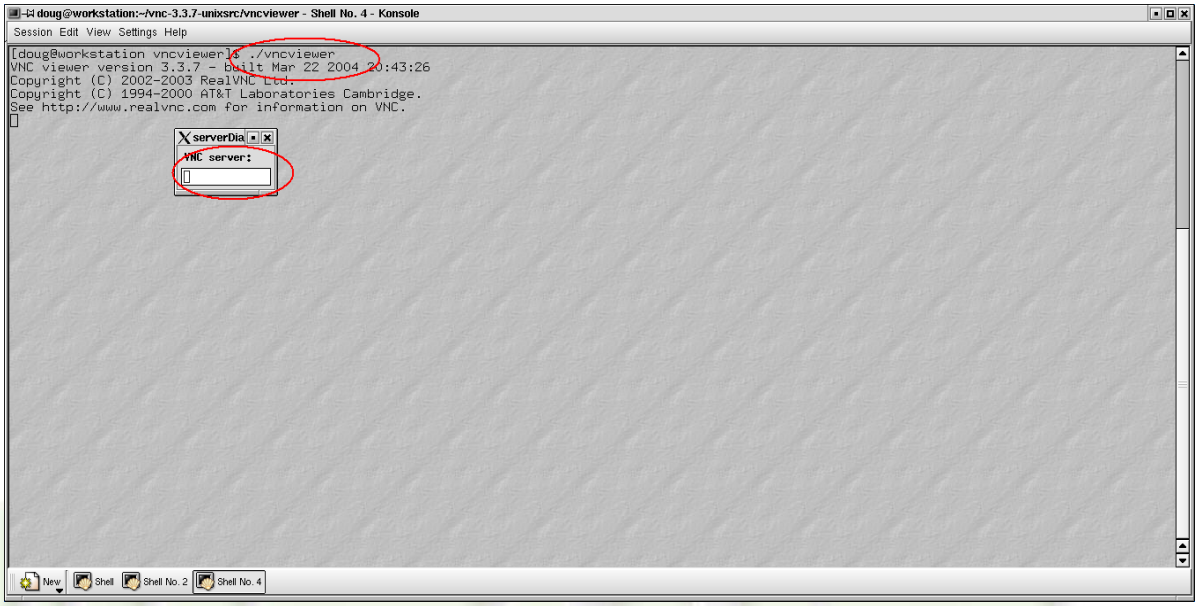


1) Why is 5800 used for the port number?
2) What would happen if you used 5804?
3) Can you change this port number?

Open the vncviewer:

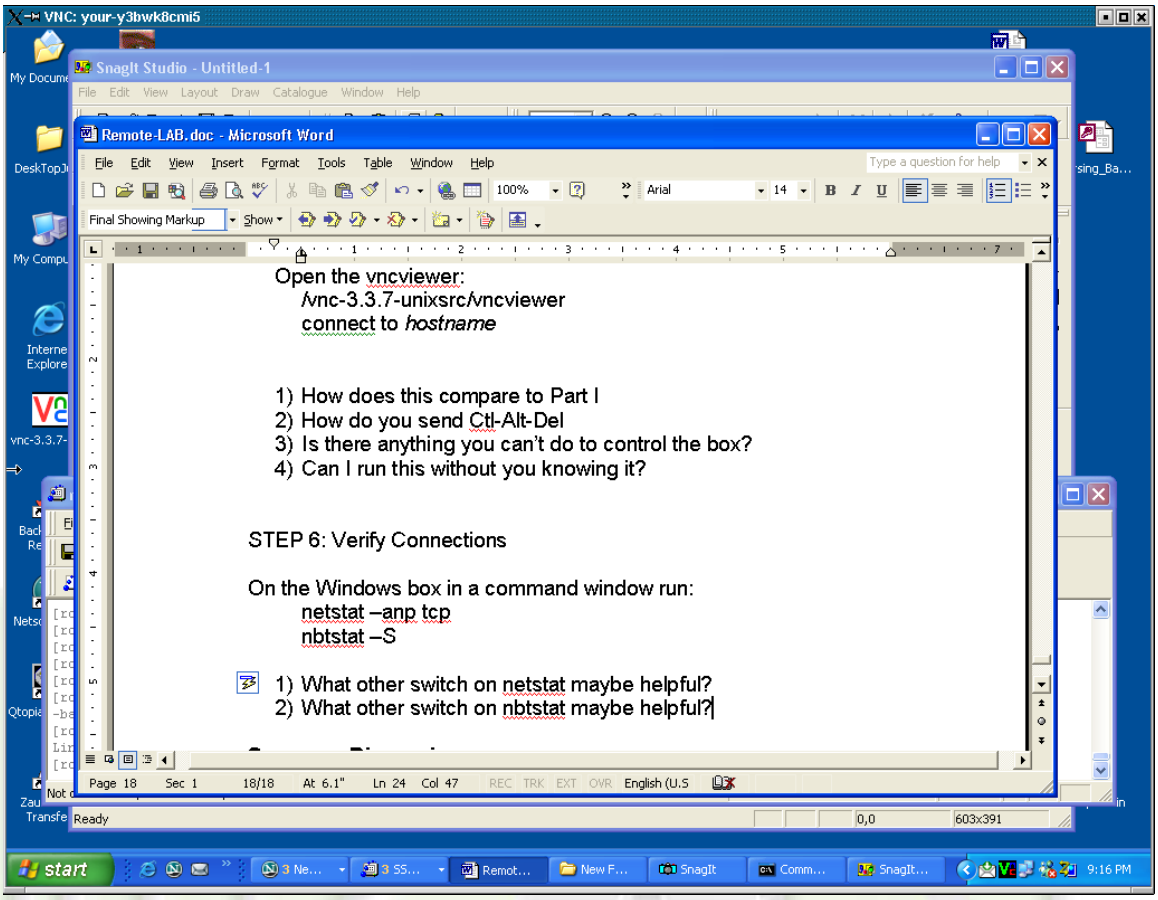
/vnc-3.3.7-unixsrc/vncviewer/vncviewer

Connect to *hostname*



Enter password

Are you connected?

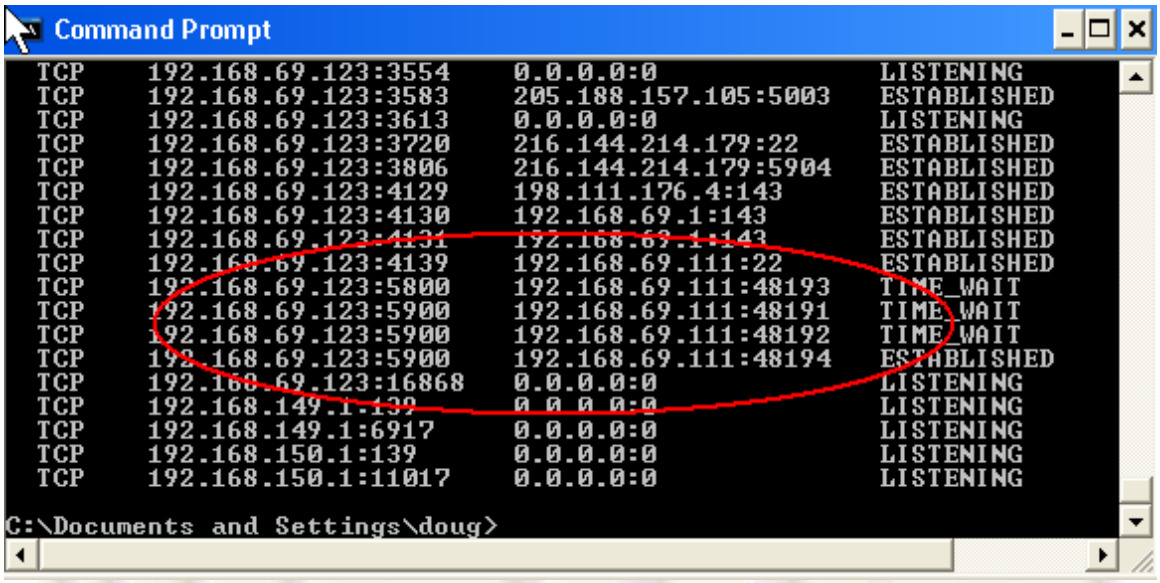


1) How does this compare to Part I
2) Do you need a Desktop number?
3) How do you send Ctl-Alt-Del
4) Is there anything you can't do to control the box?
5) Can I run this without you knowing it?

STEP 6: Verify Connections

On the Windows box in a command window run:

netstat –anp tcp



1) What other switch on netstat maybe helpful?
2) What are the connected ports?
3) Is nbtstat useful in this case?
4) Can realvnc transfer files? Is there a version that can?

CHALLENGE

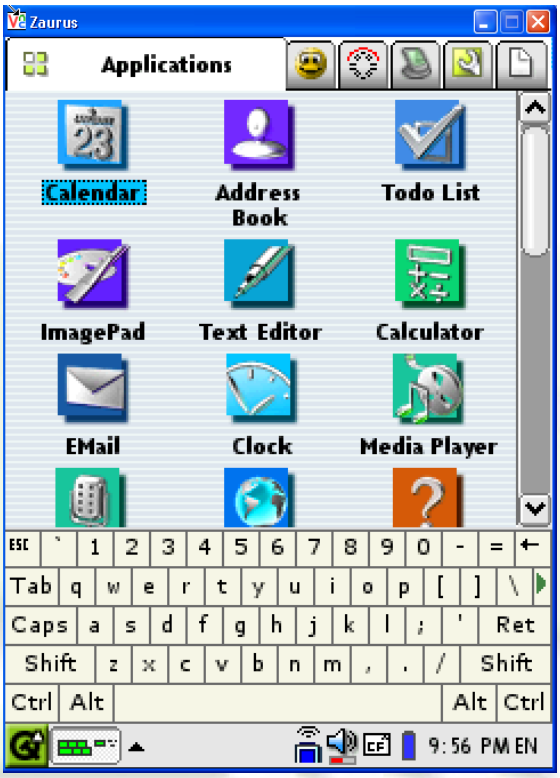
Configure two machines as both client and server then connect to each other. What happened? What did you expect?

Configure vnc to use an ssh tunnel.

Summary Discussion

This lab is a practical exercise using realvnc to connect cross platform. Try to connect Windows to Windows and Linux to Linux with both the viewer and browser.

VNC is available on many platforms. It can be used as an administration tool or remote access. Here is an example of connecting from a Windows box to a Zaurus.



There are versions out for PocketPC and Palm OS. Additionally there are several companies that make enhancements to the original product. They will allow for PC control of the PDA and give you full size screen and keyboard.

Appendix:

This lab was developed using VNC 3.3.7. The latest version as of this writing is version 4.1.1, which can be obtained from,

www.realvnc.com

The OS environment for this lab was Windows XP Professional, Version 2002, Service Pack 2 (8/04).