

7.6.1

WINDOWS XP VPN

SERVER AND CLIENT



Objective

At the end of this lab students will be able to configure a Windows XP computer as a Virtual Private Network (VPN) Server and Client. Students will be able to connect Windows XP clients to a VPN Server.

Information for Laboratory

- A. Students will utilize Microsoft Windows XP built in VPN Networking

Student Preparation

The student will have completed requisite reading. The student will require paper for notes and should be prepared to discuss the exercises upon completion.

You will need a partner or two networked computers. You will need to set up a VPN between your computers and then delete the VPN.

Estimated Completion Time

60 Minutes



Virtual Private Networks



A virtual private network (VPN) is the extension of a private network that encompasses links across shared or public networks like the Internet. A VPN enables you to send data between two computers across a shared or public internetwork in a manner that emulates the properties of a point-to-point private link.

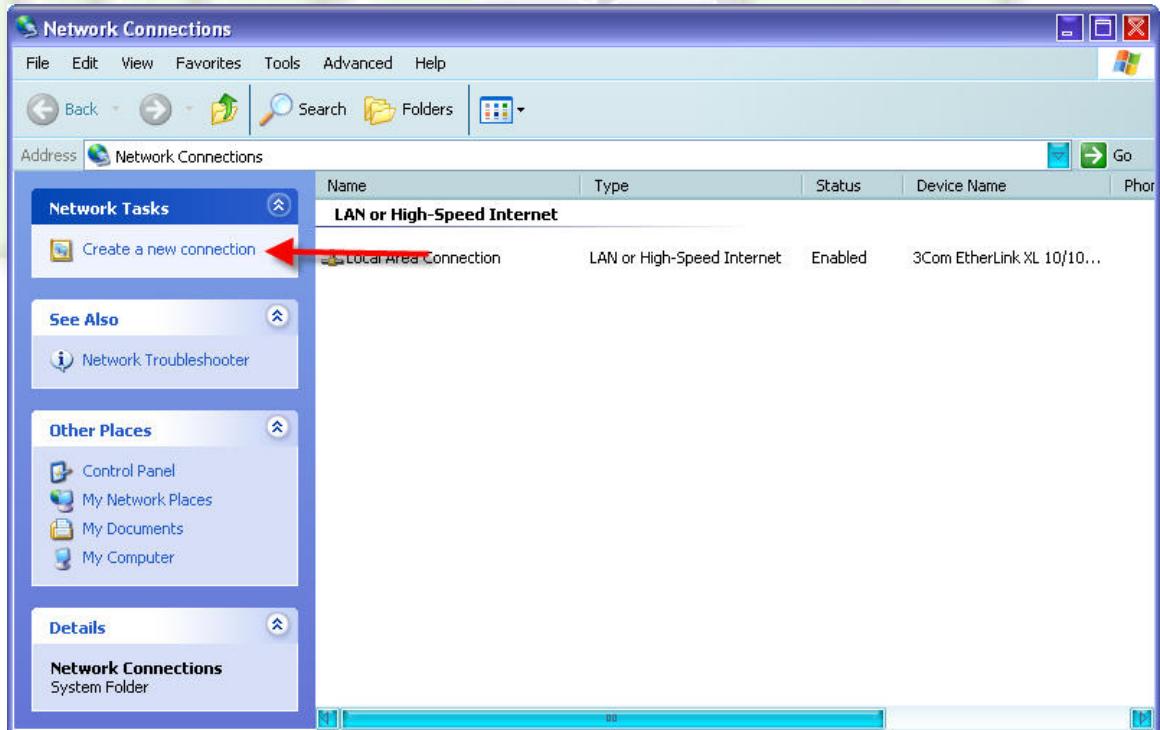
VPN's with Windows XP

Students will use Windows XP built in Virtual Private Network PPTP Server and Client to show how VPN's can be built in a public network environment such as the Internet.

Step 1: Create the VPN Server Connection (Computer A)

From your desktop, right click My Network Places, and click on Properties. This will open the Network Connections page.

From the Network Connections Page, click on Create a new connection from the Network Tasks on the left side as below.

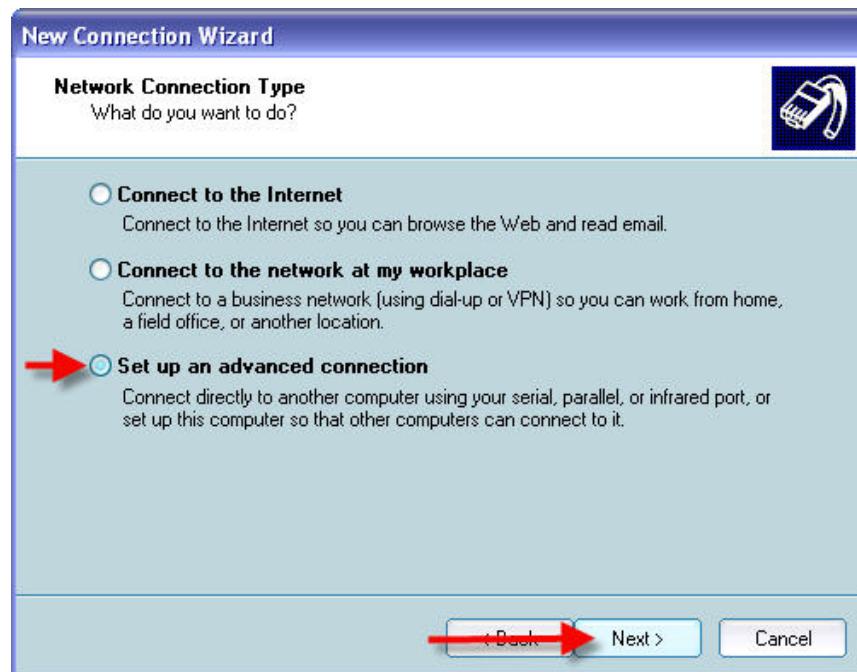


This will launch the New Connection Wizard, click Next to proceed as below.

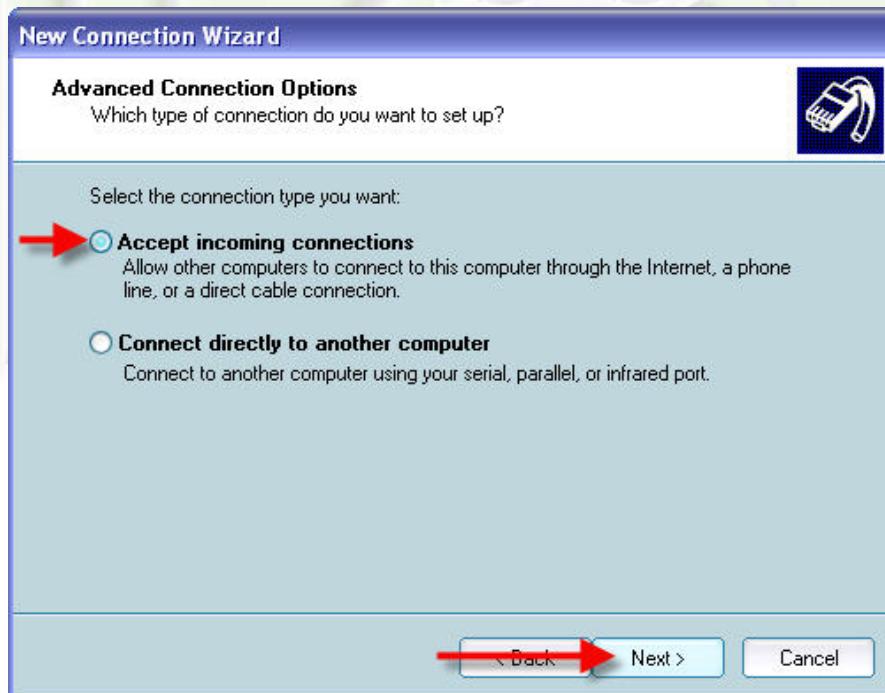


Select the option to Set up an advanced connection, and click Next as shown below.



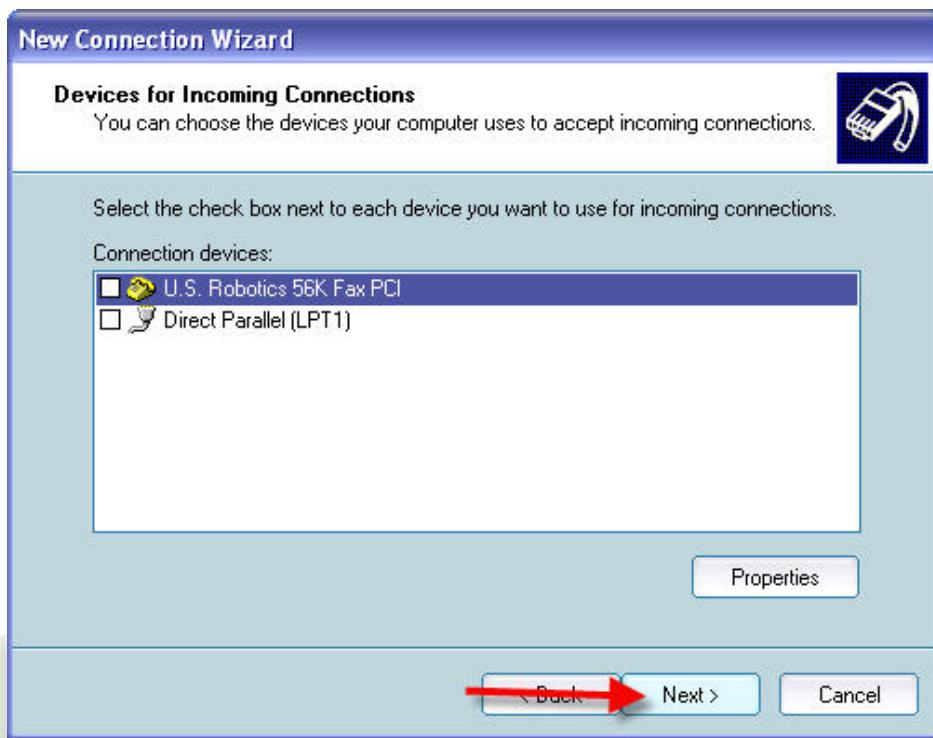


Select the option to Accept incoming connections and click Next as shown below.

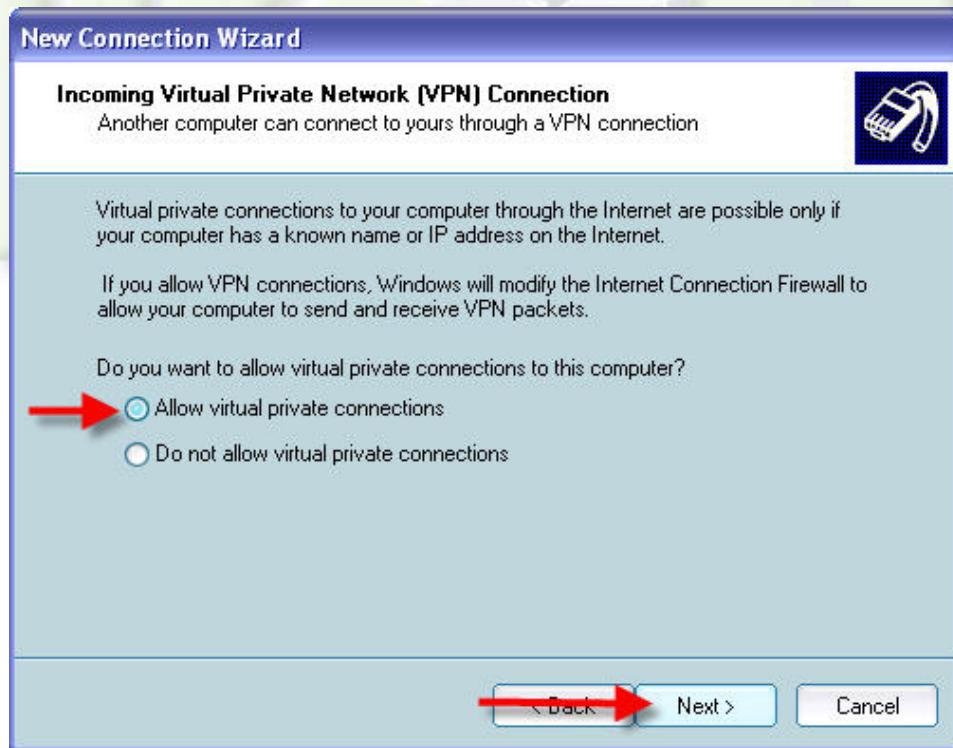


Ignore the Devices for Incoming Connections, as we are using the network card and TCP/IP. Click Next as below without modifying anything on this page.

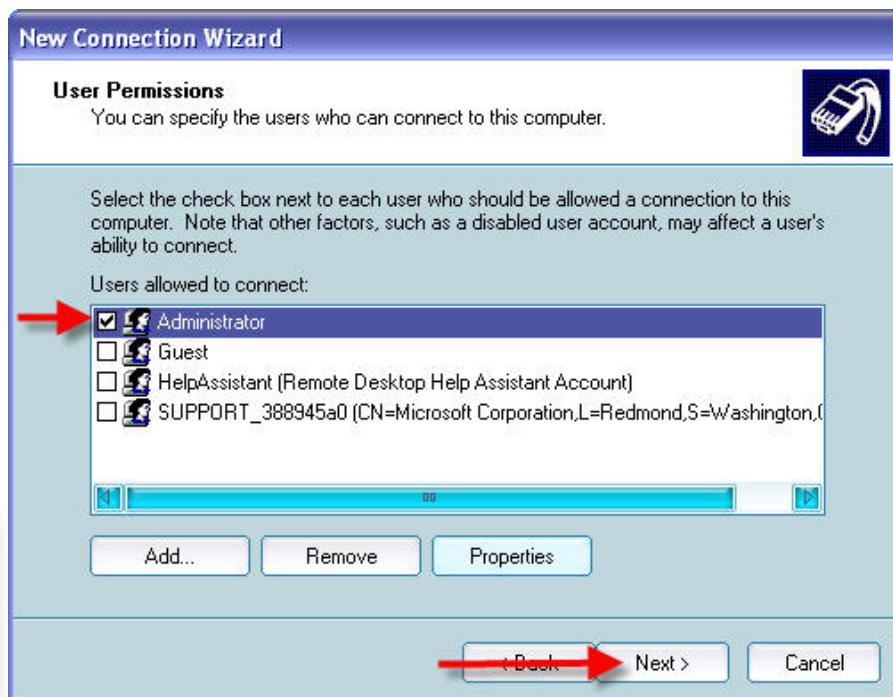




Choose the option to Allow virtual private connections and click next as shown below.

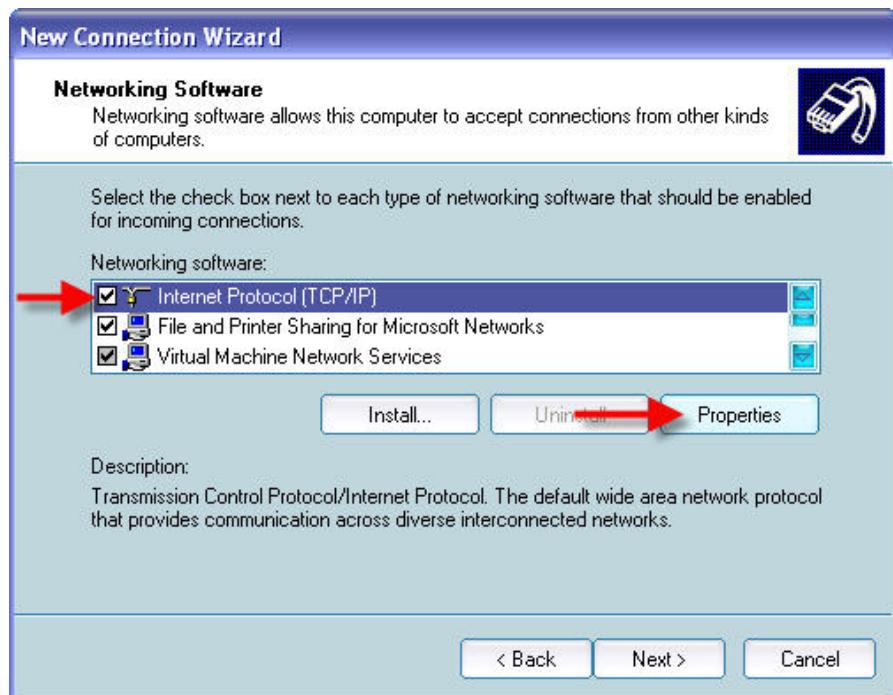


Select the Administrator account, or any other account that has administrative rights of the computer to use as the account to connect to the computer, and click next as shown below.



Make sure that Internet Protocol (TCP/IP) is selected, and click properties, as shown below.





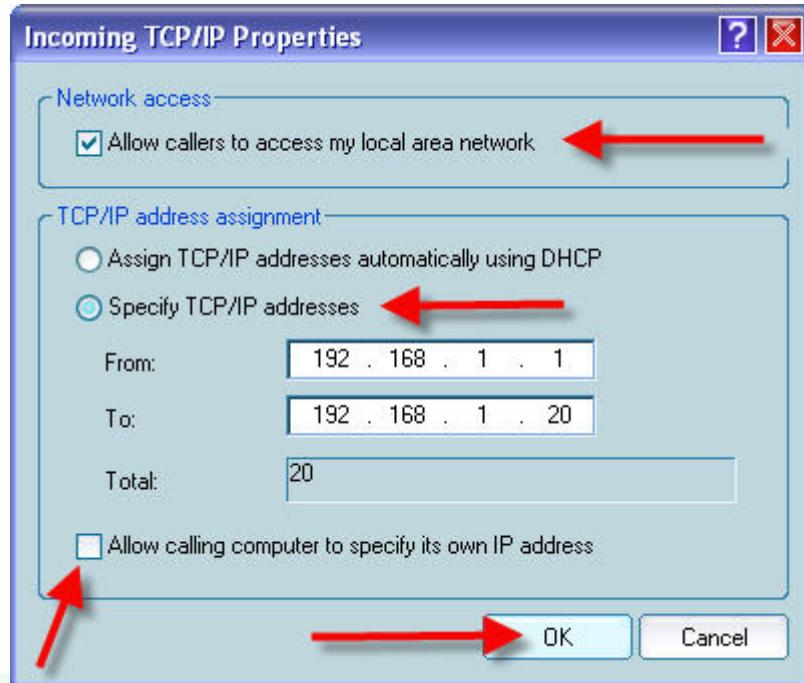
From the properties page, Network access, Allow callers to access my local area network should be selected. TCP/IP address assignment needs to be setup to automatically assign IP addresses to connecting computers. Choose the Specify TCP/IP addresses option, and use the following IP addresses...

From: 192.168.1.1
To: 192.168.1.20

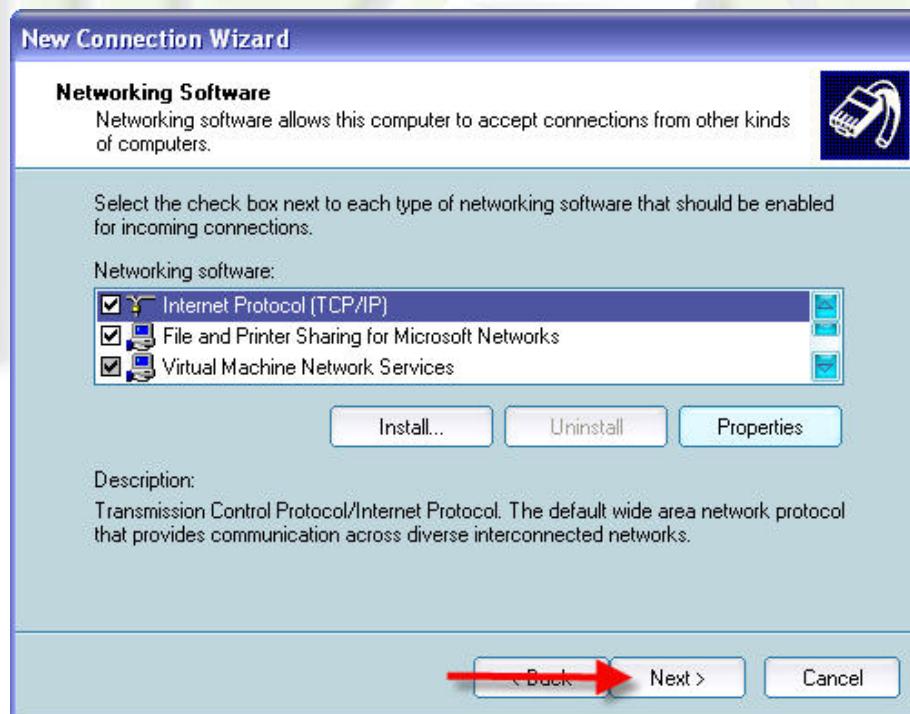
Make sure that the Allow calling computer to specify its own IP address is not selected.

Check the example shown below to make sure your TCP/IP settings are correct, and click OK.





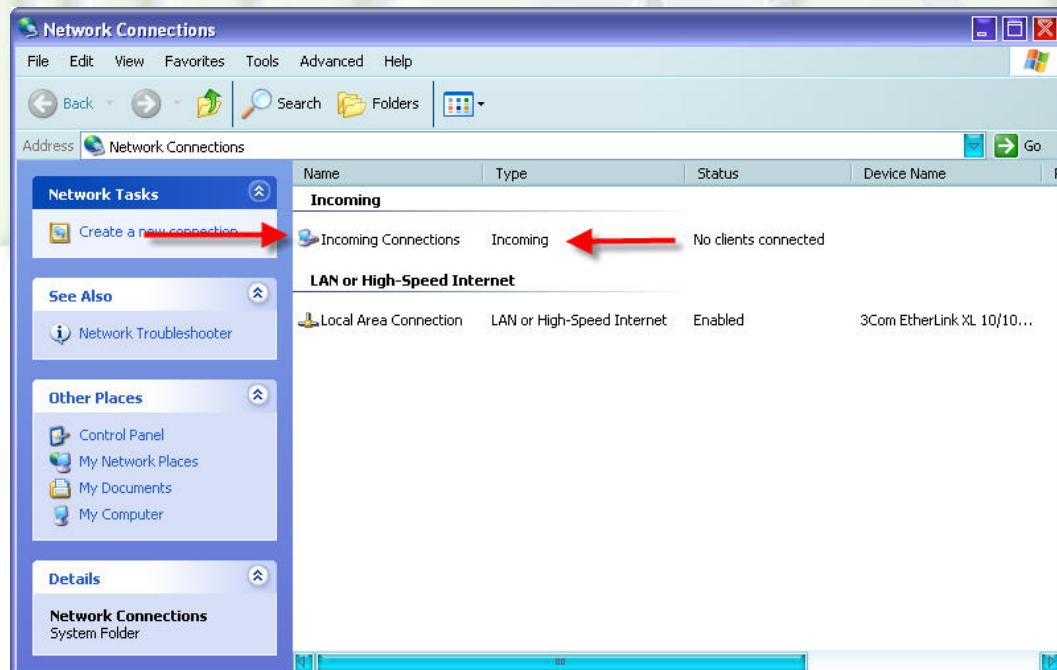
After specifying the TCP/IP settings, click Next on the Networking Software page, as shown below.



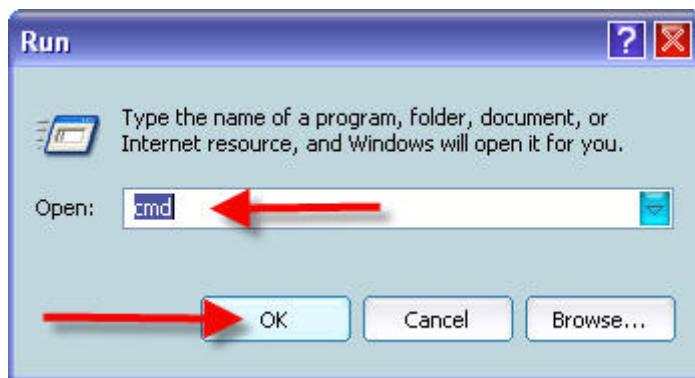
Click Finish on the Completing the New Connection Wizard, as shown below.



Go back to the Network Connections page. You should now see that you have an Incoming Connections setup, as shown below.



From START, Run, enter 'cmd' and click ok



At the command prompt type 'ipconfig' to view your current IP address. This is the address in which the clients will use to connect.

A screenshot of a Windows Command Prompt window titled 'D:\WINDOWS\System32\cmd.exe'. The window shows the command 'ipconfig' being typed at the prompt. The output displays network configuration for an 'Ethernet adapter Local Area Connection'. A red arrow points to the 'ipconfig' command. Another red arrow points to the 'IP Address' line in the output, which shows '10.0.0.245'.

```
D:\WINDOWS\System32\cmd.exe

U:\>ipconfig ←
Windows IP Configuration

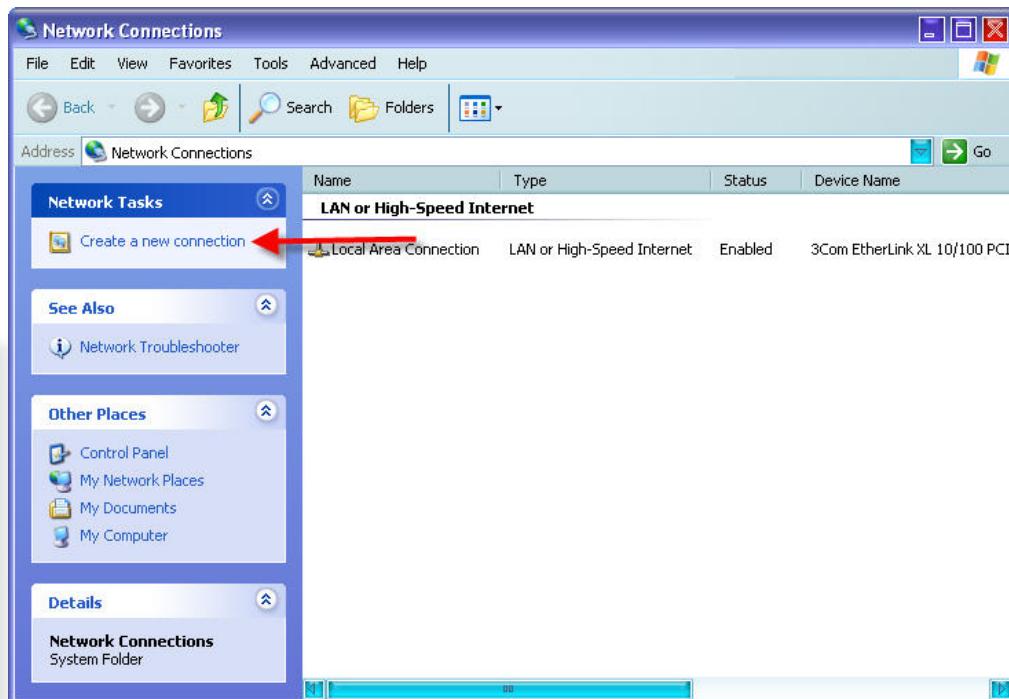
Ethernet adapter Local Area Connection:
  Connection-specific DNS Suffix  . : 10.0.0.245
  IP Address . . . . . : 10.0.0.245
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 10.0.0.1

U:\>
```



Step 2: Creating the VPN Client connection (Computer B)

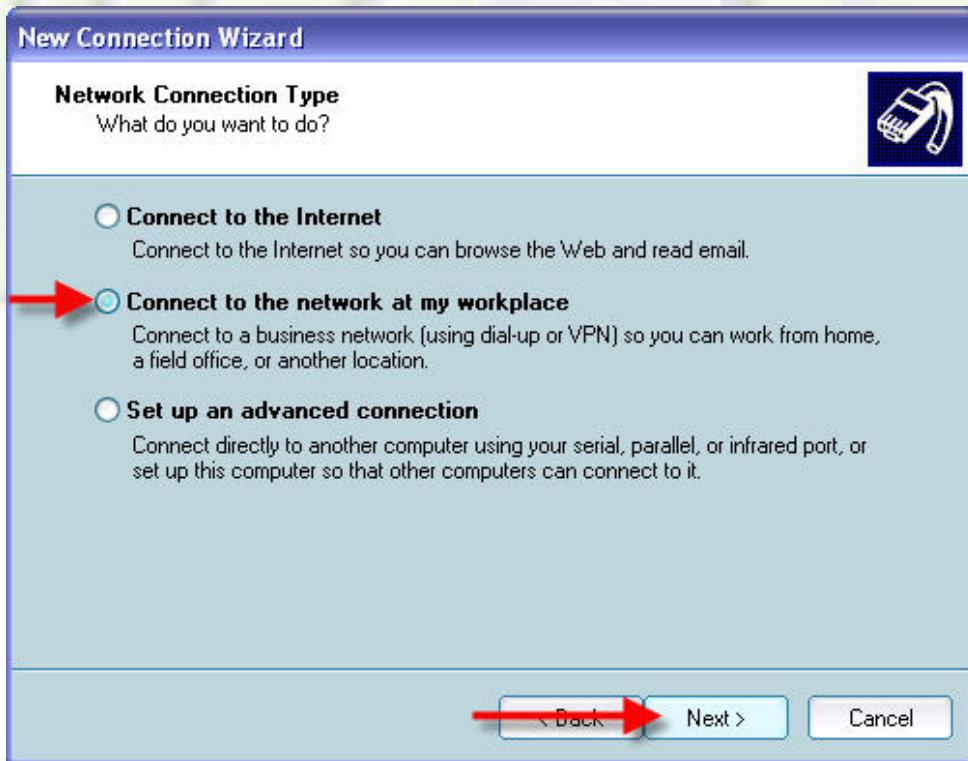
From your partners computer, From the desktop, right click on My Network Places, and click properties. This will open the Network Connections page. From the Network Connections page, click on Create a new connection from Network Tasks on the left side, as show below.



This will launch the New Connection Wizard, click next to continue, as below.



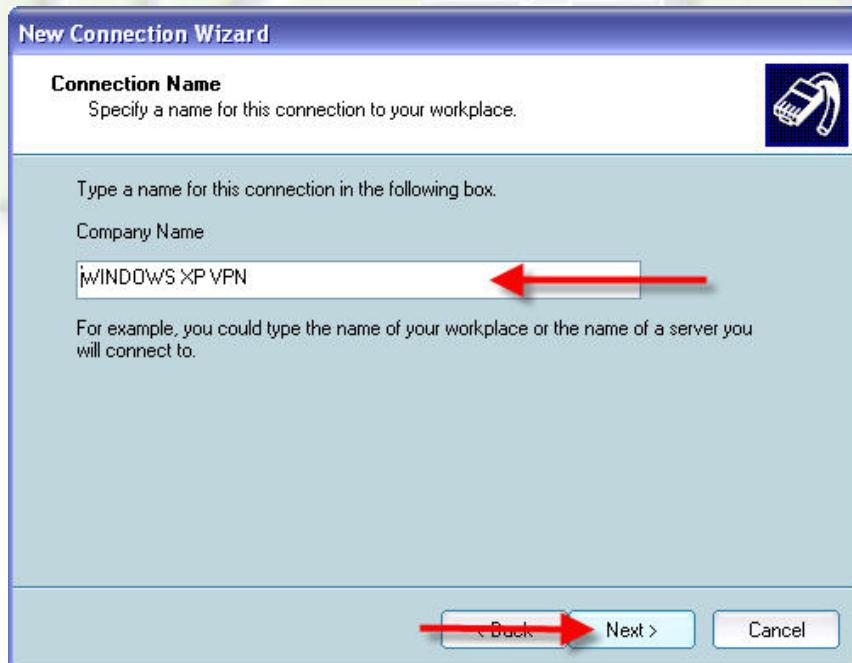
From the Network Connection Type page, choose to Connect to the network at my workplace and click next, as shown below.



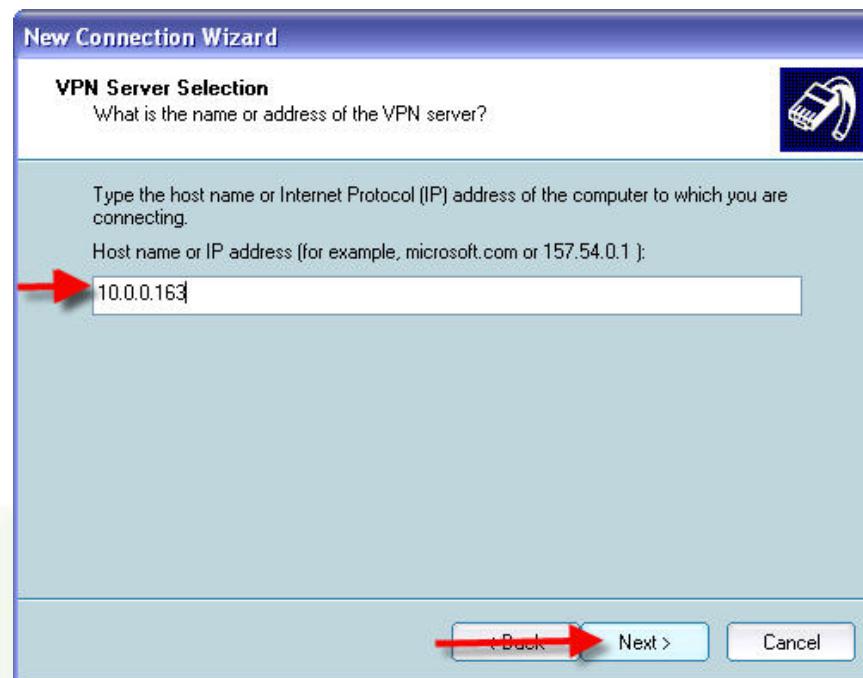
From the Network Connection page, choose Virtual Private Network connection, and click next as below.



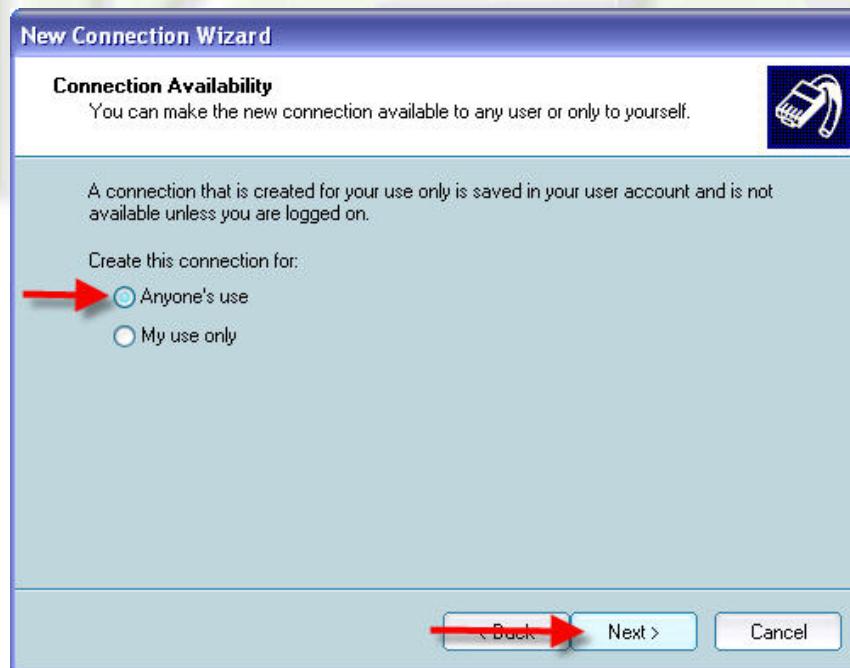
Enter a name for the connection in the Company Name box, and click next, as below.



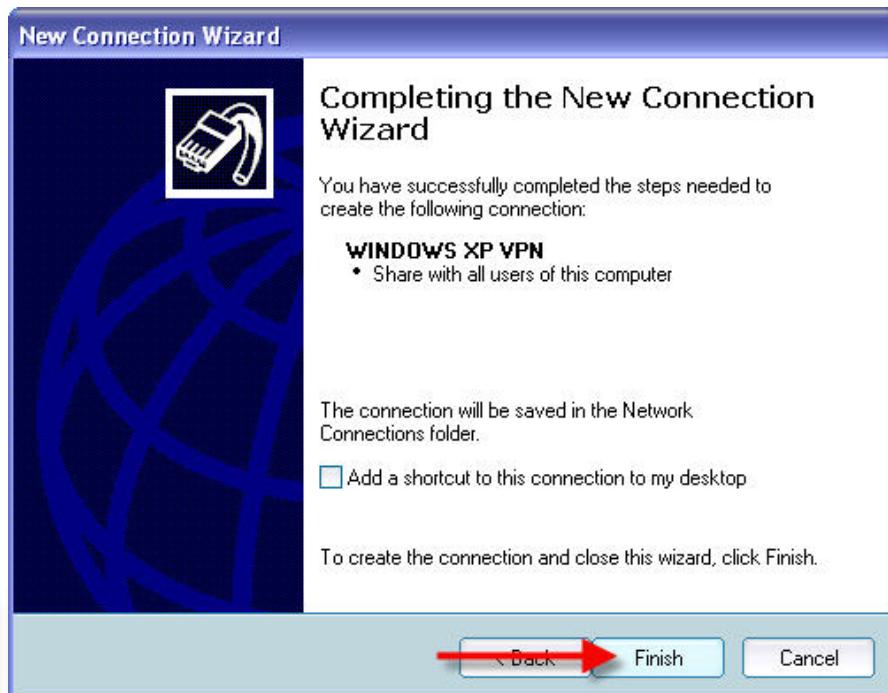
Enter the IP address of the VPN server from Part I, in the Host name or IP address box from the VPN Server Selection page, as below.



Choose Anyone's use from the Connection Availability page, and click next as shown below.



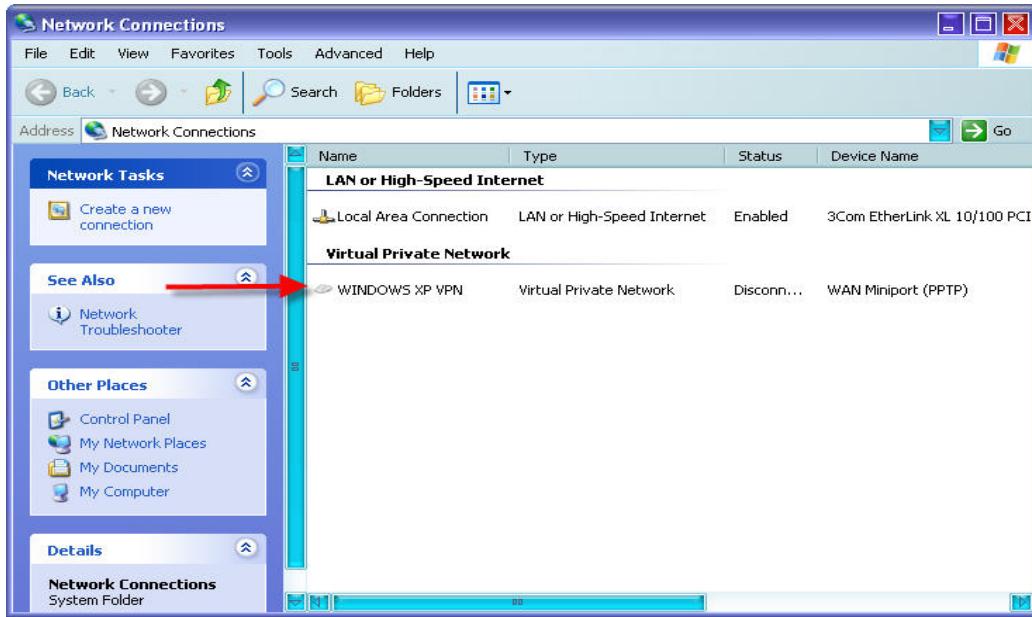
Click Finish to complete the connection setup, as below.



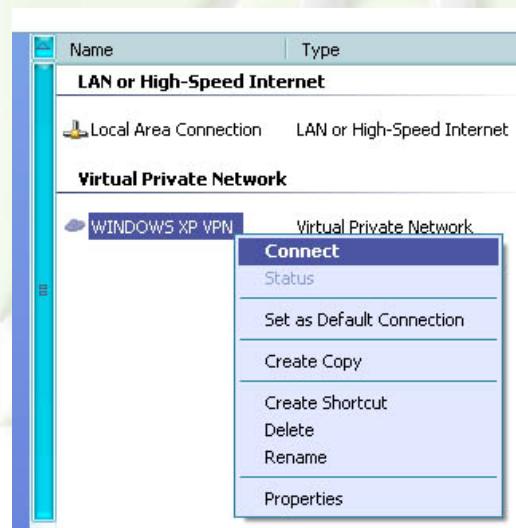
STEP 3: Connecting to the VPN Server from the Client

From the Client computer, from the desktop, right click on My Network Places, and click properties. This will open the Network Connections page. From here, you should see your new Virtual Private Network listed, as below.





Right click on the VPN connection 'Windows XP VPN' and click Connect, as below.



Enter the User name and Password and click Connect as below.



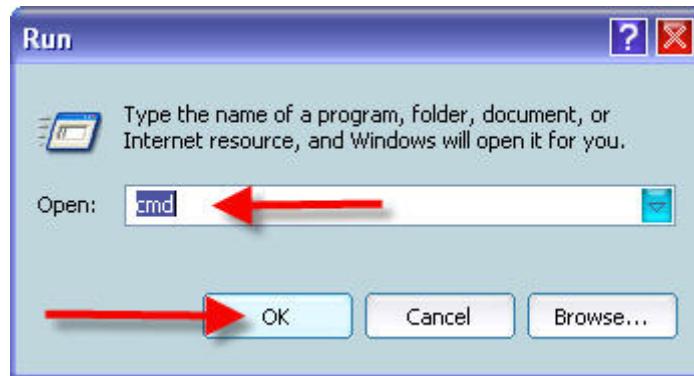
If all steps were followed correctly, you will see the following message...



After a few seconds, you will be connected to the VPN server. On the taskbar, you will see another icon for a network connection. If you hold the mouse over it, it will display the following information...



While still connected, from START, Run, enter 'cmd' and click OK.



At the command prompt type 'ipconfig /all' to view your current IP address information. Notice the IP address for your VPN connection is 192.168.x.x.

A screenshot of a Windows Command Prompt window titled "D:\WINDOWS\system32\cmd.exe". The window displays the output of the "ipconfig /all" command. The output shows various network configurations, including the "Ethernet adapter Local Area Connection" and the "PPP adapter WINDOWS XP UPN". A red arrow points to the "PPP adapter" section. Another red arrow points to the "Physical Address" line under the "PPP adapter" section, which is listed as "00-50-04-61-1B-0D".

```
D:\WINDOWS\system32\cmd.exe
U:\>ipconfig /all
Windows IP Configuration

Host Name . . . . . : 
Primary Dns Suffix . . . . . : 
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : 

Ethernet adapter Local Area Connection:

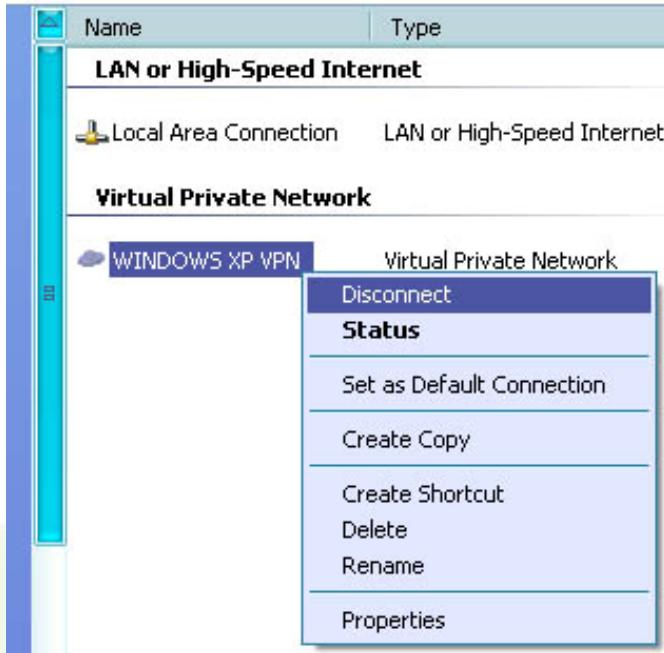
  Connection-specific DNS Suffix . . . . . : 3Com EtherLink XL 10/100 PCI TX NIC
  Description . . . . . : 3Com EtherLink XL 10/100 PCI TX NIC
  (3C905B-TX)
  Physical Address. . . . . : 00-50-04-61-1B-0D
  Dhcp Enabled. . . . . : No
  IP Address. . . . . : 10.0.0.245
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 10.0.0.1
  DNS Servers . . . . . : 10.0.0.30
                                         10.0.0.32

PPP adapter WINDOWS XP UPN: <-- Red arrow here

  Connection-specific DNS Suffix . . . . . : WAN <PPP/SLIP> Interface
  Description . . . . . : WAN <PPP/SLIP> Interface
  Physical Address. . . . . : 00-53-45-00-00-00
  Dhcp Enabled. . . . . : No
  IP Address. . . . . : 192.168.1.2
  Subnet Mask . . . . . : 255.255.255.255
  Default Gateway . . . . . : 192.168.1.2
  DNS Servers . . . . . : 10.0.0.30
                                         10.0.0.32
  Primary WINS Server . . . . . : 10.0.0.30
  Secondary WINS Server . . . . . : 10.0.0.32

U:\>
```

From Network Connections, Right click on the VPN Connection 'WINDOWS XP VPN' and click disconnect, as shown below.



Right click on the VPN connection 'WINDOWS XP VPN' and click delete. After the VPN connection has been deleted, close all other windows.

Analysis:

- 1) For which applications are VPN's best suited?
- 2) After working with these utilities, what about VPN's do you feel you should study further? Why?
- 3) Why would you use a VPN over the Internet in a business situation when transferring sensitive data?

Summary Discussion

A classroom discussion should follow the lab. Review the lab questions and your analyses as a group. Share your experiences and knowledge with the class.

If You Want To Learn More

Research Virtual Private Networks at www.microsoft.com

Research PPTP at www.microsoft.com

Appendix:

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

