Using VB and Winsock

UDP source examples can can be downloaded here.

Winsock explained.

Both of the protocols we have been discussing, can be implemented on Windows based systems with relative ease, while using the windows socket ActiveX control Winsock.

Winsock's Functions.

Accept	Accept an incoming connection.
Bind	Bind to a local port.
BytesRecieved	Return the number of bytes received.
Close	Disconnect an open socket.
Connect	Connect to a host.
GetData	Retrieve buffer from host.
Index	Index number of the array.
Listen	Listen for connections on a port.
LocalHostName	Return the local name of the host.
LocalIp	Get the local IP Address.
LocalPort	Set/Get the local port you are using.
Name	Returns the name of the object.
Object	Returns an object in the control.
Parent	Returns the object that the control is on.
PeekData	Read the in buffer without taking it out.
Protocol	Get/Set the protocol to use (UDP or TCP)
RemoteHost	Get/Set the remote host to connect to.
RemoteHostIp	Get the IP of the host you are connected to.
RemotePort	Get/Set the port you are connecting to.
SendData	Send messages to the host.
SocketHandle	Get the socket handle.
State	Get the state of the control.
Tag	Get/Set a variable with extra data.

Winsock's Functions.

Close
Connect
ConnectionRequest
DataArrival
Error
SendComplete
SendProgress

Making a TCP Client.

Open up Visual Basic, select Standard Exe as the new project type. Once the form pops up on the screen hit ctrl+t, scroll down till you find Microsoft Winsock Control 6.0. Check the box beside the control. You should see an icon in your control box of two computers with a link between them. Add one of the controls to the form. Now name the control "client" without the "s. Now open the coding window, under "Private Sub Form_Load()". In the load function add the following lines of code.

```
Client.remotehost = "freechess.org"
Client.remoteport = 5000
Client.connect
```

Now go back to the form, and double click on the winsock control that you added. A coding windows should pop up listed as

```
Private Sub client_Error(ByVal Number As Integer, Description As String, ByVal Scode As Long, ByVal Source As String, ByVal HelpFile As String, ByVal Help
```

In that function add the following lines of code.

```
Msgbox "Error number: " & number & vbcrlf & "Description: " & description

Client.close
```

Okay, since that is entered now go into Private Sub Client_Close(), and put   client.close in that function.

Next, go into the Client_Connect() function and add a popup box like msgbox "Connected!"

Only one more function left :). Client_DataArrival(ByVal bytestotal as long) In this function enter the following lines of code.

```
Dim mydata as string

Client.GetData mydata

Msgbox mydata
```

Now run the program, the program should connect to the DNCS test server, and give you the welcome screen and the login prompt.
You could add more to the program so that when it connect you could use Client.SendData "guest" & vbcrlf & vbcrlf
Then you would be logged into the FICS chess server as guest.

TCP Server

Make a new project like you did in the last example, except this time put two of the winsock controls on the form. Name one of the controls “server1” and the other “server2”. Put a text box on the screen and name it “response” set the properties of multi-line to 1 and add scroll bars. Go into the Form_Load() function again and enter the following lines of code.

```
Server1.localport = 31337
Server1.listen
```

Now go into the Server1_ConnectionRequest() function and add the following lines of code.

```
Server2.close
Server2.accept requestID
Response = Response &  server2.RemoteHostIp & “ Connected.” & vbcrlf
```

Okay now go into Server2_Connect().

```
Server2.SendData “Welcome!” & vbcrlf
```

Now the Server2_DataArrival() function

```
Dim mydata as string
Server2.GetData mydata
Response = response & mydata & vbcrlf
```

Also you should add the line server#.close into the error and close functions of both winsock controls. Remember to substitute the number 1 or 2 in place of # and put them in the correct functions!

Run the program and connect to localhost using telnet or your own TCP client.
Congrats, you just made a TCP Echo client.

UDP Server

Okay, create a new project like you did in the last two projects. Add a winsock control to the form. Name the control “server”. Add a text box to the form, leave it as text1.

Open up the coding window and do the following.

```
Private Sub Form_Load()
server.LocalPort = 4001
server.Bind Winsock1.LocalPort
End Sub

Private Sub server_DataArrival(ByVal bytesTotal As Long)
Dim mydata As String

server.GetData mydata

server.SendData mydata

Text1 = Text1 & server.RemoteHostIP & " " & mydata & vbCrLf
End Sub

Private Sub server_Error(ByVal Number As Integer, Description As String, ByVal Scode As Long, ByVal Source As String, ByVal HelpFile As String, ByVal HelpC
MsgBox Description
End Sub
```

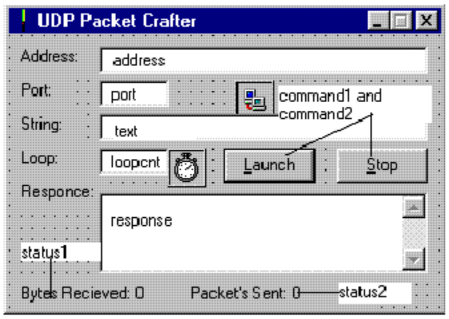
Okay, now run the program, of course you don’t have a client to connect to it yet so let’s start that.

Note: There is a little bug in the UDP server, it tries to send the data before it’s supposed to. It’ll give you something to try to fix.

UDP Client

Start a new project as standard exe. Load the winsock control, and drop one on the form. We’ll leave it named winsock1 this time.

Make the form look something like this.



Now here is the code.

```
Dim num As Integer
Dim bytesrecv As Integer
Dim packetssent As Integer

Private Sub Command1_Click()
On Error GoTo errno:

Winsock1.RemoteHost = Trim(address)
Winsock1.RemotePort = Trim(port)
Winsock1.Bind 50

Timer1.Interval = 1
```

```
errno:
If Err.Number > 0 Then
If Not Err.Number = 40020 Then MsgBox "Couldn't send packets"
Timer1.Interval = 1
End If
End Sub

Private Sub Command2_Click()
Timer1.Interval = 0
num = 0
End Sub

Private Sub Form_Load()

End Sub

Private Sub Timer1_Timer()
num = num + 1
Winsock1.SendData text

If num = Trim(loopcnt) Then
num = 0
Timer1.Interval = 0
End If

packetssent = packetssent + 1
status2 = "Sent Packets: " & packetssent
End Sub

Private Sub Winsock1_DataArrival(ByVal bytesTotal As Long)
Dim mydata As String

Winsock1.GetData mydata

response = response & mydata & vbCrLf

bytesrecv = bytesrecv + bytesTotal

Status1 = "Bytes Recieved: " & bytesrecv
End Sub

Private Sub Winsock1_Error(ByVal Number As Integer, Description As String, ByVal Scode As Long, ByVal Source As String, ByVal HelpFile As String, ByVal Hel
MsgBox Description
End Sub
```

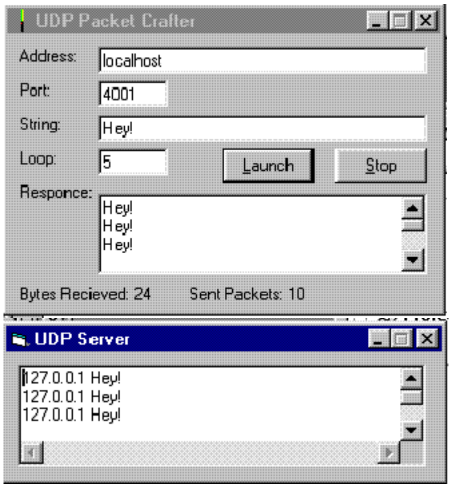
Run both the server and the client, send messages from the client to the server. Note: (Don’t spam yourself out)

We’ve covered quite a bit in this tutorial. I hope it will help you with your winsock development in the future.
I wrote this tutorial because I found the internet is lacking tons of winsock tutorials. So here it is :).
If you find any errors/suggestions please email me (stderr@m-net.arbornet.org)

Thanks!

-stderr
Note: I found this article a while back, and no longer program in VB (Thank goodness).
So, it's kinda doubtful that I can help out very much, but I will do what I can.
I have some bots and stuff that I wrote in VB if you want the code just drop me an email.

Here is what the end product should look like for the UDP applications.



Address: localhost
Port: 4001
String: Hey!
Loop: 5
Responce:
Hey!
Hey!
Hey!
Bytes Recieved: 24 Sent Packets: 10

127.0.0.1 Hey!
127.0.0.1 Hey!
127.0.0.1 Hey!

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