

Application :

Application which Displays Local IP address and Host name.

```
using System;
using System.Net;
using System.Net.Sockets;

class Marvellous
{
    public static string GetLocalIPAddress()
    {
        Console.WriteLine("Marvellous Web : Host name - {0}", Dns.GetHostName());

        var host = Dns.GetHostEntry(Dns.GetHostName());

        foreach (var ip in host.AddressList)
        {
            if (ip.AddressFamily == AddressFamily.InterNetwork)
            {
                return ip.ToString();
            }
        }

        throw new Exception("No network adapters with an IPv4 address in the system!");
    }

    public static void Main()
    {
        if (!(System.Net.NetworkInformation.NetworkInterface.GetIsNetworkAvailable()))
        {
            Console.WriteLine("Marvellous Web : Unable to connect with network");

            return;
        }

        try
        {
            string ip = GetLocalIPAddress();

            Console.WriteLine("Marvellous Web : IP address of your machine is - "+ip);
        }
        catch (Exception e)
        {
            Console.WriteLine(e);
        }
    }
}
```

Application :

Client Application which interacts with server through socket.

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Net;
using System.Net.Sockets;
using System.IO;
using System.Runtime.InteropServices;

public class MarvellousClient
{
    public static string GetLocalIPAddress()
    {
        Console.WriteLine("Marvellous Web : Host name - {0}", Dns.GetHostName());

        var Marvelloushost = Dns.GetHostEntry(Dns.GetHostName());

        foreach (var ip in Marvelloushost.AddressList)
        {
            if (ip.AddressFamily == AddressFamily.InterNetwork)
            {
                return ip.ToString();
            }
        }

        throw new Exception("Marvellous Web :No network adapters with an IPv4 address in the system!");
    }

    public static void Main(string[] args)
    {
        TcpClient tcpclnt = null;
        Stream stm = null;
        Int32 MarvellousPort = 0;
        string MarvellousIP = null;

        try
        {
            MarvellousIP = GetLocalIPAddress();

            MarvellousPort = 21000;

            tcpclnt = new TcpClient();

            Console.WriteLine("Marvellous Web : Connecting with server ...");

            tcpclnt.Connect(MarvellousIP, MarvellousPort);

            Console.WriteLine("Marvellous Web : Connection Successful");

            Console.WriteLine("Marvellous Web : Enter the message for server ...");

            String str = Console.ReadLine();

            Console.WriteLine("Marvellous Web : Getting stream for data trasmission ...");
```

```
stm = tcpclnt.GetStream();  
ASCIIEncoding asen = new ASCIIEncoding();  
byte[] ba = asen.GetBytes(str);  
Console.WriteLine("Marvellous Web : Sending data ...");  
stm.Write(ba, 0, ba.Length);  
byte[] bb = new byte[100];  
int k = stm.Read(bb, 0, 100);  
Console.WriteLine("Marvellous Web : Message received from server ...");  
for (int i = 0; i < k; i++)  
{  
    Console.Write(Convert.ToChar(bb[i]));  
}  
catch (Exception e)  
{  
    Console.WriteLine("Marvellous Web Exception : "+ e.StackTrace);  
}  
finally  
{  
    Console.WriteLine("Marvellous Web : Deallocating all resources ...");  
    if (tcpclnt != null)  
    {  
        tcpclnt.Close();  
    }  
    if (stm != null)  
    {  
        stm.Close();  
    }  
}  
}  
}
```

Application:**Server Application which interacts with client using socket.**

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Net;
using System.Net.Sockets;
using System.IO;

class MarvellousServer
{
    public static string GetLocalIPAddress()
    {
        Console.WriteLine("Marvellous Web : Host name - {0}", Dns.GetHostName());

        var Marvelloushost = Dns.GetHostEntry(Dns.GetHostName());

        foreach (var ip in Marvelloushost.AddressList)
        {
            if (ip.AddressFamily == AddressFamily.InterNetwork)
            {
                return ip.ToString();
            }
        }

        throw new Exception("Marvellous Web :No network adapters with an IPv4 address in the system!");
    }

    public static void Main(string[] args)
    {
        Int32 MarvellousPort = 0;
        string MarvellousIP = null;
        Socket s = null;
        TcpListener myList = null;

        try
        {
            MarvellousIP = GetLocalIPAddress();

            MarvellousPort = 21000;

            IPAddress ipAd = IPAddress.Parse(MarvellousIP);

            Console.WriteLine("Marvellous Web : Server started ... ");

            myList = new TcpListener(ipAd, MarvellousPort);

            myList.Start();

            Console.WriteLine("Marvellous Web : Server started at port : " + MarvellousPort);

            Console.WriteLine("Marvellous Web : The local End point is : " + myList.LocalEndpoint);

            Console.WriteLine("Marvellous Web : Server Waiting for a connection ....");

            s = myList.AcceptSocket();
        }
    }
}
```

```
        Console.WriteLine("Marvellous Web : Connection Established with client...");  
  
        Console.WriteLine("Marvellous Web : Connection accepted from " + s.RemoteEndPoint);  
  
        byte[] b = new byte[100];  
  
        int k = s.Receive(b);  
  
        Console.WriteLine("Marvellous Web : Message Received ...");  
  
        for (int i = 0; i < k; i++)  
        {  
            Console.Write(Convert.ToChar(b[i]));  
        }  
  
        ASCIIEncoding asen = new ASCIIEncoding();  
  
        s.Send(asen.GetBytes("Marvellous Web :The string was received by the server ..."));  
    }  
    catch (Exception e)  
    {  
        Console.WriteLine("Marvellous Web : Exception - " + e.StackTrace);  
    }  
    finally  
    {  
        Console.WriteLine("\nMarvellous Web : Deallocating all resources ...");  
  
        if (s != null)  
        {  
            s.Close();  
        }  
        if (myList != null)  
        {  
            myList.Stop();  
        }  
    }  
}
```