

Connecting to the School Network from Your Home Internet Connection

Assumptions

This document assumes

- that you are using Windows XP. Windows Vista instructions will be coming later.
- have a broadband connection to the internet
- that if you are using a personally owned computer, you have full administrative access to it

Scenario 1: Using a school owned laptop to connect

The easiest method to connect to the school network over the internet is to use a school owned laptop. The majority of work is done for you; all you need to do is make sure of is that your laptop has been connected to the main school network recently so that the latest policy updates have been applied. The procedure to connect to the school network is as follows:

Step 1: Connect your laptop to the internet

The best method of connecting your laptop to the internet is by a broadband router. The main advantage of this method is that you do not need to install any special software. The connection can be either a physical network cable or a wireless connection.

Step 2: Disable the proxy server in Internet Explorer

Open Internet Explorer. Go to the Tools menu and choose Internet Options (shown below)

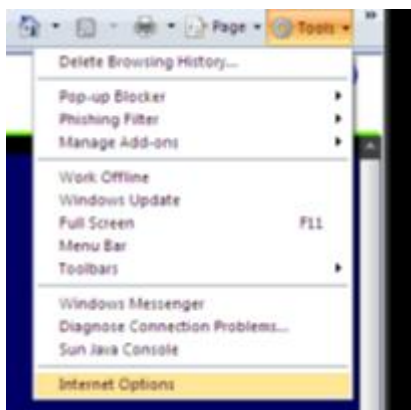


Figure 1: Internet Explorer 7

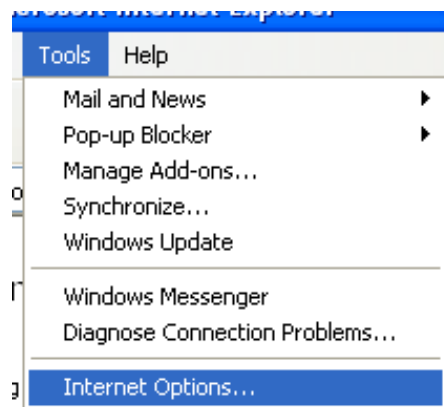
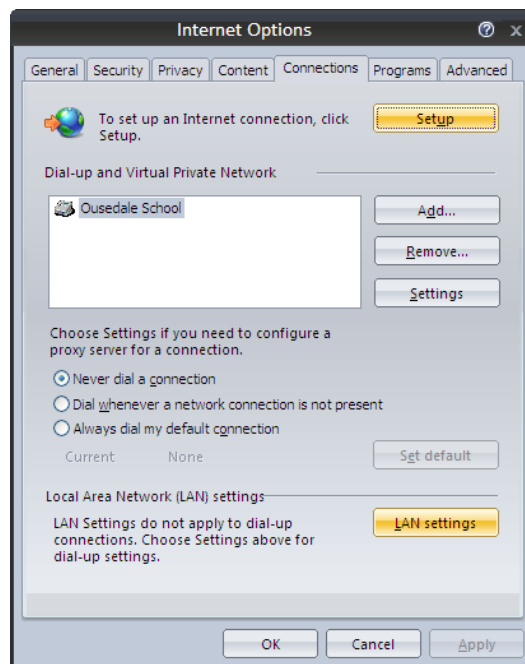
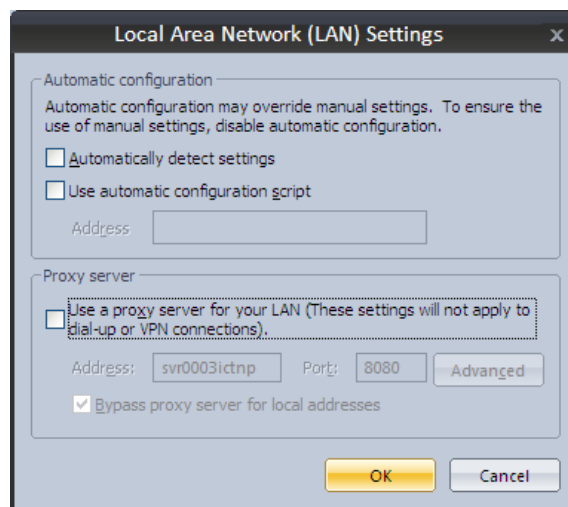


Figure 2: Internet Explorer 6

Go to the Connections tab and press LAN Settings.



Uncheck the “Use a proxy server (etc)” box.

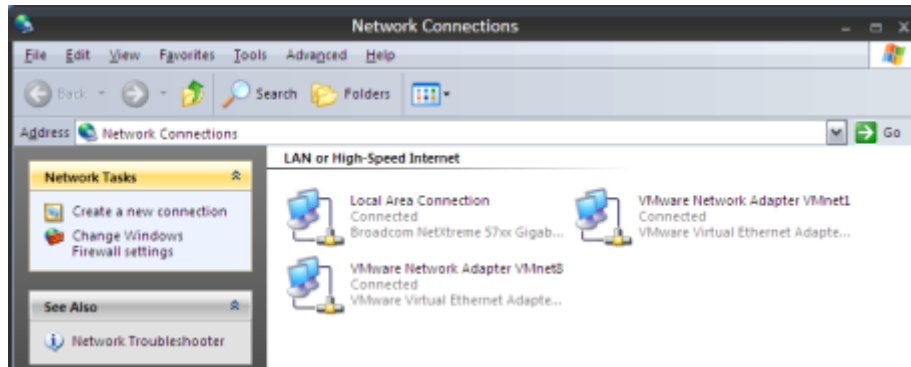


When you come back into school, this box will need to be re-checked if you want to connect to the internet. Press the OK button on each open dialogue box and close Internet Explorer.

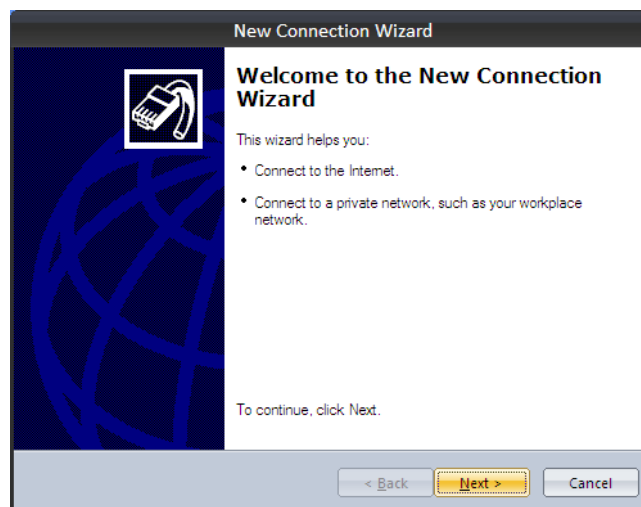
Step 3: Create the VPN Connection

Press the Start Button, go to Settings and choose Control Panel. If the Control Panel is set to Category View, switch to the Classic View. Open the Network Connections application. You should

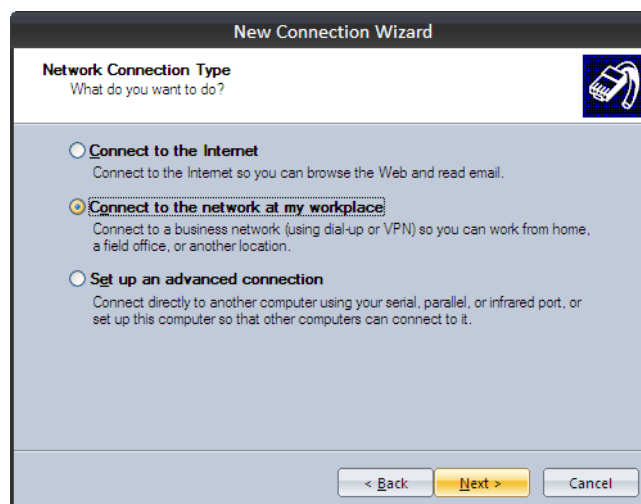
see a window similar to this:



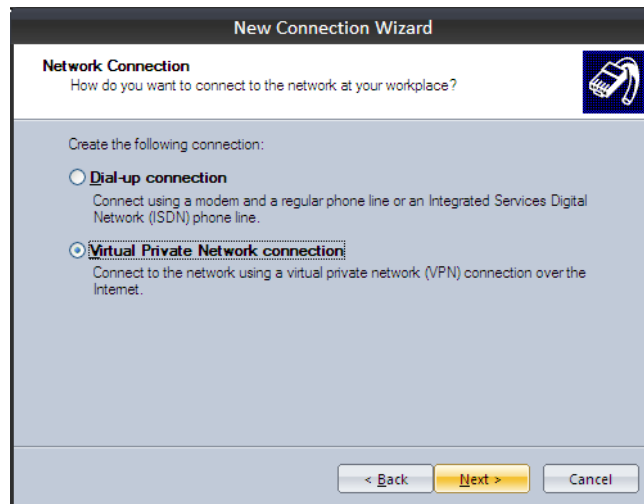
Click on the Create a new connection link. This will appear:



Press Next.



Choose "Connect to the network at my workplace" and press Next.



The screenshot shows the 'New Connection Wizard' window with the 'Network Connection' tab selected. The title bar reads 'New Connection Wizard'. Below the tab, the text says 'How do you want to connect to the network at your workplace?'. There is a small icon of a modem in the top right corner. The main area contains the instruction 'Create the following connection:' followed by two radio button options. The first option is 'Dial-up connection' with the description 'Connect using a modem and a regular phone line or an Integrated Services Digital Network (ISDN) phone line.' The second option is 'Virtual Private Network connection' with the description 'Connect to the network using a virtual private network (VPN) connection over the Internet.' The 'Virtual Private Network connection' option is selected. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

New Connection Wizard

Network Connection
How do you want to connect to the network at your workplace?

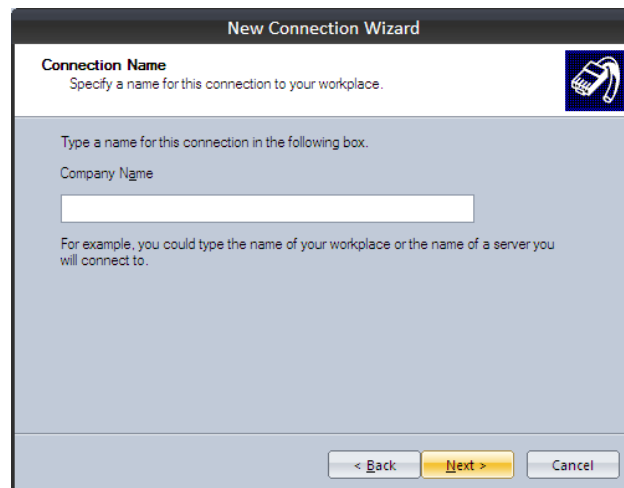
Create the following connection:

☐ **Dial-up connection**
Connect using a modem and a regular phone line or an Integrated Services Digital Network (ISDN) phone line.

☒ **Virtual Private Network connection**
Connect to the network using a virtual private network (VPN) connection over the Internet.

< Back Next > Cancel

Choose “Virtual Private Network connection” and press Next.



The screenshot shows the 'New Connection Wizard' window with the 'Connection Name' tab selected. The title bar reads 'New Connection Wizard'. Below the tab, the text says 'Specify a name for this connection to your workplace.' There is a small icon of a modem in the top right corner. The main area contains the instruction 'Type a name for this connection in the following box.' followed by a text input field labeled 'Company Name'. Below the input field, there is a note: 'For example, you could type the name of your workplace or the name of a server you will connect to.' At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

New Connection Wizard

Connection Name
Specify a name for this connection to your workplace.

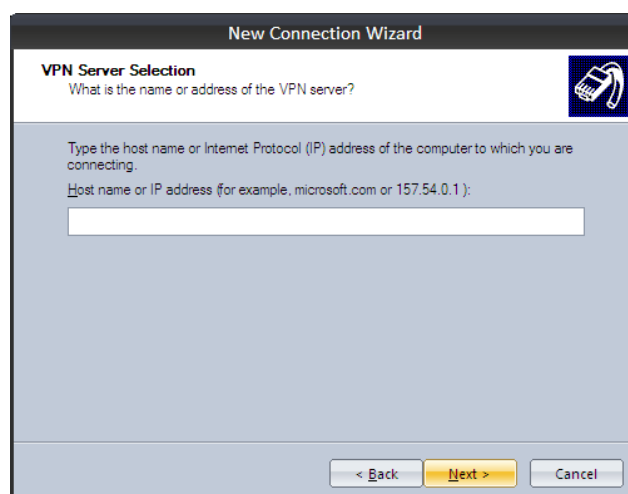
Type a name for this connection in the following box.

Company Name

For example, you could type the name of your workplace or the name of a server you will connect to.

< Back Next > Cancel

In the Company Name box, type “Ousedale School” or something similar. Press Next.



The screenshot shows the 'New Connection Wizard' window with the 'VPN Server Selection' tab selected. The title bar reads 'New Connection Wizard'. Below the tab, the text says 'What is the name or address of the VPN server?'. There is a small icon of a modem in the top right corner. The main area contains the instruction 'Type the host name or Internet Protocol (IP) address of the computer to which you are connecting.' followed by a text input field labeled 'Host name or IP address (for example, microsoft.com or 157.54.0.1):'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

New Connection Wizard

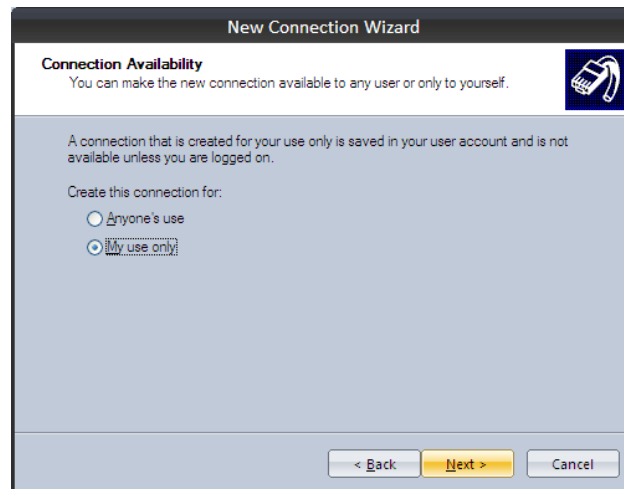
VPN Server Selection
What is the name or address of the VPN server?

Type the host name or Internet Protocol (IP) address of the computer to which you are connecting.

Host name or IP address (for example, microsoft.com or 157.54.0.1):

< Back Next > Cancel

In the Host Name box, type “remote.ousedale.org.uk” without the quotes and press Next.



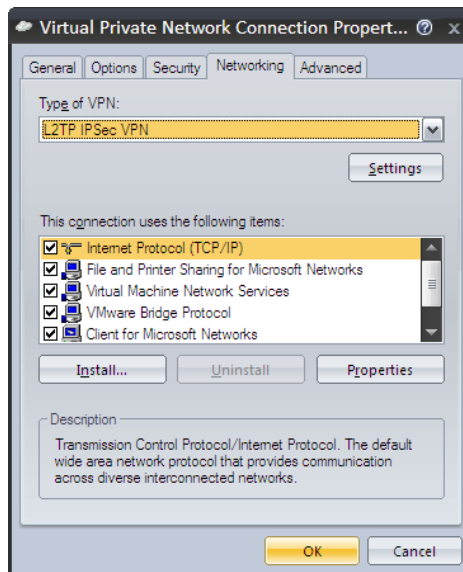
Choose “My use only” and press Next.



If you want a shortcut to the connection on your desktop, press Next. Otherwise just press the Finish button. This window will appear:



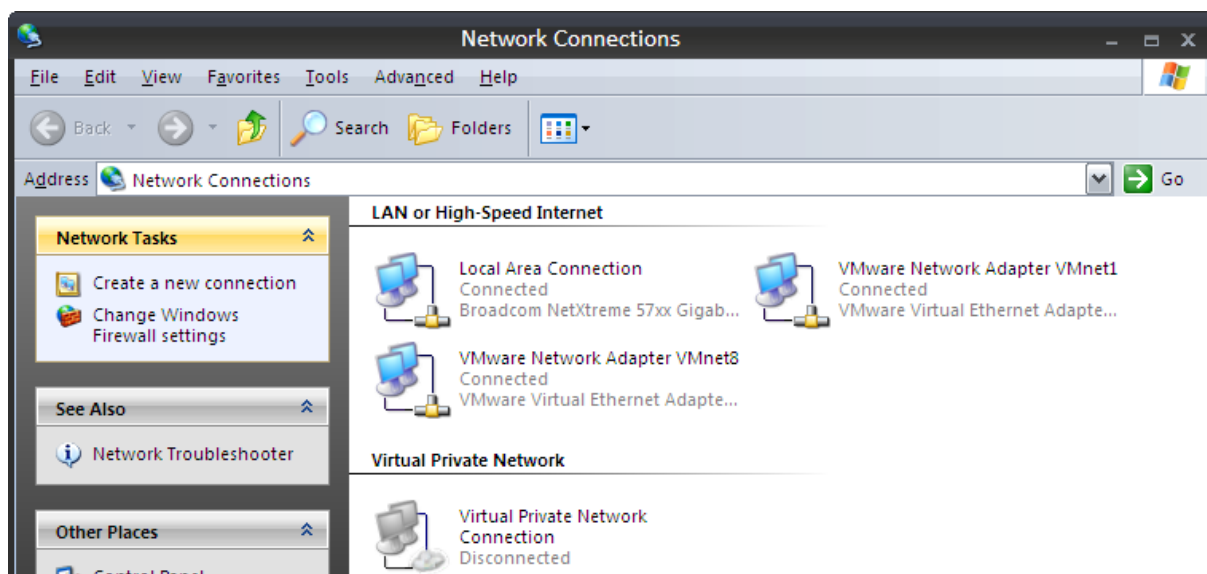
Press Properties. Go to the Networking tab



Change the “Type of VPN” option from “Automatic” to “L2TP IPsec VPN”. Press OK.

Step 4: Connect to the network

Open the Control Panel again and go to Network Connections. You should now see an extra object in there with the name that you chose in the procedure above. Double click on it.





Type your standard network username and password into the boxes provided and press Connect. You will then be connected to the Ousedale School network over the internet!

Scenario 2: Using a personal PC to connect

Using a personal PC to connect to the school network is a little more complicated.

To help improve security and to have greater control over what PCs are able to connect to the network remotely, we are using what is known as a Public Key Infrastructure (PKI). The PKI issues a certificate to a PC. When you try to connect to the network, the PC then compares this certificate with one that is sitting on the school network. If the certificate matches, it allows the PC to connect. If the certificate is invalid, malformed, out of date or not present the connection is rejected.

All of the school owned PCs which are joined to the network have these certificates automatically issued to them without any user intervention. Of course, that means that your personal PC doesn't have this certificate and is unable to connect unless it has one.

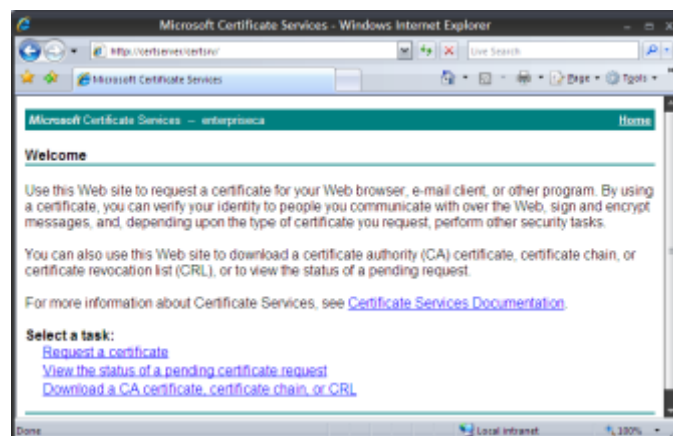
The first steps have to be performed on a school PC connected to the network

Step 1: Request a cert

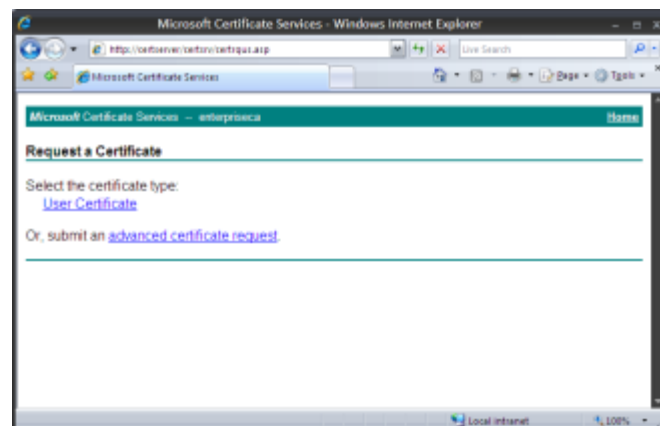
On a school PC, open Internet Explorer and browse to the following address:

<http://certserver/certsrv>

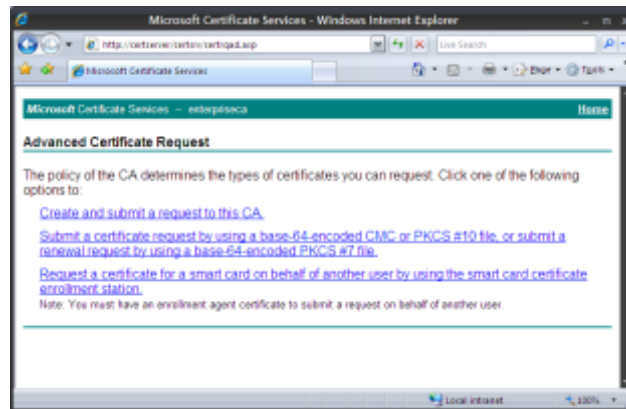
The following webpage will appear:



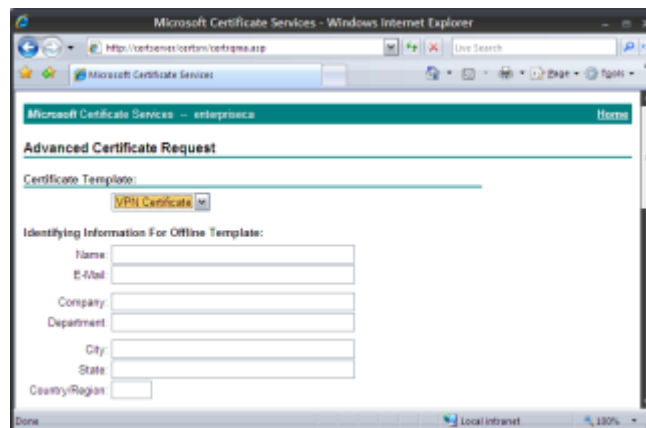
Click on the “Request a certificate” link.



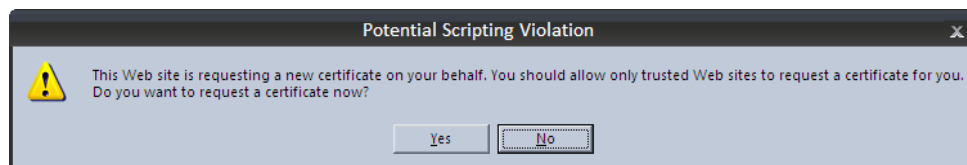
Click on “Submit an advanced certificate request”



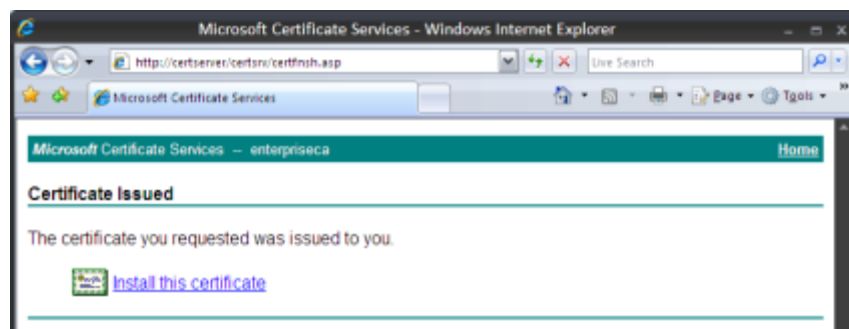
Click on “Create and submit a request to this CA”



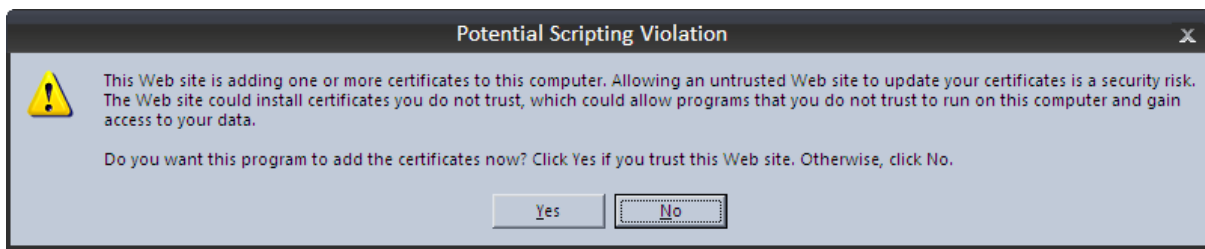
Change the Certificate Template type to “VPN Certificate” and fill out the Identifying Information area. In the Key Options area, make sure that the “Mark Keys as Exportable” field is checked. This is very important, if this box is not checked you will not be able to copy the certificate to your home PC. All other settings can be left as default. Scroll to the bottom of the page and press “Submit”. The following message will appear:



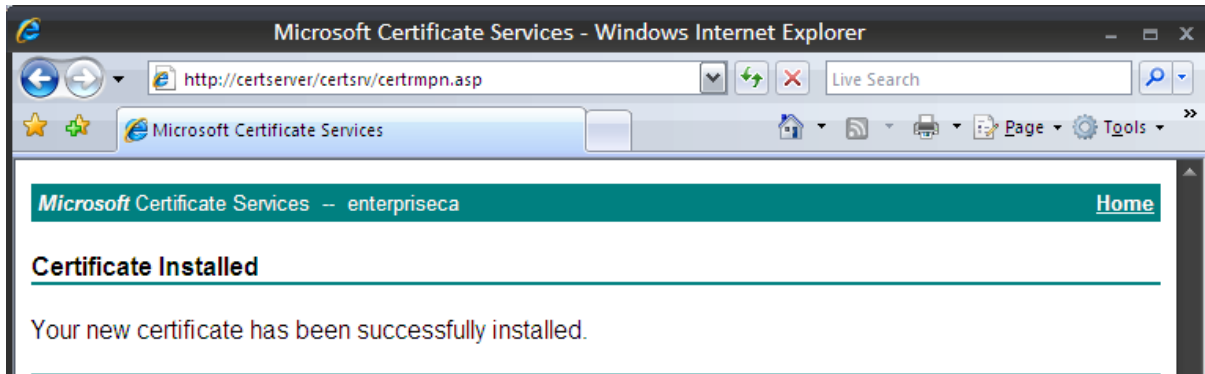
Press “Yes”. The following webpage will appear:



Click “Install this certificate”. The following message appears:



Press Yes. The webpage will notify you that the certificate has been installed.



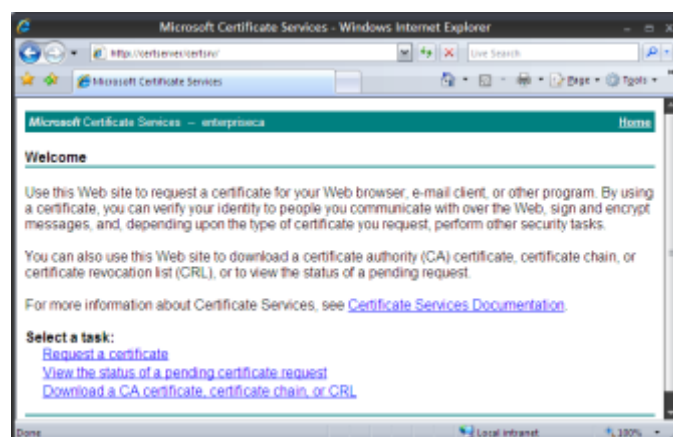
Step 2: Save the certificate to a removable device.

There are two certificate objects that you need to save: The certificate you requested in Step 1 and a certificate called a CA Certificate. To download the CA certificate

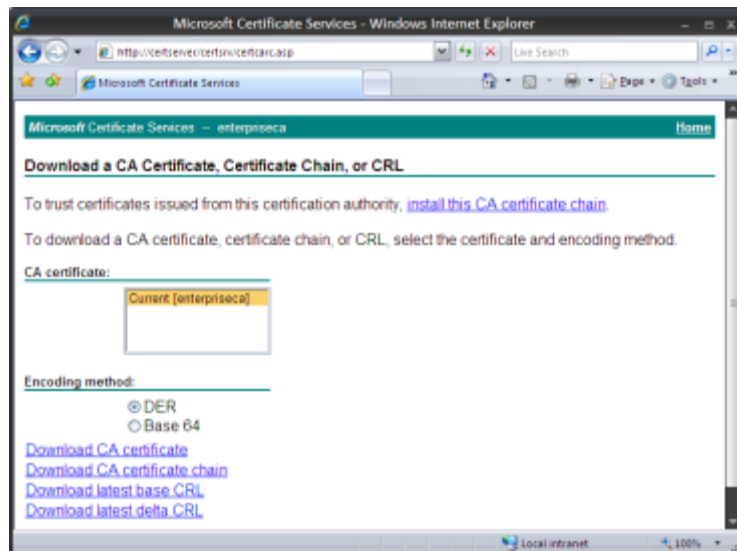
On a school PC, open Internet Explorer and browse to the following address:

<http://certserver/certsrv>

The following webpage will appear:

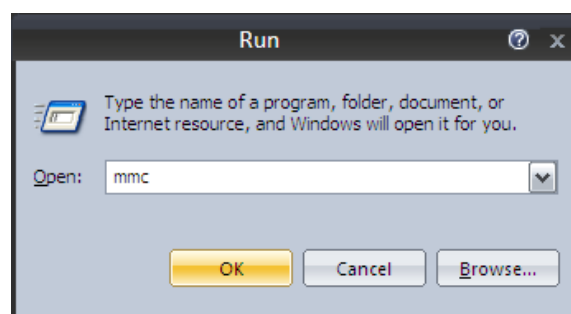


Click on the “Download a CA certificate, certificate chain or CRL” link.

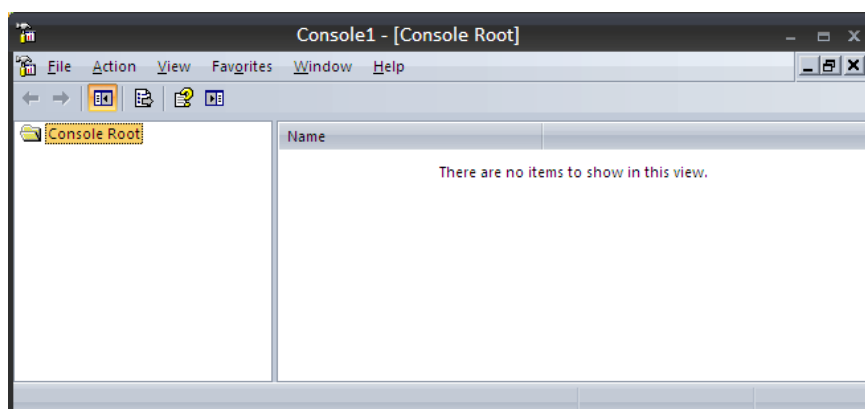


Click on the “Download CA certificate” link. You will be presented with a standard file download box, download the certificate to a removable device like a USB flash stick or a floppy disk.

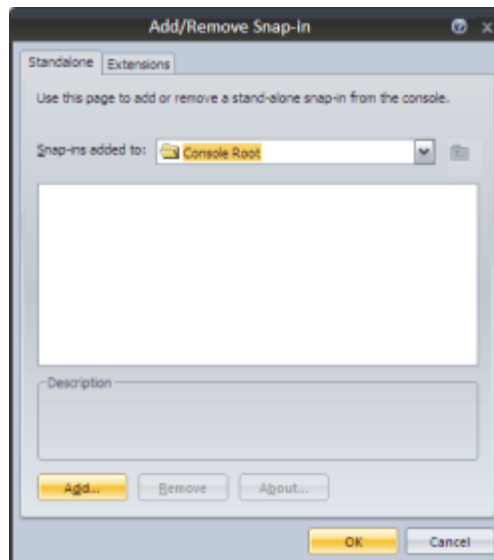
You now need to export the certificate you created in Step 1. Press Start, press the Run button. Type “mmc” without the quotes into the box and press OK



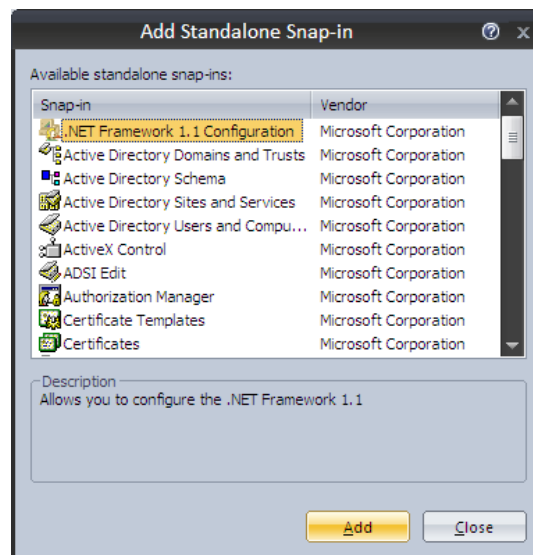
The following window will appear:



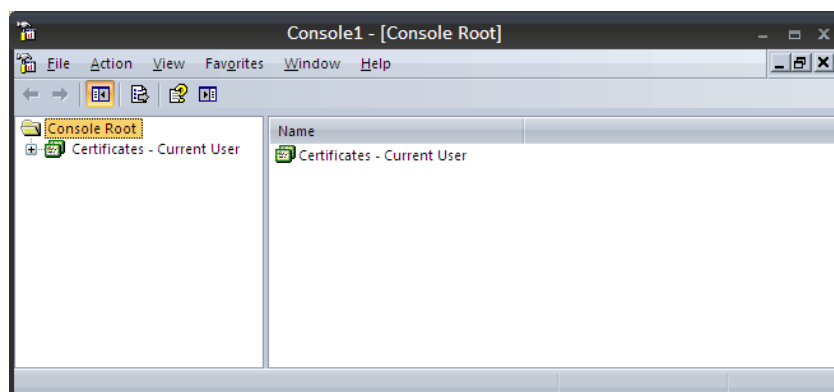
This is called an MMC console. Go to the File menu and choose “Add/Remove Snap-In”.



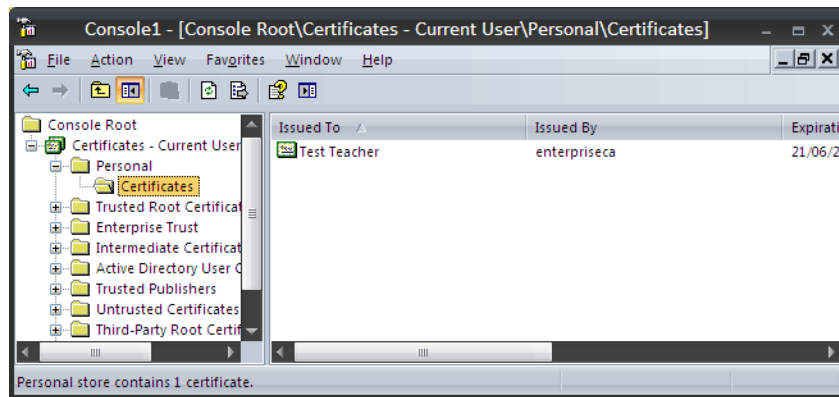
Press the Add button



Double click on Certificates and press the Close button. Press OK on the Add/Remove Snap-In window. Your MMC console window will now look like this:



Expand the Certificates tree and go to Personal then Certificates. Your MMC console will look like the one below:



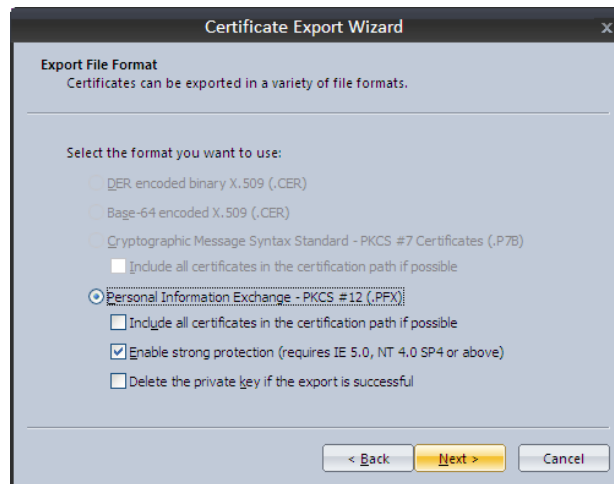
Right click on the certificate shown in the right pane of the MMC console (Called “Test Teacher” in this example), go to “All Tasks” and choose “Export”. The Certificate Export Wizard will appear as shown below:



Press the Next button.



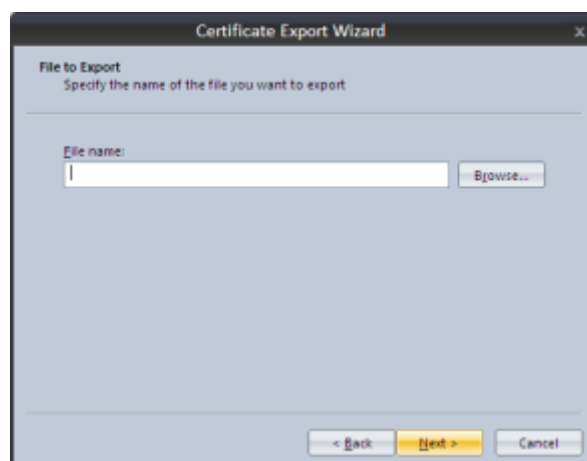
Choose the “Yes, export the private key” option and press next. It is important that this option is chosen otherwise the certificate will not work.



Leave these options as their defaults and press Next.



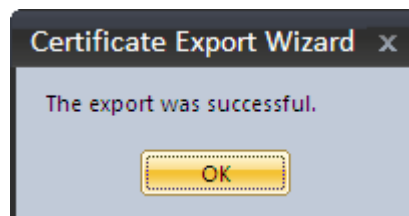
It will ask you to create a password for the certificate. Make it a strong password but make sure that you can remember it. Type the password you want to use into box boxes and press next.



The wizard will now ask where you want to save the exported certificate. Save it to the same location you saved the CA certificate previously. Press Next.

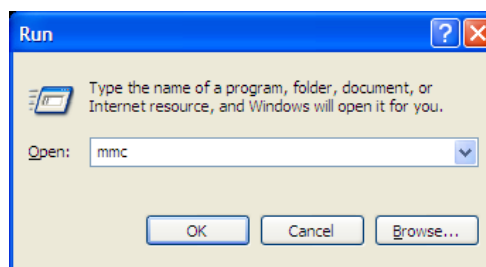


The final screen confirms all the details you entered. Press Finish. You should then get a message box appear telling you that the export was successful (See below)

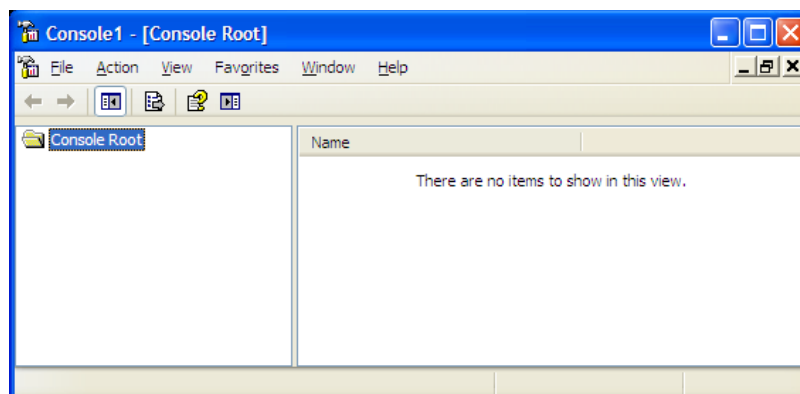


Step 3: Import the certificates onto your Personal PC.

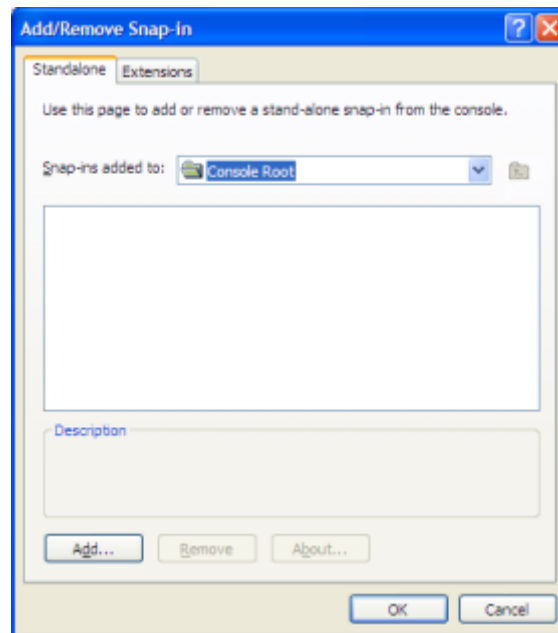
On your personal PC, put in the removable device that you stored your certificates on. Press Start and press the Run button. Type "mmc" without the quotes into the box and press OK.



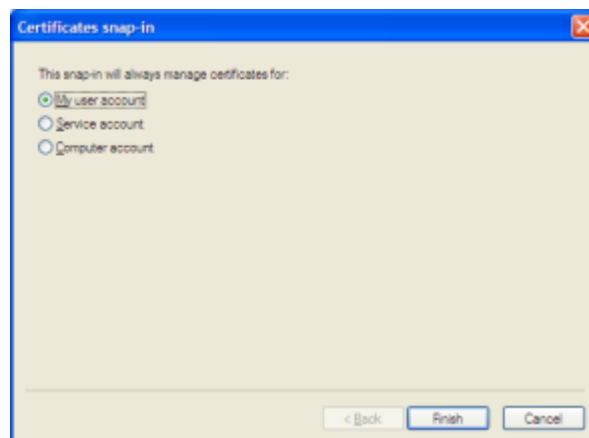
The MMC console for your PC will now appear:



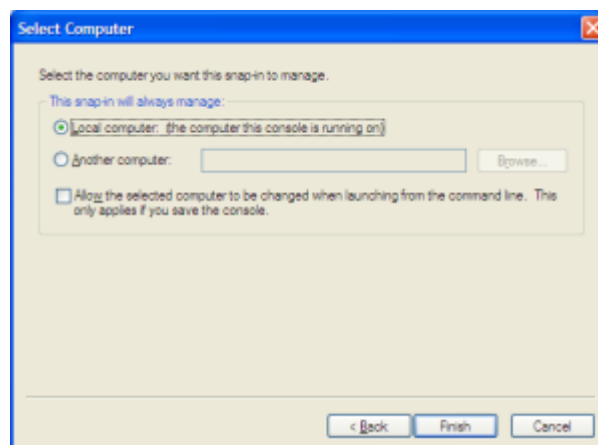
Open the File and choose "Add/Remove Snap-in" option.



Press Add and double click on Certificates. Assuming you have full administrative access to your PC, the following window will appear:

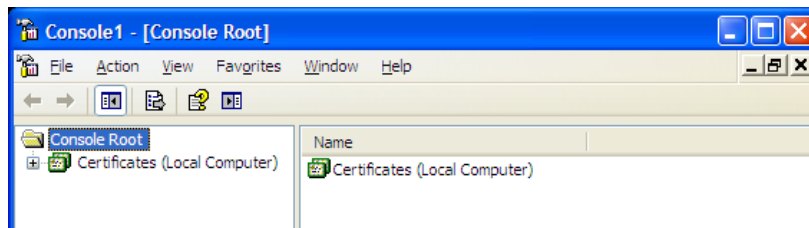


If this window doesn't appear, log on with a user which has full administrative access. Choose the "Computer Account" option and press Next.

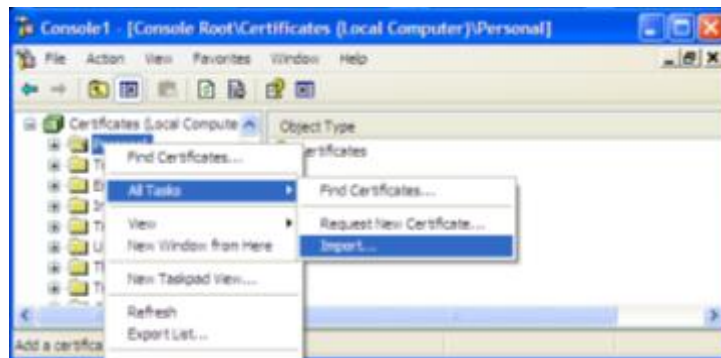


Choose the "Local Computer" option and press Finish. Close the Add/Remove Snap-In windows.

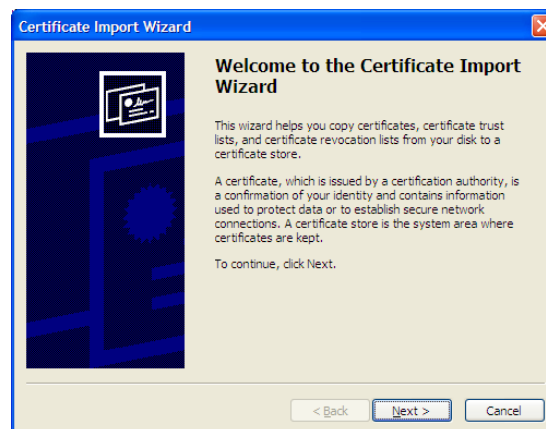
Your MMC console will now look like this:



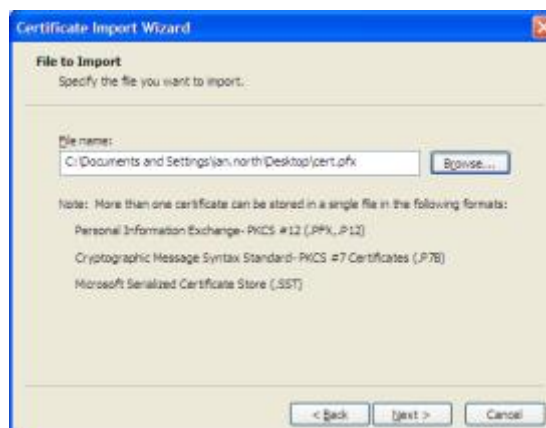
Expand the Certificates (Local Computer) tree and browse to Personal. Right click on Personal, go to All Tasks and choose "Import"



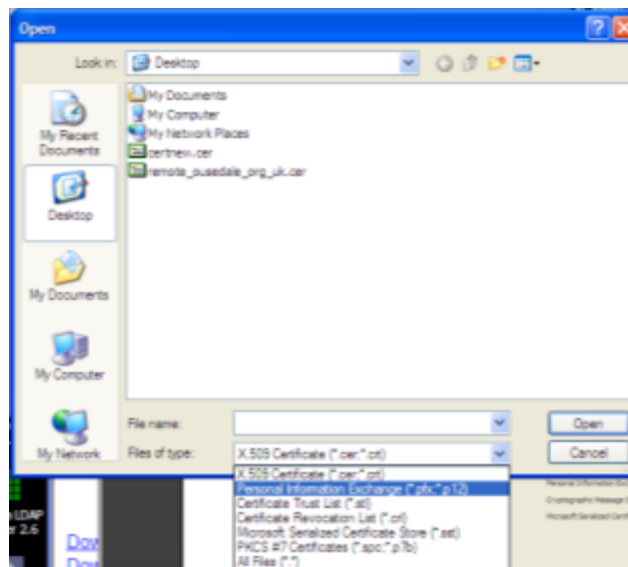
The Certificate Import Wizard will appear.



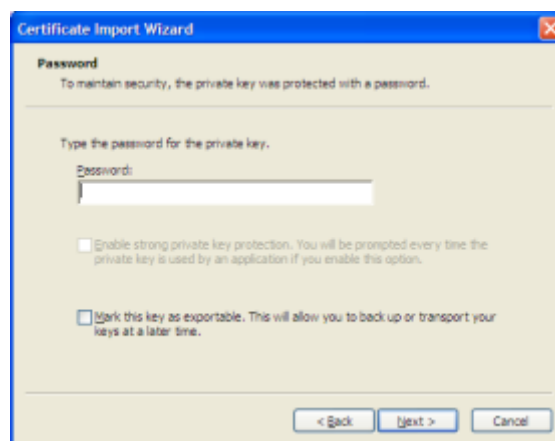
Press Next.



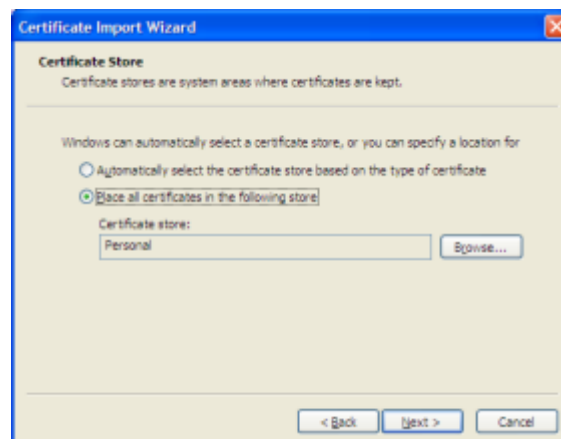
Press the browse button. Change the “Files of type” option to “Personal Information Exchange (*.pfx;*.p12).”



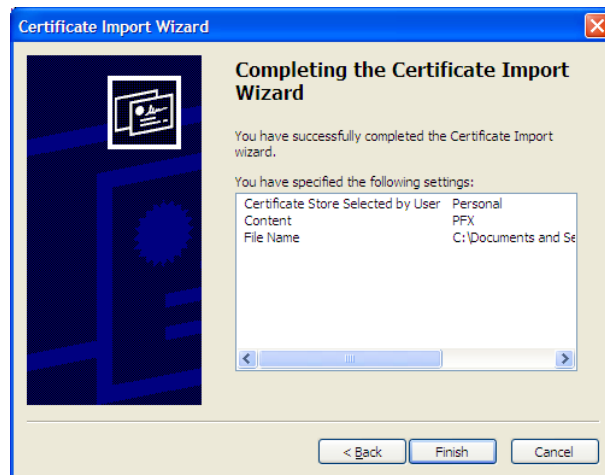
Browse to where your exported certificate is stored. Select it and press the Open button. This will return you to the Certificate Import Wizard. Press the Next button.



Type in the password you entered in Step 2 and press Next.



Make sure that the “Place all certificates in the following store” option is selected and press next.



Press the “Finish” button. A message should appear saying that the import was successful.

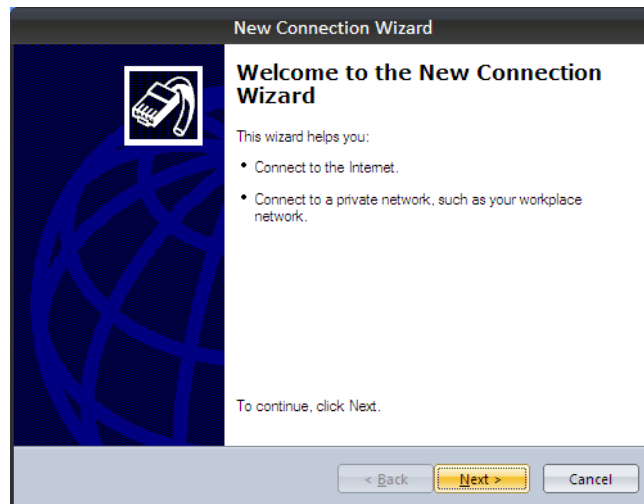
You now need to import the CA certificate. The procedure is almost identical but you need to import the CA certificate into a different location. Go back to the MMC and browse to Trusted Root Certification Authorities. Right click on it, go to All Tasks and press Import. The Certificate Import Wizard will appear again. Follow the same steps as you did for the first certificate but instead of choose the CA certificate instead.

Step 4: Create the VPN Connectiod

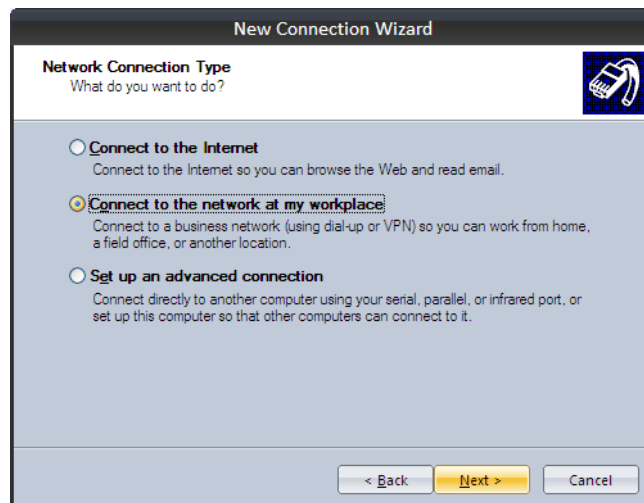
Press the Start Button, go to Settings and choose Control Panel. If the Control Panel is set to Category View, switch to the Classic View. Open the Network Connections application. You should see a window similar to this:



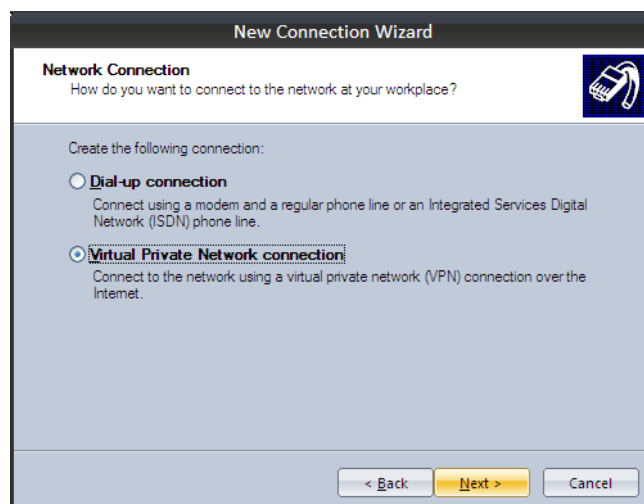
Click on the Create a new connection link. This will appear:



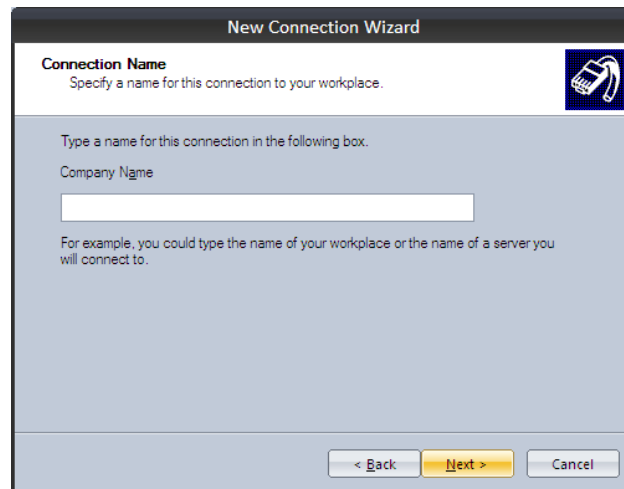
Press Next.



Choose "Connect to the network at my workplace" and press Next.

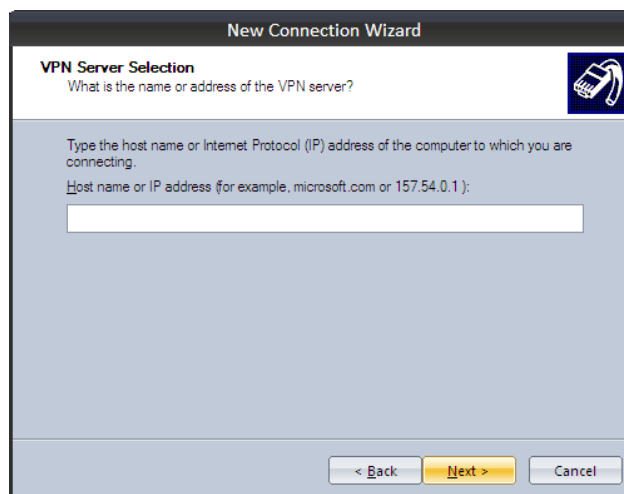


Choose "Virtual Private Network connection" and press Next.



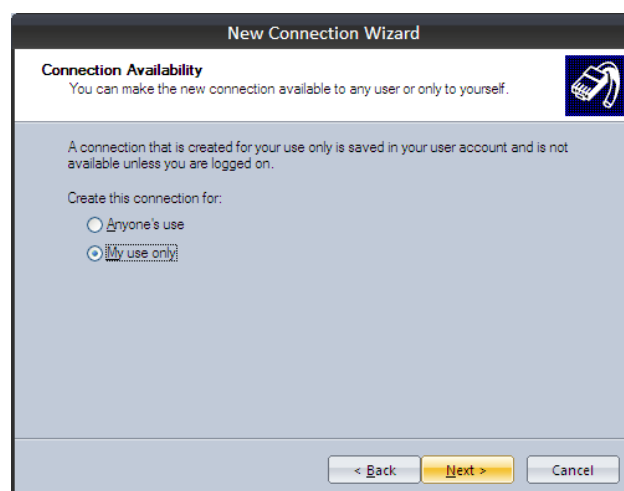
The screenshot shows the 'New Connection Wizard' window with the 'Connection Name' tab selected. The title bar reads 'New Connection Wizard'. Below the tab, the text says 'Specify a name for this connection to your workplace.' and 'Type a name for this connection in the following box.' There is a text input field labeled 'Company Name'. Below the field, it says 'For example, you could type the name of your workplace or the name of a server you will connect to.' At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

In the Company Name box, type “Ousedale School” or something similar. Press Next.



The screenshot shows the 'New Connection Wizard' window with the 'VPN Server Selection' tab selected. The title bar reads 'New Connection Wizard'. Below the tab, the text says 'What is the name or address of the VPN server?' and 'Type the host name or Internet Protocol (IP) address of the computer to which you are connecting.' There is a text input field labeled 'Host name or IP address (for example, microsoft.com or 157.54.0.1):'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

In the Host Name box, type “remote.ousedale.org.uk” without the quotes and press Next.



The screenshot shows the 'New Connection Wizard' window with the 'Connection Availability' tab selected. The title bar reads 'New Connection Wizard'. Below the tab, the text says 'You can make the new connection available to any user or only to yourself.' and 'A connection that is created for your use only is saved in your user account and is not available unless you are logged on.' There are two radio buttons: 'Anyone's use' and 'My use only'. The 'My use only' radio button is selected. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

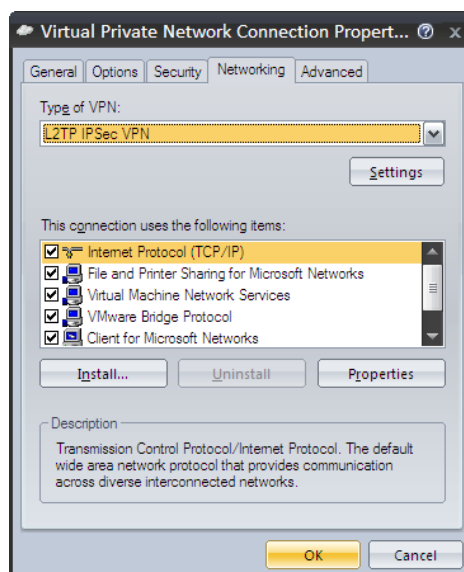
Choose “My use only” and press Next.



If you want a shortcut to the connection on your desktop, press Next. Otherwise just press the Finish button. This window will appear:



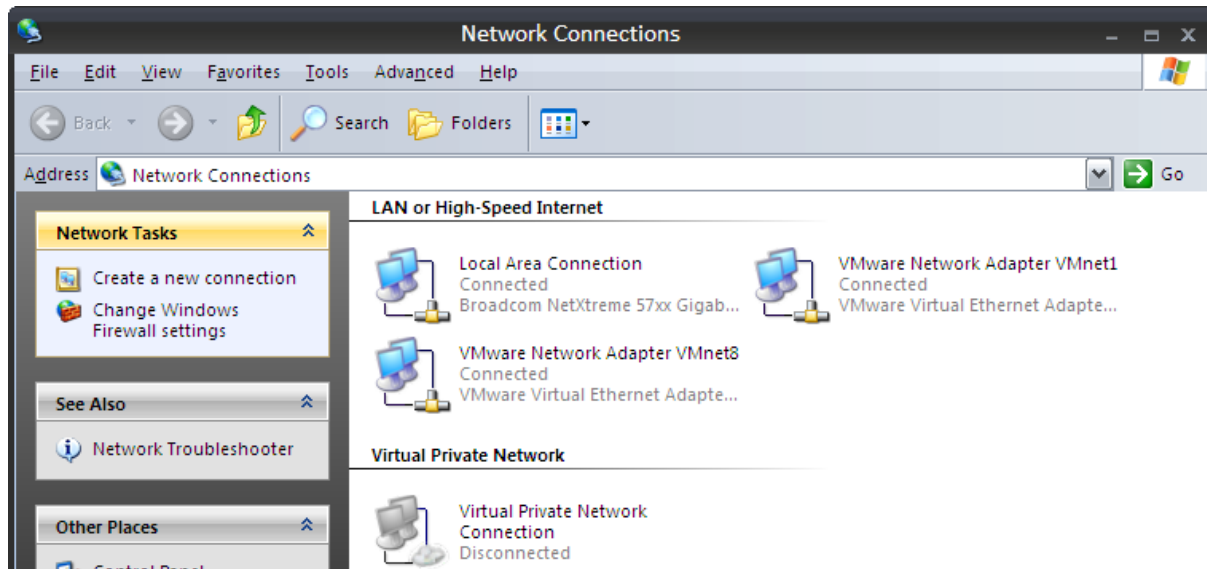
Press Properties. Go to the Networking tab



Change the “Type of VPN” option from “Automatic” to “L2TP IPsec VPN”. Press OK.

Step 5: Connect to the network

Open the Control Panel again and go to Network Connections. You should now see an extra object in there with the name that you chose in the procedure above. Double click on it.



Type your standard network username and password into the boxes provided and press Connect. You will then be connected to the Ousedale School network over the internet!