

Windows 7 Professional 64 bit Installation and Configuration for MassLynx or Empower Controlled Ethernet Instrument Communication

Version 3 Jan 2013

PLEASE READ BEFORE CONTINUING:

This document applies to

- i) MassLynx or Empower installations where the PCs have not been supplied by Waters i.e. without the Waters image for Windows 7 Professional 64 bit installed, or
- ii) MassLynx installations controlling 'legacy' ftp-boot sequence type MS instruments.

For newer dynamic boot sequence instruments the configuration steps mentioned in this document should be done automatically by the Waters imaging process. However, if there are issues with communications this document can serve as a checklist for the PC set-up.

Refer to the disk imaging procedure documents (included on the reimage media with all Waters PCs) for details on what steps to perform with respect to additional PC configuration after applying a Waters image.

Note: Waters' responsibility is only to configure the settings necessary for software and instrument operation, not to install the operating system on any PCs. Operating system installation is the end-user's responsibility.

Depending on how the image was installed/configured by the end user, certain steps in this document may not apply. Accordingly decide which steps may need to be followed and which ones do not.

1. Purpose

This document outlines the procedure to configure a Microsoft Windows 7 Professional 64 bit operating system in order for Empower or MassLynx controlled instruments to communicate and function correctly.

2. Scope

It is assumed that the engineer configuring the PC is familiar with Windows 7 Professional 64 bit operation and its general operational use. It is also assumed that the starting point for this configuration is from a new installation of Windows 7 Professional 64 bit on an IBM PC. **Note:** when a Windows 7 Professional 64 bit OS is installed as a new installation any previous Windows OS is overwritten and all data lost.

To configure a Waters-imaged PC for 'legacy' ftp-boot sequence type MS instruments (e.g. Quattro Premier/XE, Quattro Micro, QToF Premier etc) FTP communications must be configured – go directly to Appendix A.

For instructions on how to configure Windows 7 for successful operation of MassLynx when installed with Security, please refer to Service Note: "Configuring Windows 7 for MassLynx Security".

Note: This document was written from a MassLynx perspective but applies equally to PCs for Empower use.

3. Hardware/Software Required

- Current or High Spec IBM e.g. M5x or C20x (Host) PC
- Windows 7 Professional 64 bit with valid license

Note: The PC will have one network card dedicated for a LAN Ethernet connection and a second network card to communicate with the Waters MS instrument embedded PC and any Ethernet controlled Waters inlets that are attached.

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5. PC Bios Setup

Switch on the IBM PC and press **F1** to enter the **BIOS** setup screen. Use the arrows to scroll across to each tab and set the following:

- **Power** tab - set **Hard Disk Timeout** to **Disable**
- **Advanced** tab - set **Plug and Play Operating System** to **Yes**
- **Devices** tab – **Serial Port Setup** - set **Serial Ports A** and **B** to **Enable**

Select **F10** to **Save Changes** and **Exit** – select **Yes** to accept.

6. Initial windows startup

On initial boot ensure the Windows 7 Professional 64 bit DVD is in the DVD drive of the PC and select the option to boot from CD when prompted. Ensure the Windows 7 Setup screen appears and the **Custom** installation option is selected, chose to perform a new installation of Windows 7. You will be required to enter the PC Name and description, enter appropriate details e.g. name C20x-SWTx.

If configuring for Empower the **Region, Language and Keyboard** settings must be set to English (United States)

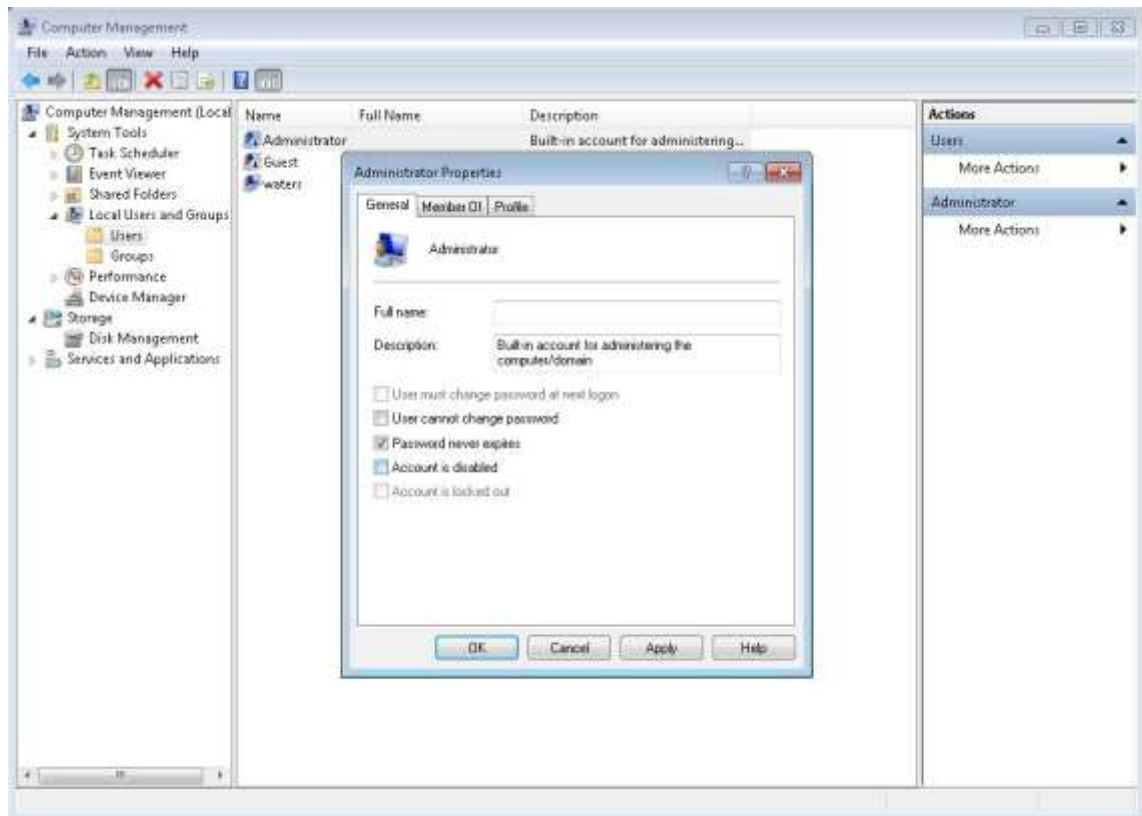
Accept the End User License agreement.

7. MassLynx V4.1 PC Configuration

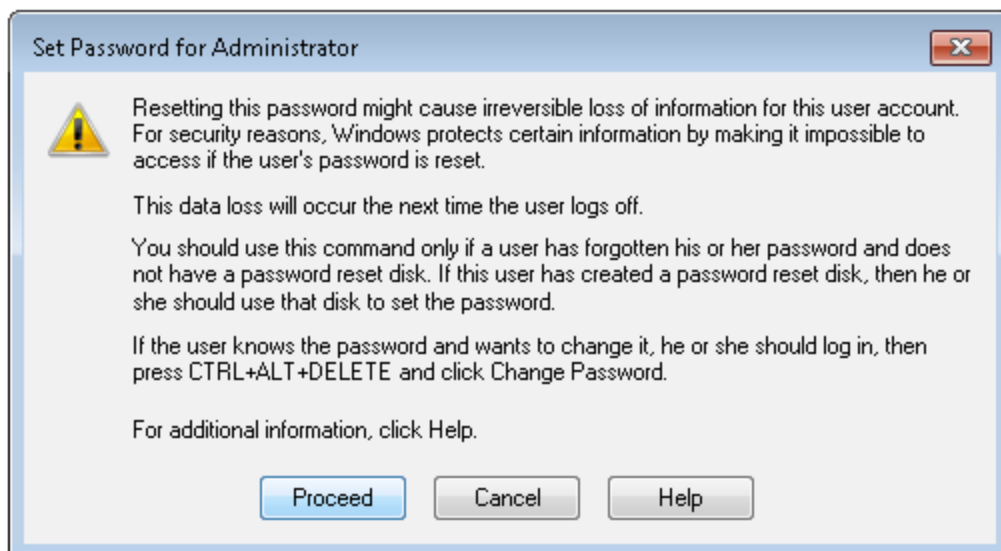
7.1 Enabling Administrator Account

By default the Administrator account is disabled in Windows 7 so you need to enable the Administrator account. From the **Start** menu right click **Computer** and select **Manage** to open **Computer Management**.

In **Local Users and Groups** click **Users**, select **Administrator**, right click and select **Properties**. Uncheck **Account is disabled** option then click **OK**.



Right click **Administrator** and chose **Set Password...** to set the Administrator account's password. Click **Proceed** to the warning dialog.



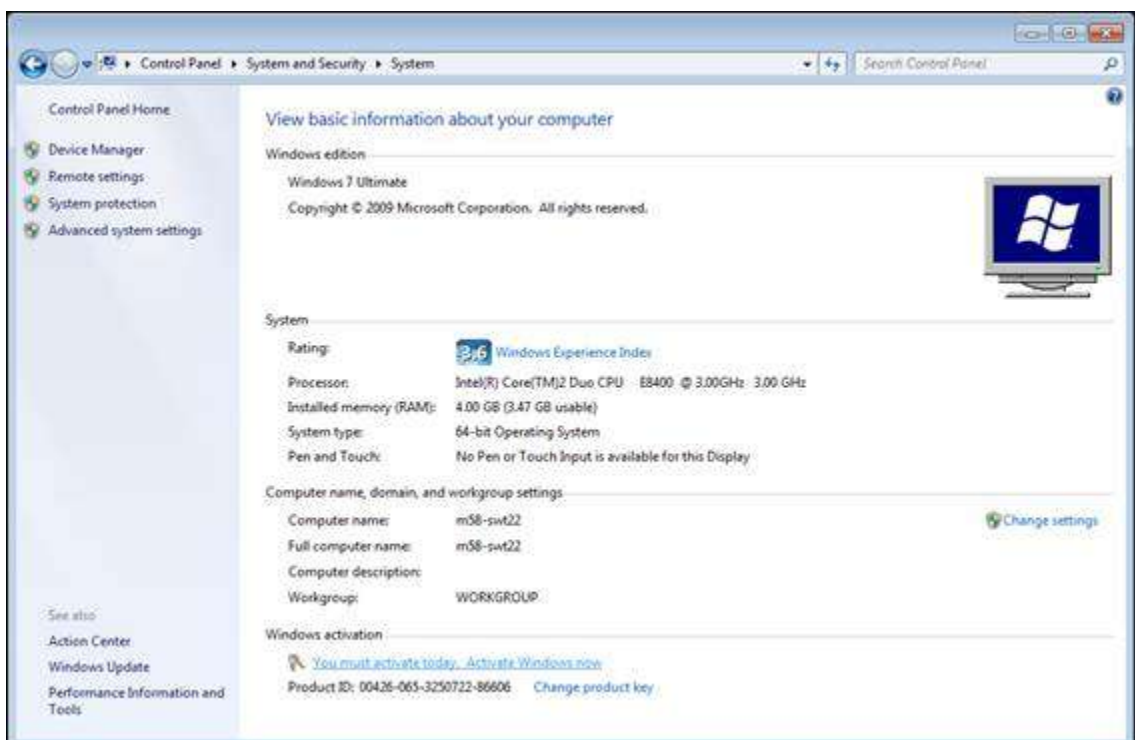
Enter the new password and click **OK**.



Note: Ensure the Administrator's password is noted and provided to the customer.

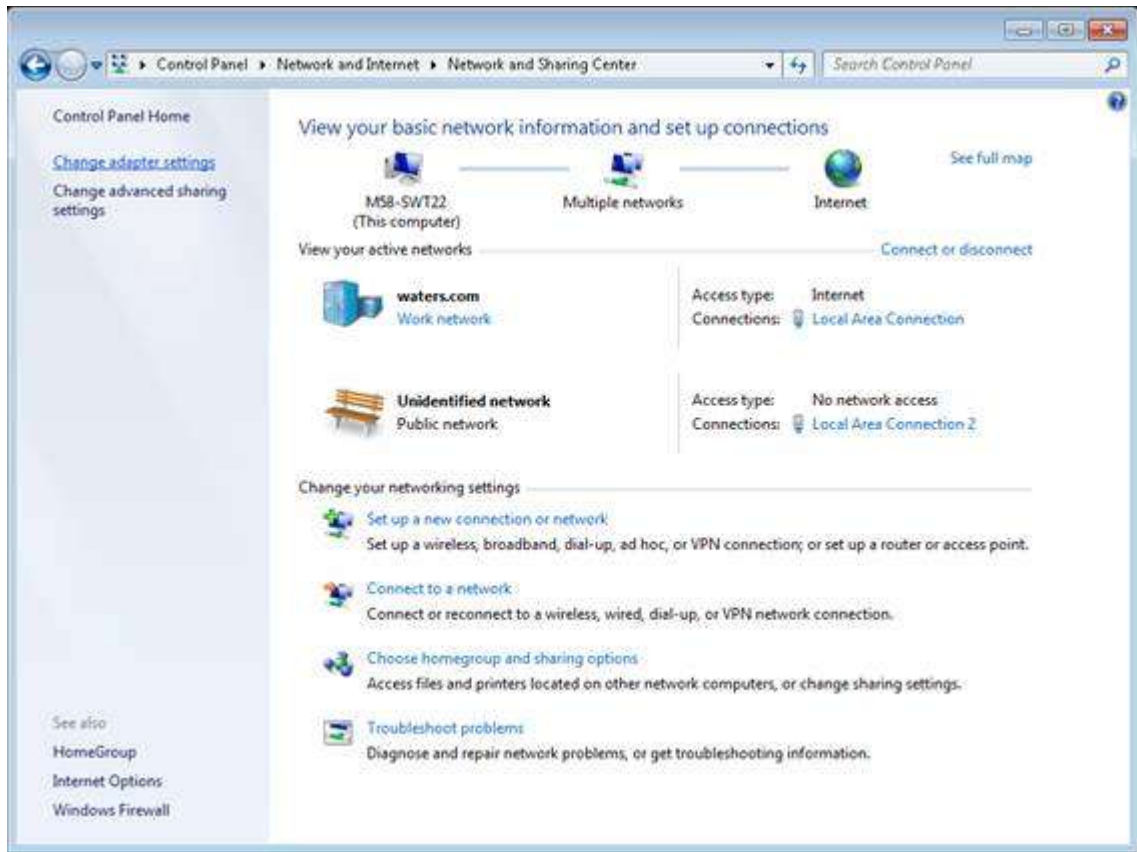
7.2 Activating Windows 7 Professional 64 bit

Login into Windows 7 as Administrator and go to **Control Panel > System and Security > System**. Click on the **Activate Windows Now** link to activate the windows. Click **Activate Windows Online**. If it is required to change the product key, use **Change product key** link.

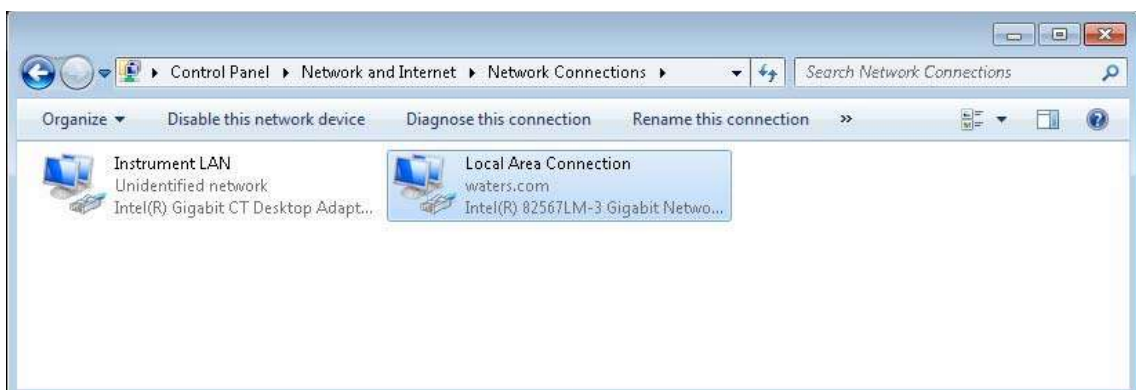


7.3 Changing Name of LANs

Go to **Control Panel > Network and Internet > Network and Sharing Center**. Here you can see all the active network connections of the PC. To change the instrument network connection to a meaningful name click **Change adapter settings**.

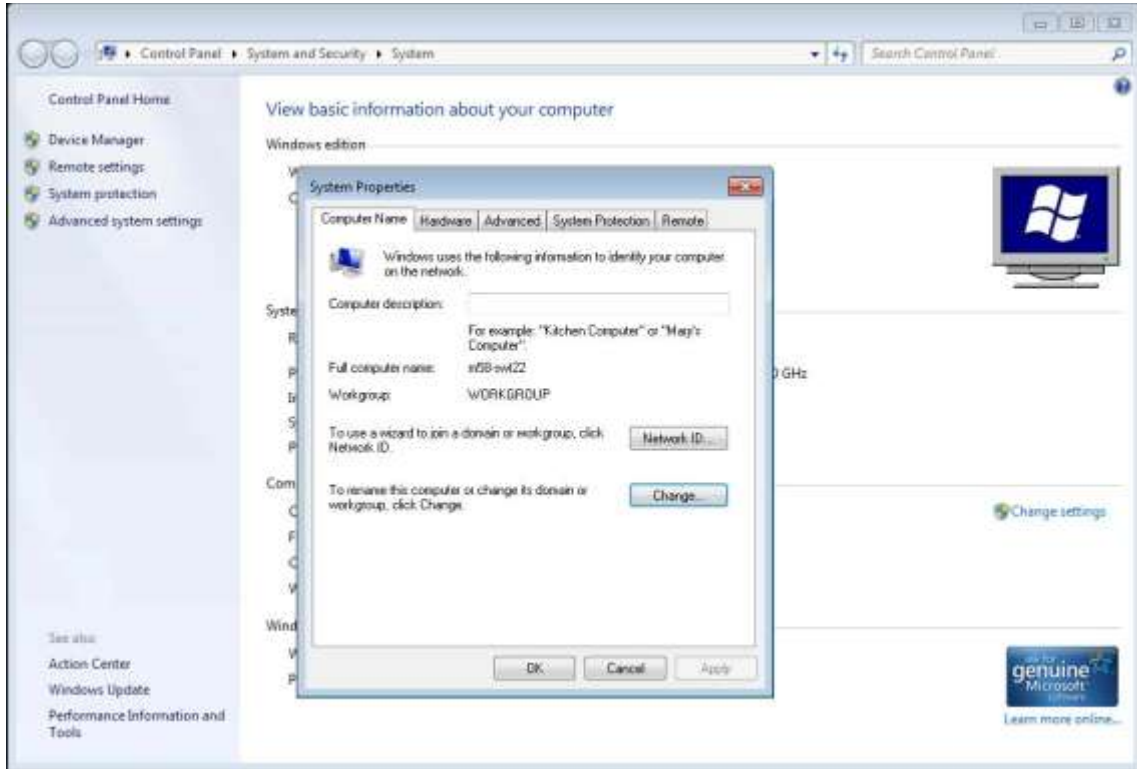


Select the Instrument Network connection and click **Rename this connection**. Change the name to "Instrument LAN".

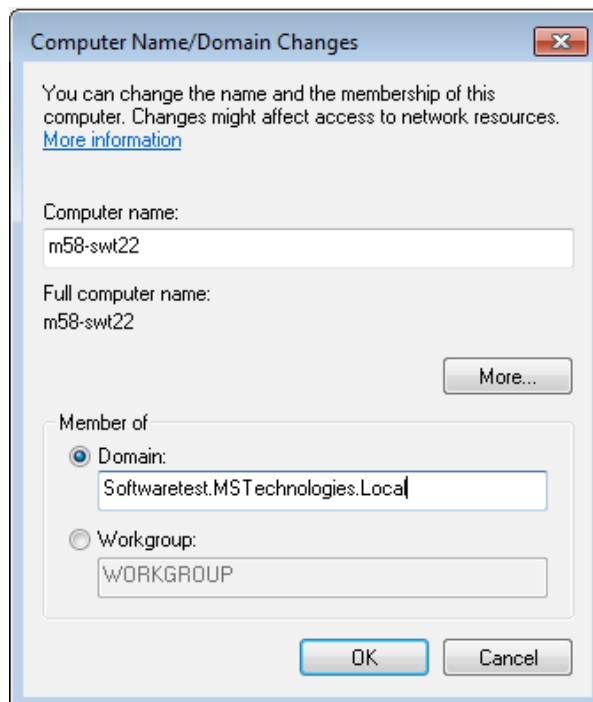


7.4 Joining the PC to a Domain

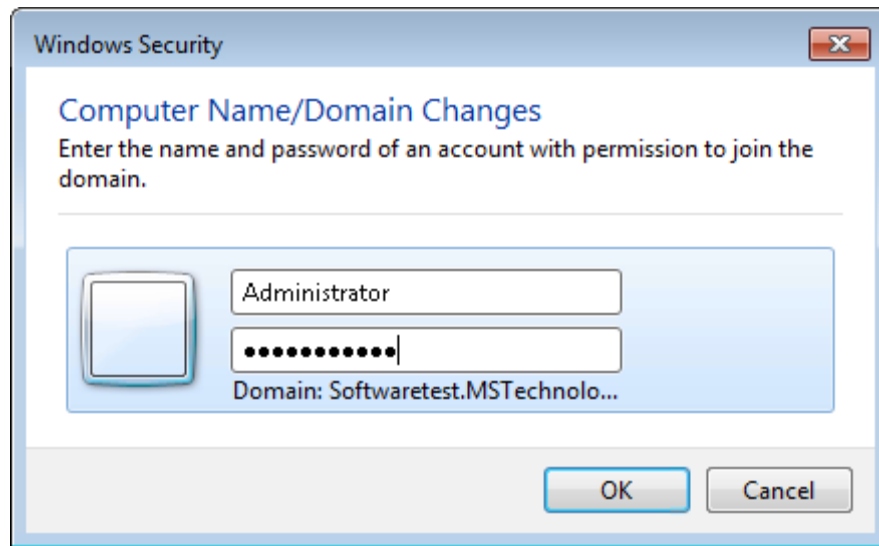
Login into Windows 7 as Administrator and go to **Control Panel > System and Security > System**. Click on **Change settings** link to launch the **System Properties** dialog.



Click **Change** and enter the required **Computer name** and **Domain**, click **OK**.

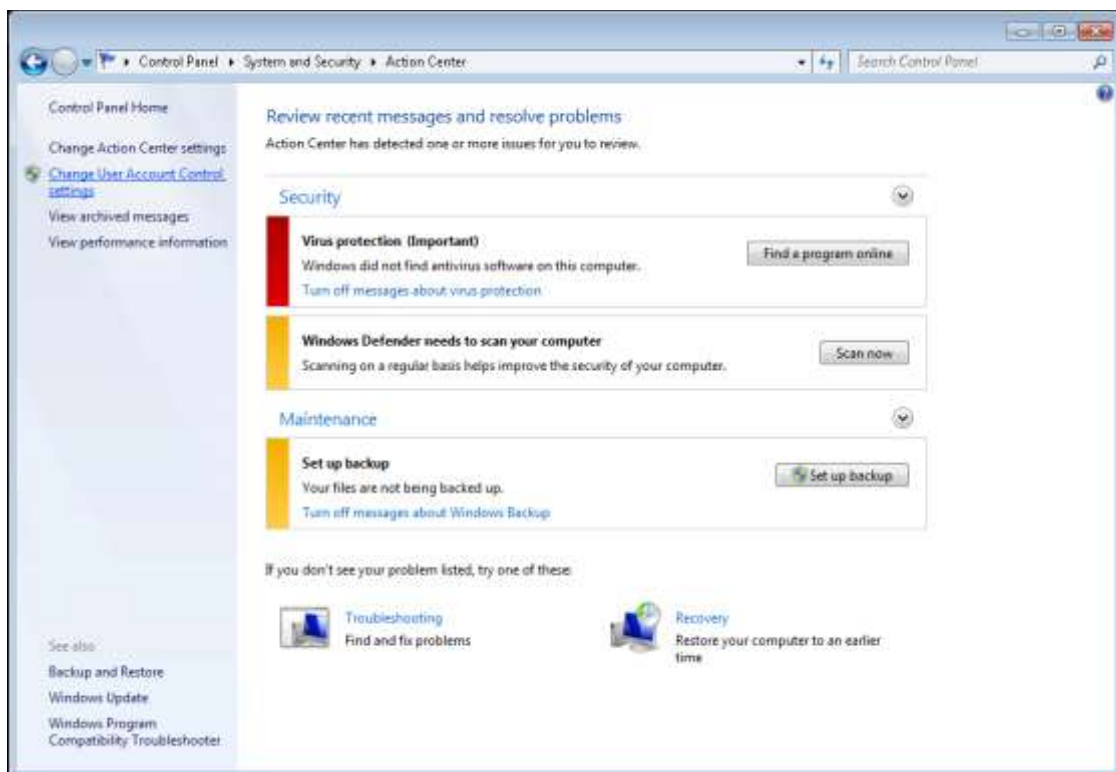


When prompted, enter the Administrator credentials of the Domain. Restart the PC to apply the changes.

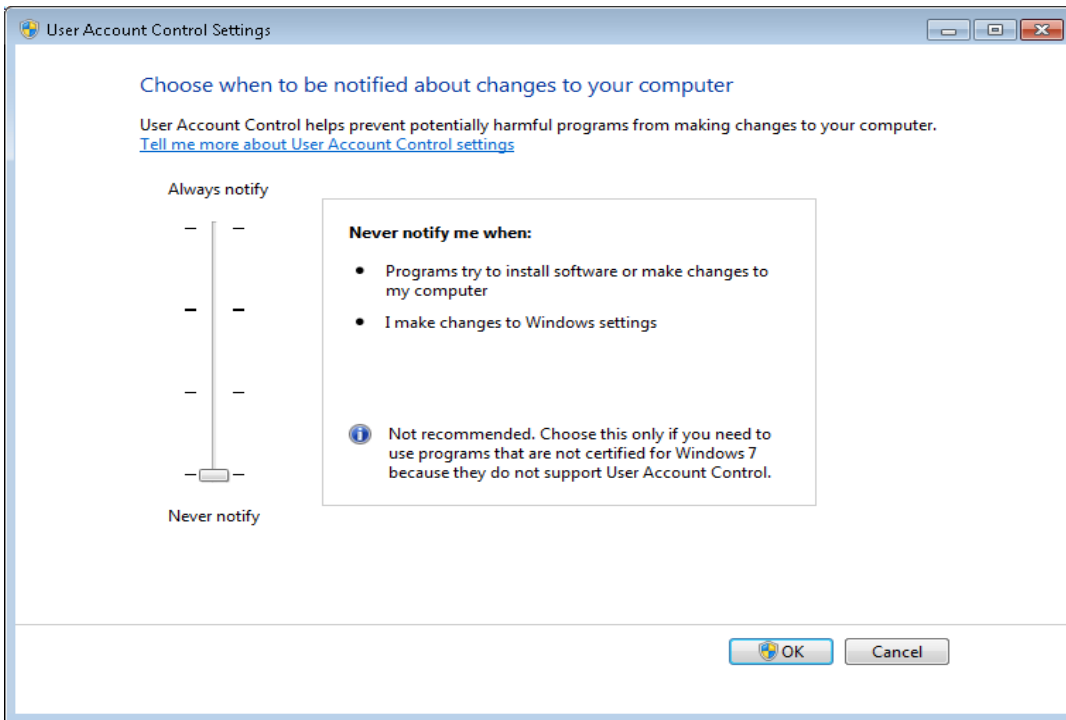


7.5 Changing User Account Control (UAC) Settings

Go to **Control Panel > System and Security > Action Center** and click on **Change User Account Control Settings** to change the notification level of the account

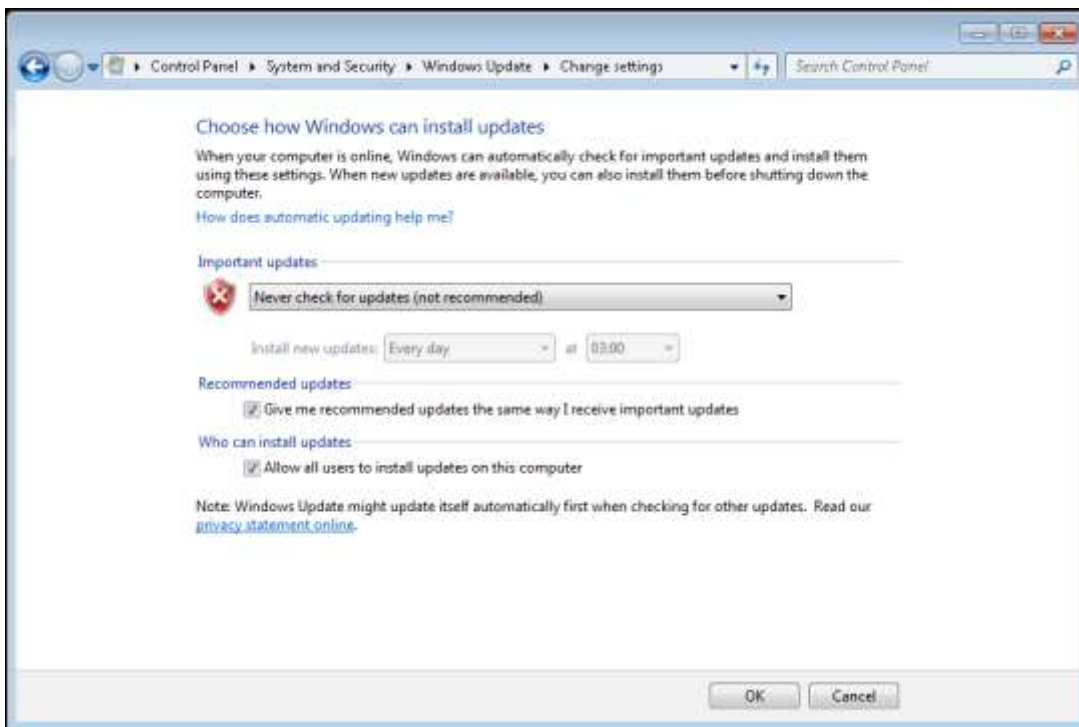


Change the level to **Never notify**, click **OK** and restart the PC.



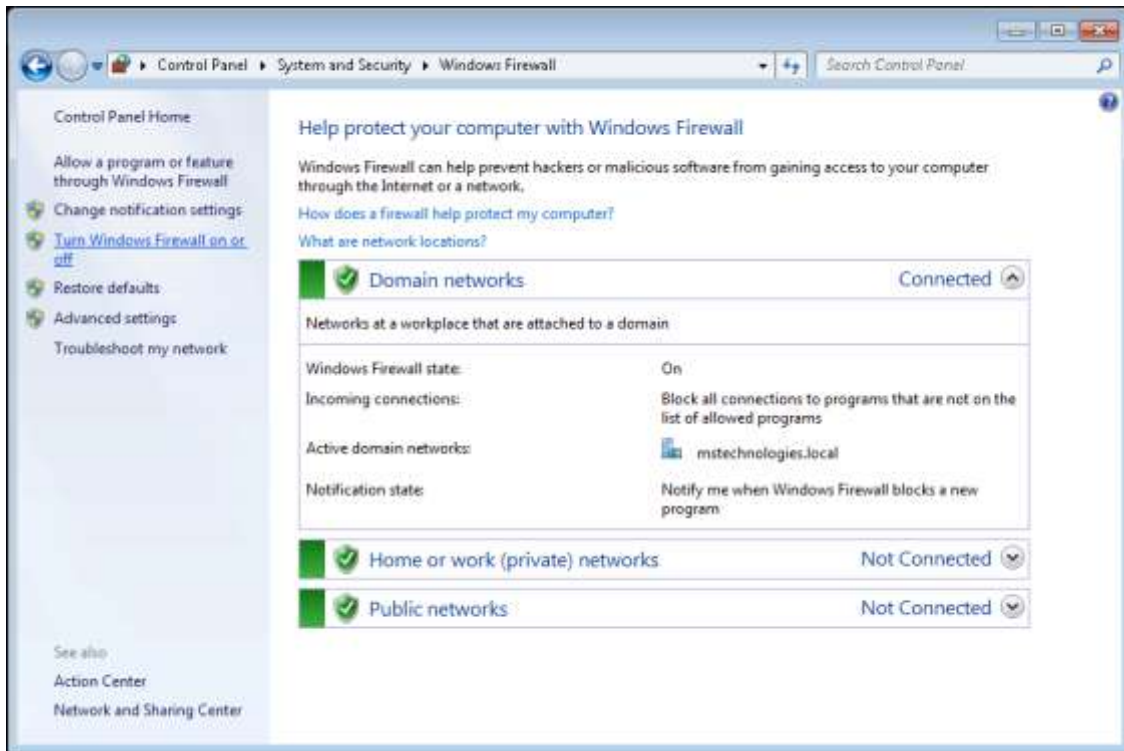
7.6 Disabling Automatic Updates

Login into Windows 7 as Administrator and go to **Control Panel > System and Security > Windows Update > Change settings**. Select **Never check for updates (not recommended)** to disable automatic updates. Click **OK** to close the Control panel.

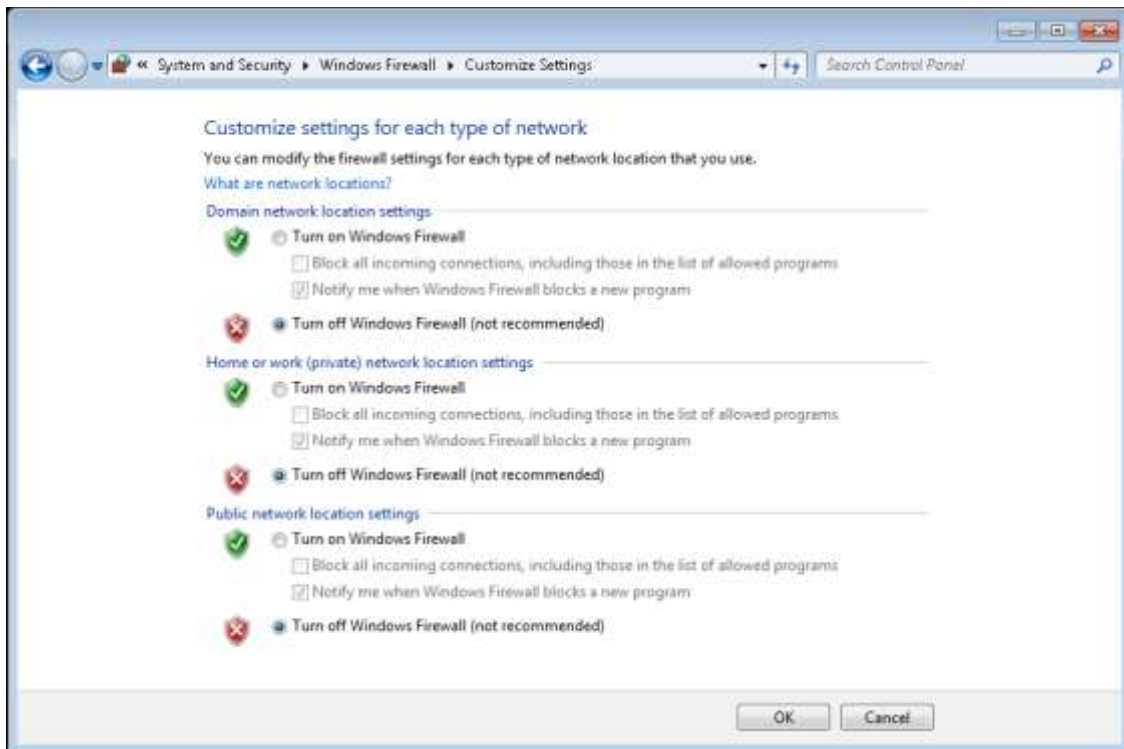


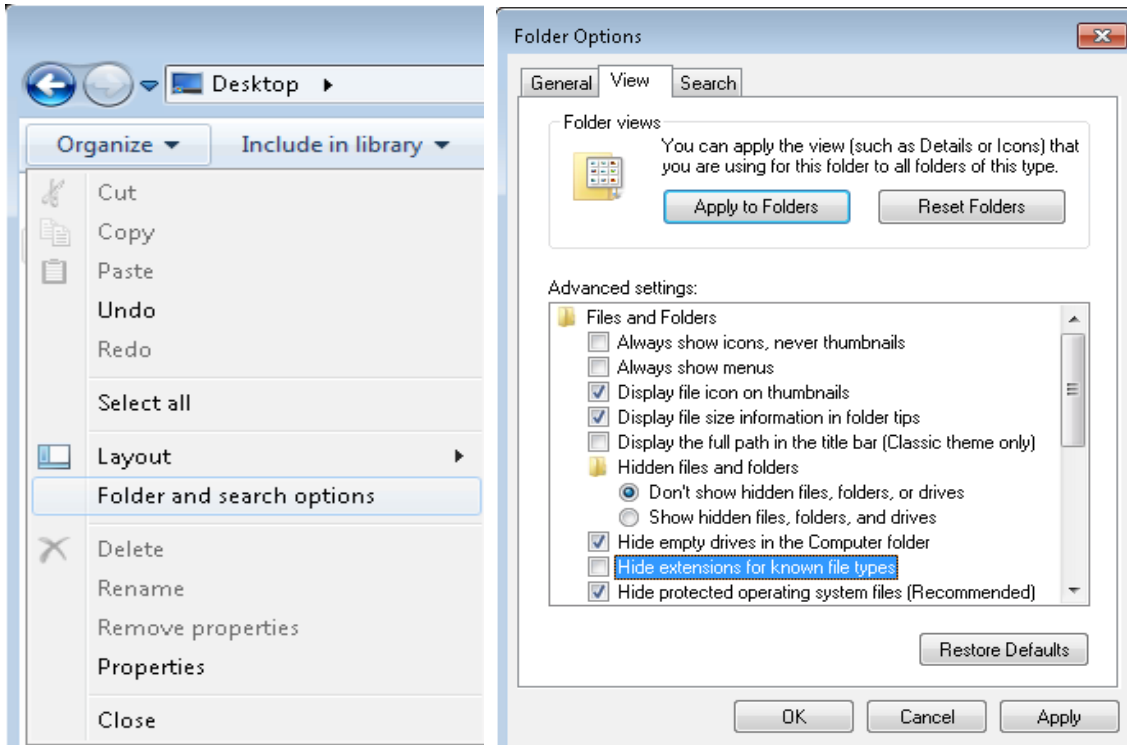
7.7 Disabling Windows Firewall

Go to **Control Panel > System and Security > Windows Firewall**. Click on the **Turn Windows Firewall on or off** link

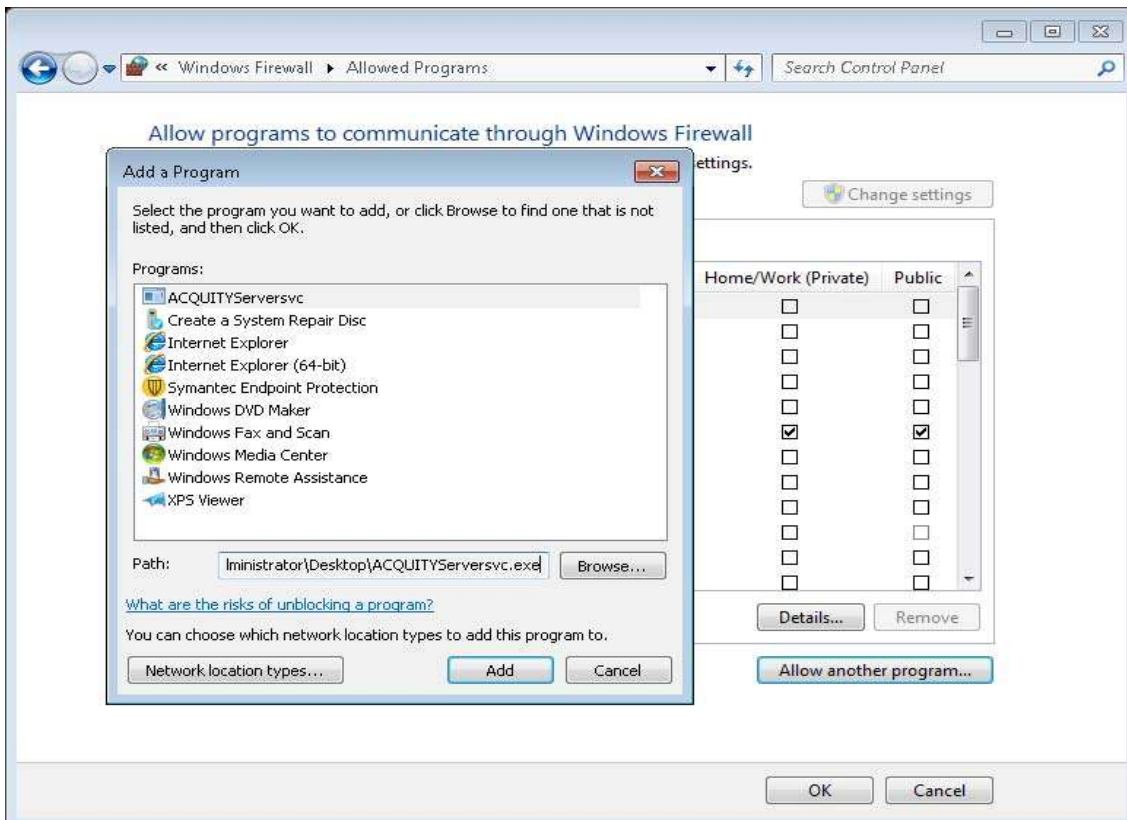


Select the **Turn off Windows Firewall (not recommended)** option of each type of network and click **OK** to close the Control Panel

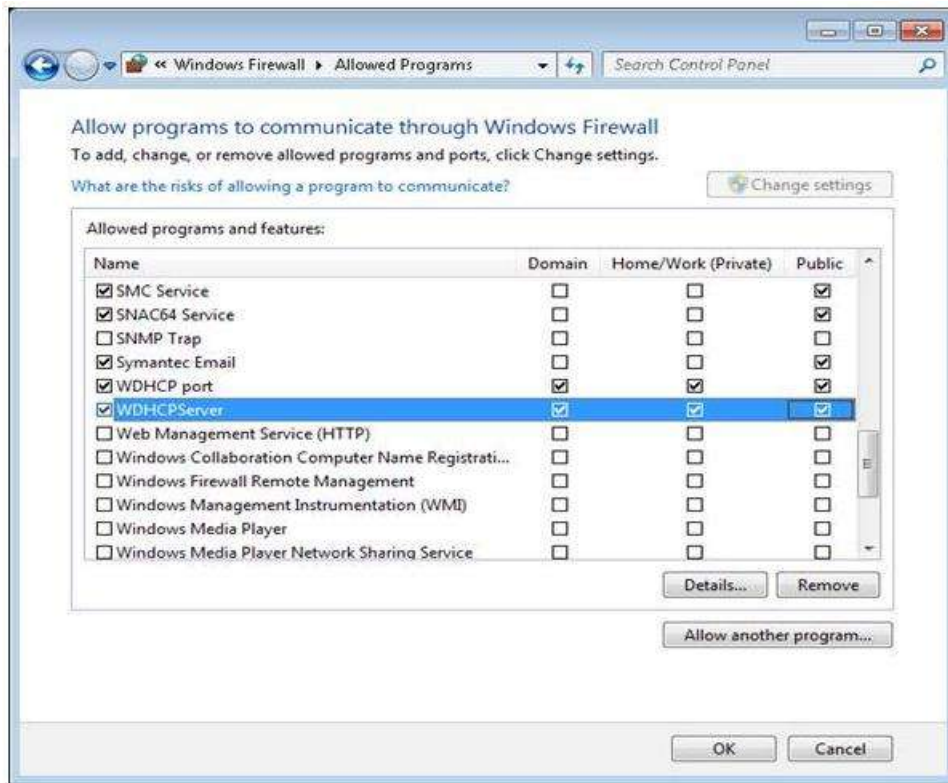




Now, Open Windows Firewall from Control panel. Click on the **Allow a program or feature through Windows Firewall** link. Press **Allow another program** which will open the **Add a Program** dialog. Browse and open the **ACQUITYServer.exe** file from desktop. Click **Add**



Check the **Domain** and **Public** option boxes.

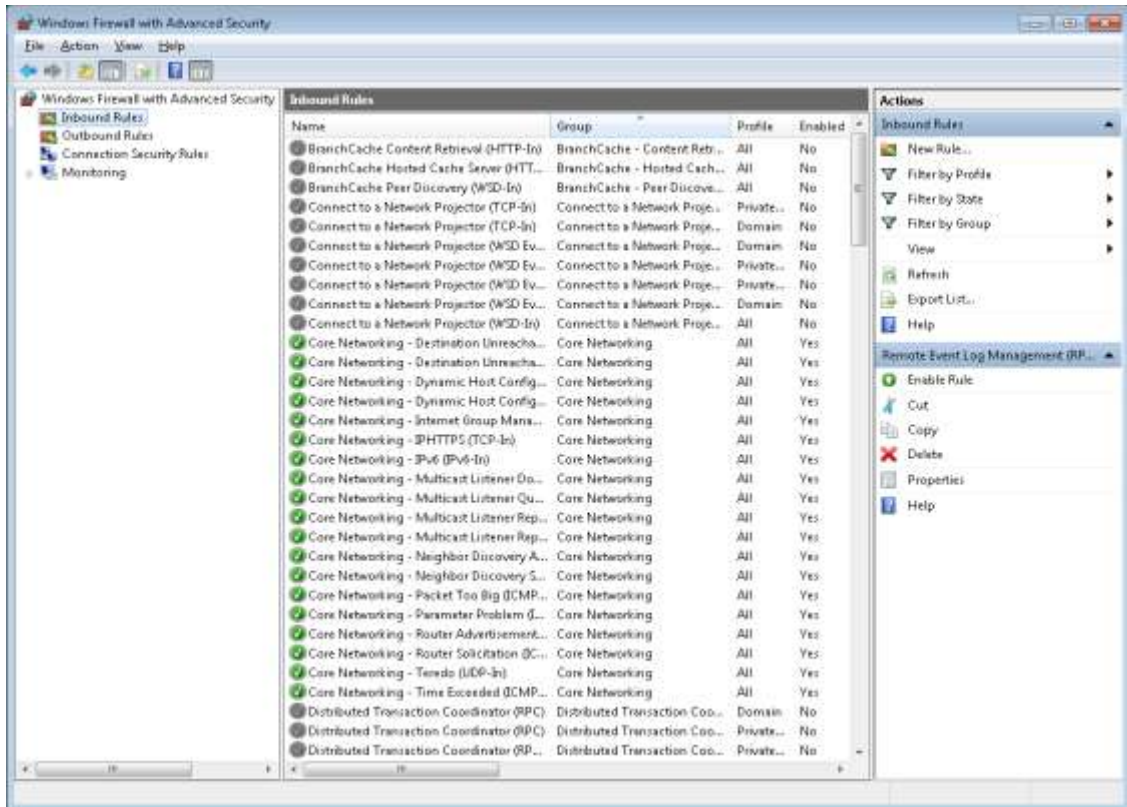


Repeat these steps for adding another program: **WDHCP Server Svc.exe**

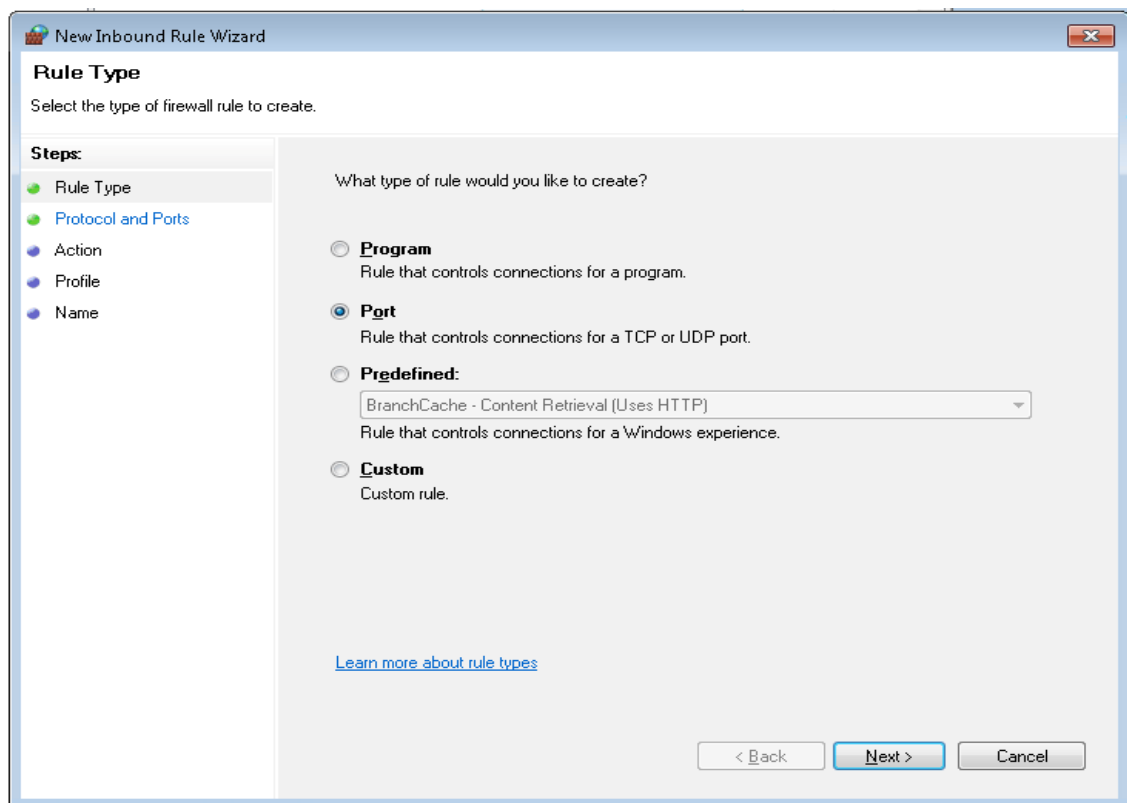
7.10 Adding WDHCP Port

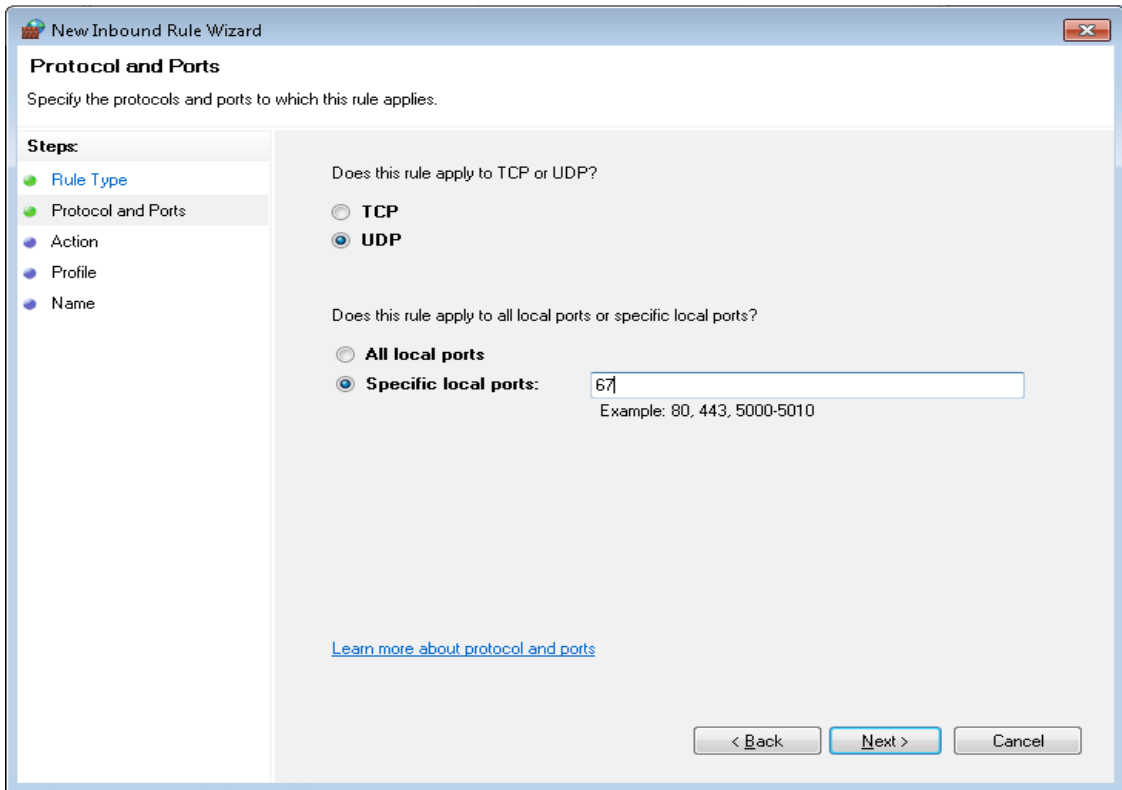
Go to **Control Panel > System and Security > Windows Firewall** and click on the **Advanced settings** link to open the windows firewall with advanced security.



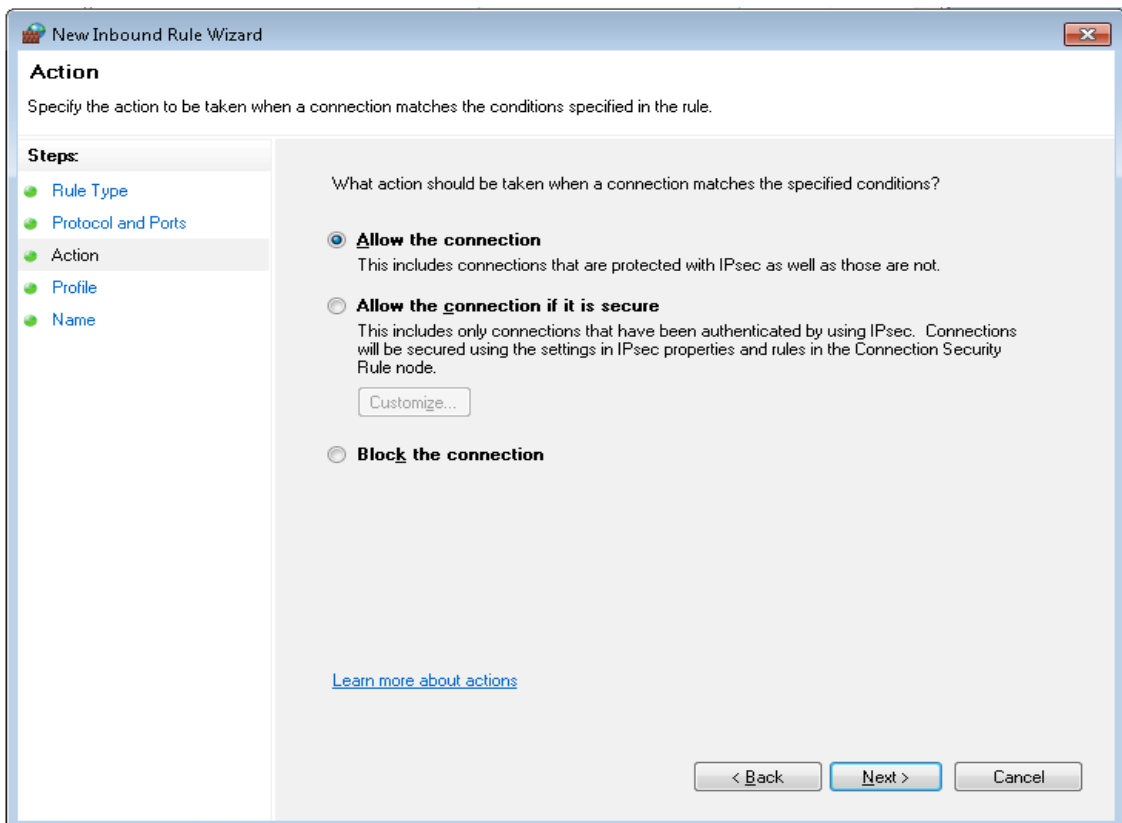


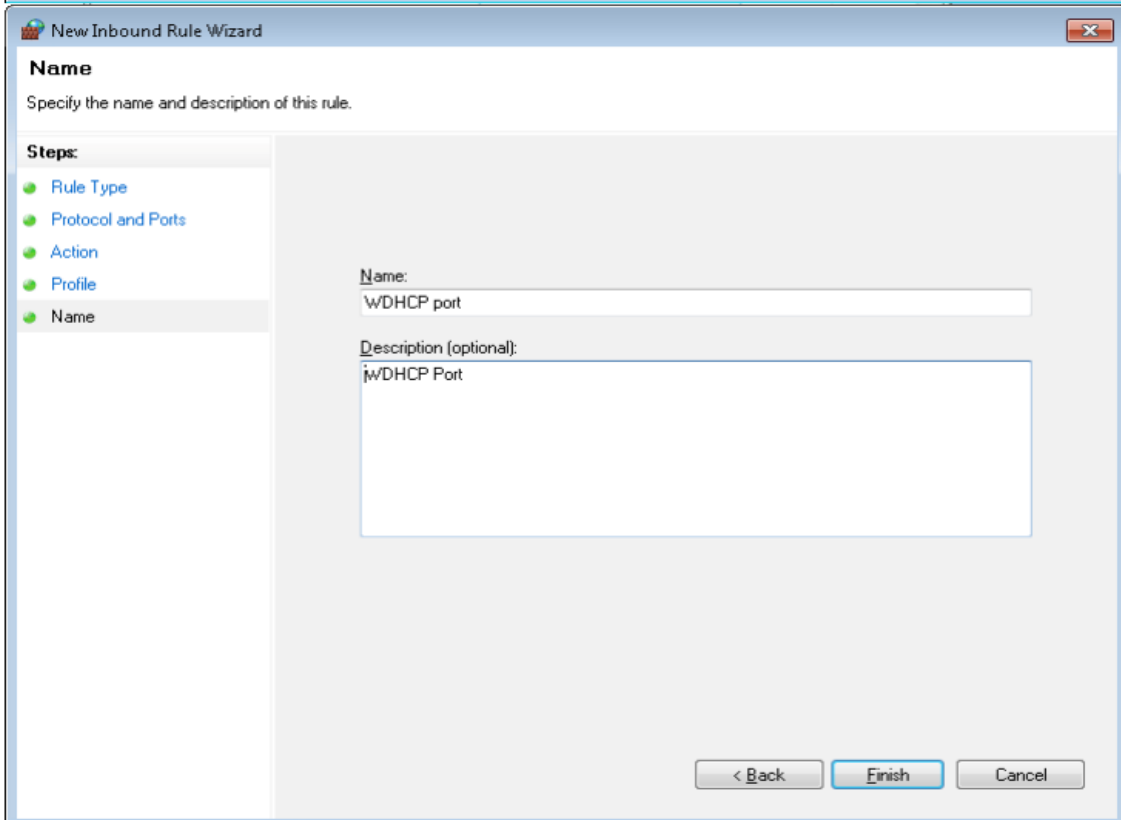
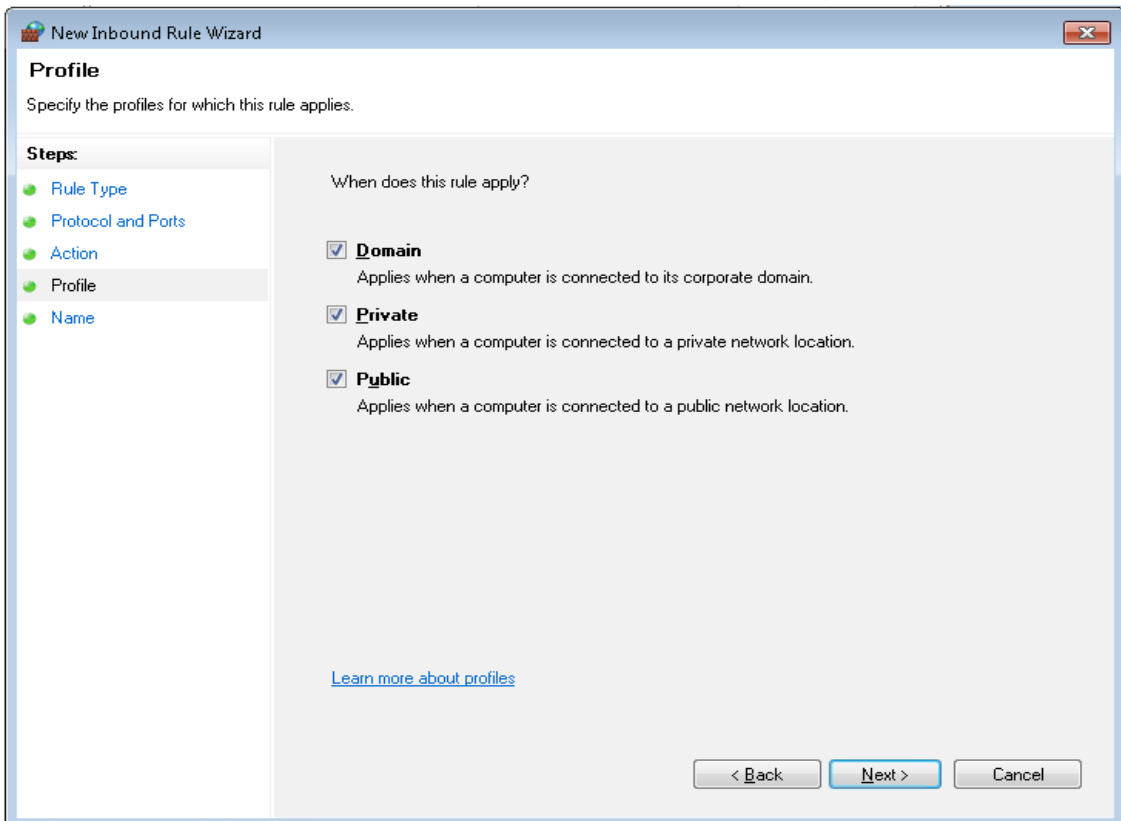
Select **Inbound Rules** and click **Action > New Rule** to open a new inbound rule wizard. Here select Rule Type as **Port** and click **Next**. In Protocol and Ports, select **UDP** option, **Specific local ports** and enter **67** and click **Next**





In **Action** page, select **Allow the connection** option and click **Next**. Check all the options which includes **Domain**, **Private** and **Public** in Profile page and click **Next**.



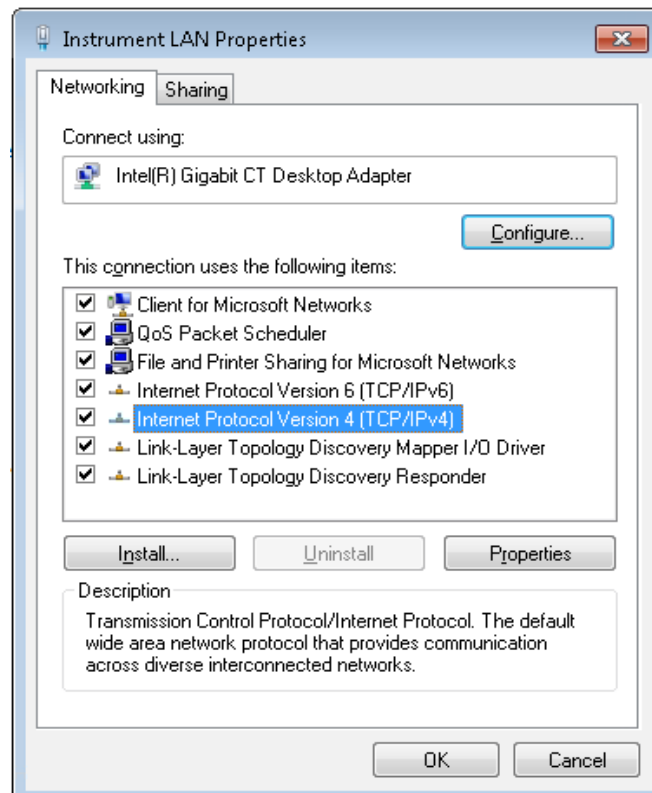
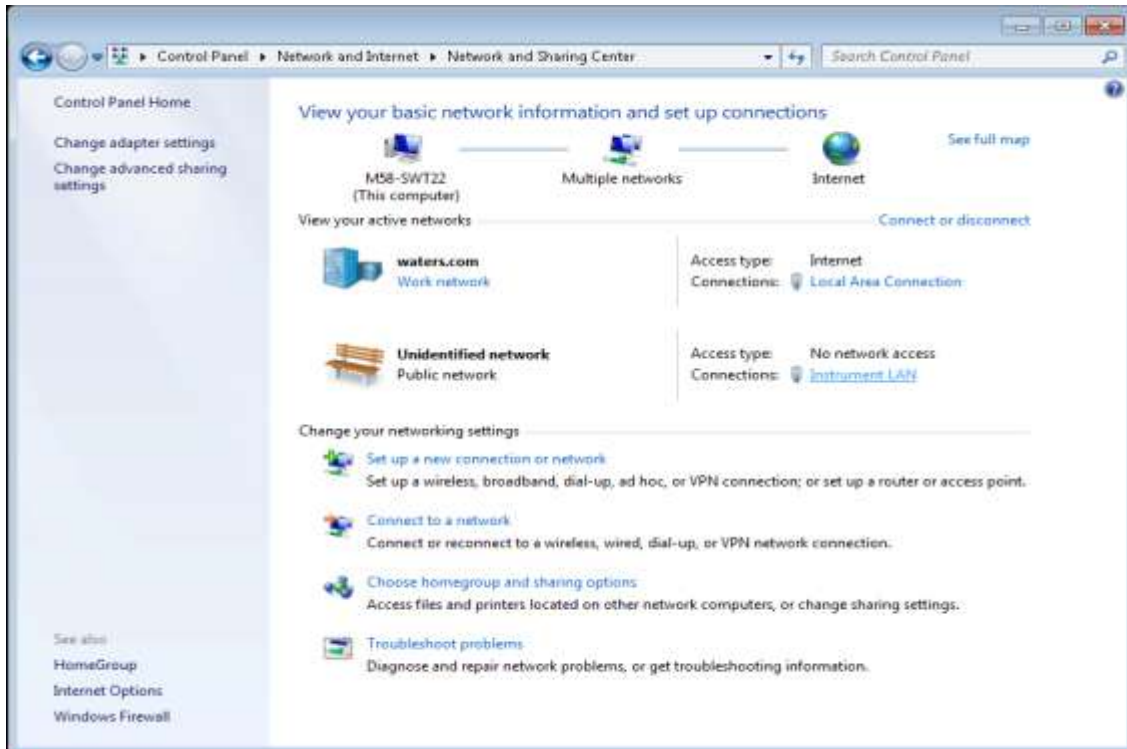


Finally, provide the **Name** and **Description** of the new inbound rule and click **Finish**

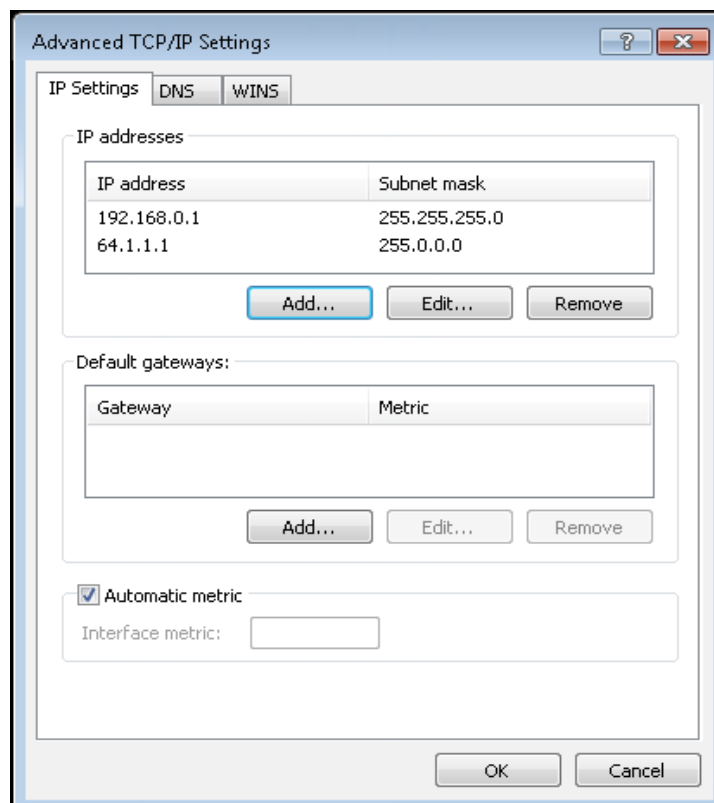
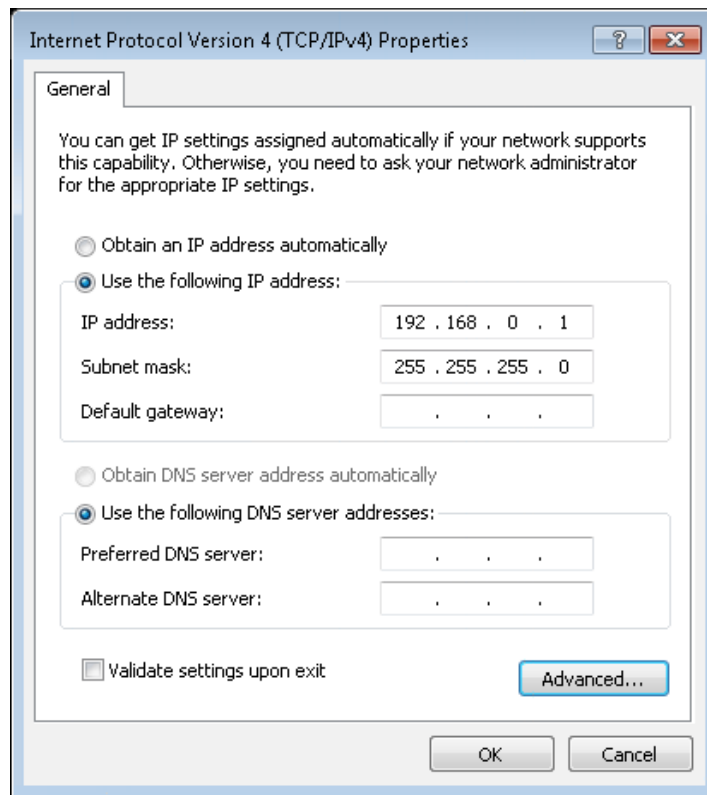
7.11 Acquisition Card Setup

Go to **Control Panel > Network and Internet > Network and Sharing Center** and click on **Instrument LAN** link and **Properties**. Select **Internet Protocol Version 4 (TCP/IPv4)**. Click on the **Properties** button.

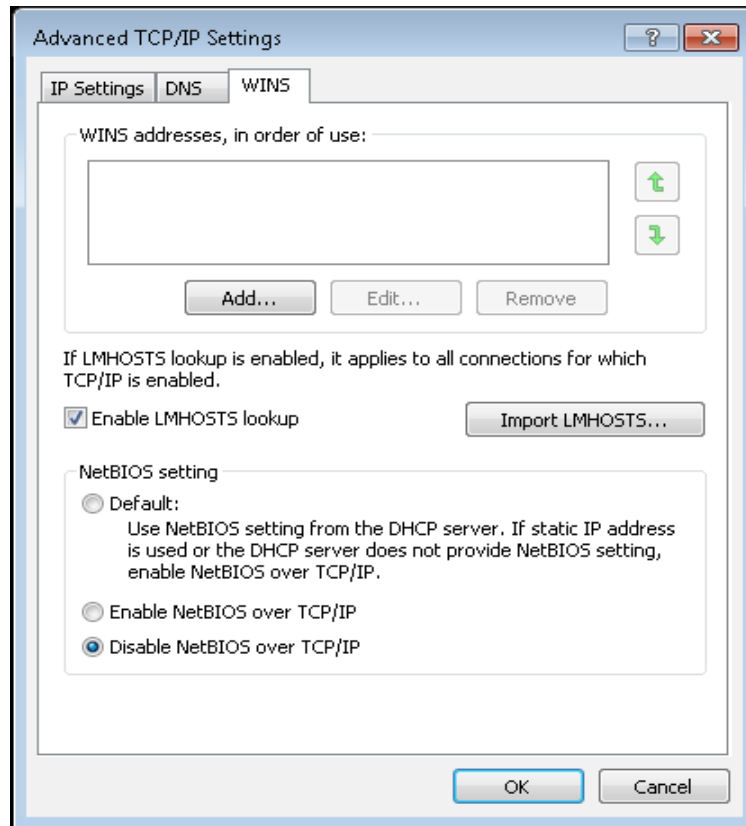
[Note: Another way to launch properties is, click on the **Change adapter settings** link and select **Instrument LAN > Properties**]



Select **Use the following IP address:** option and enter the IP address as **192.168.0.1** Click the **Advanced** button and press **Add** as well, input the IP Address **64.1.1.1** and Subnet Mask as **255.0.0.0**



Select the **WINS** tab and select **Disable NetBIOS over TCP/IP**. Click **OK** three times to exit the configuration dialogs



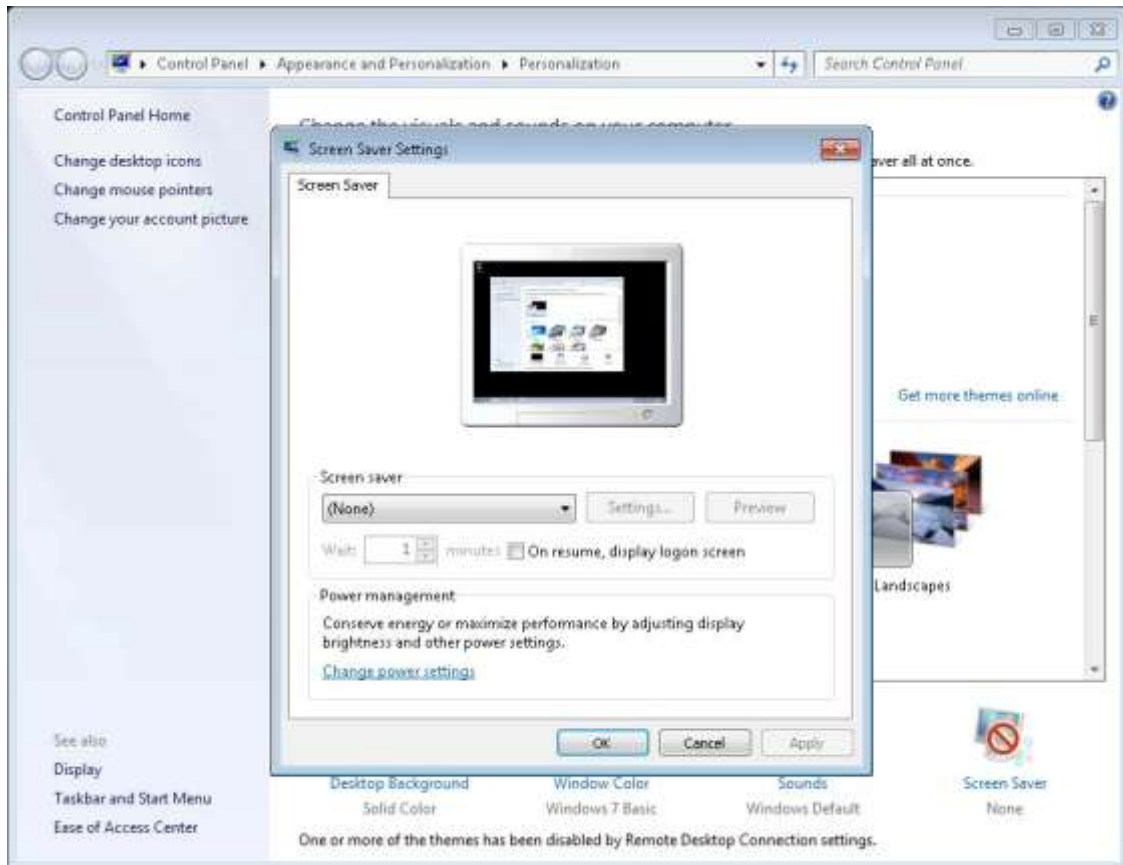
Again open the **Instrument LAN Properties** dialog, click the **Configure** button and go to the **Advanced** tab. Select the **Link Speed & Duplex** property, set the value as **Auto Negotiation**. Go to the **Power Management** tab and uncheck the option **Allow the computer to turn off this device to save power**, click **OK**

Note: For MS instruments that require FTP communications, please refer to Appendix A for setup details before proceeding.

8. General PC Configuration

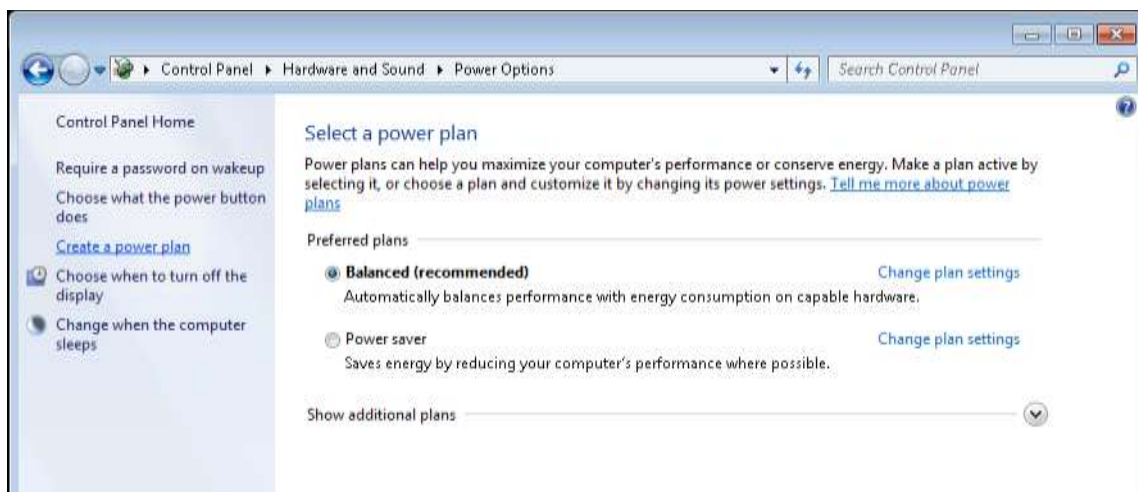
8.1 Screensaver

Go to **Control Panel > Appearance and Personalization > Personalization** and click **Screen Saver** then select the **None** option and press **OK**.

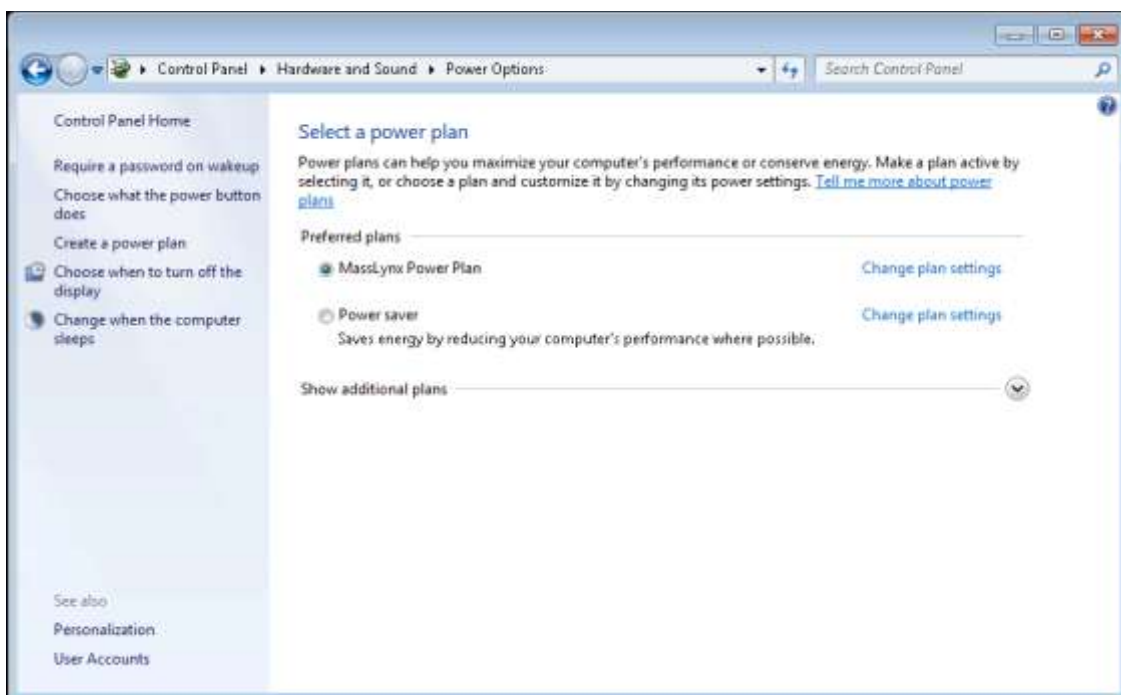
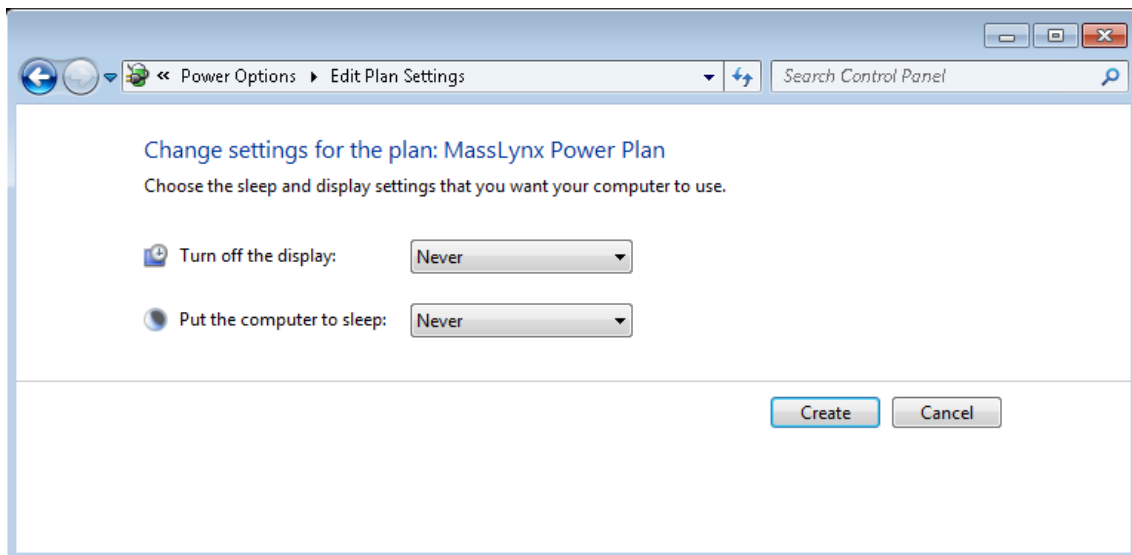


8.2 Power Options

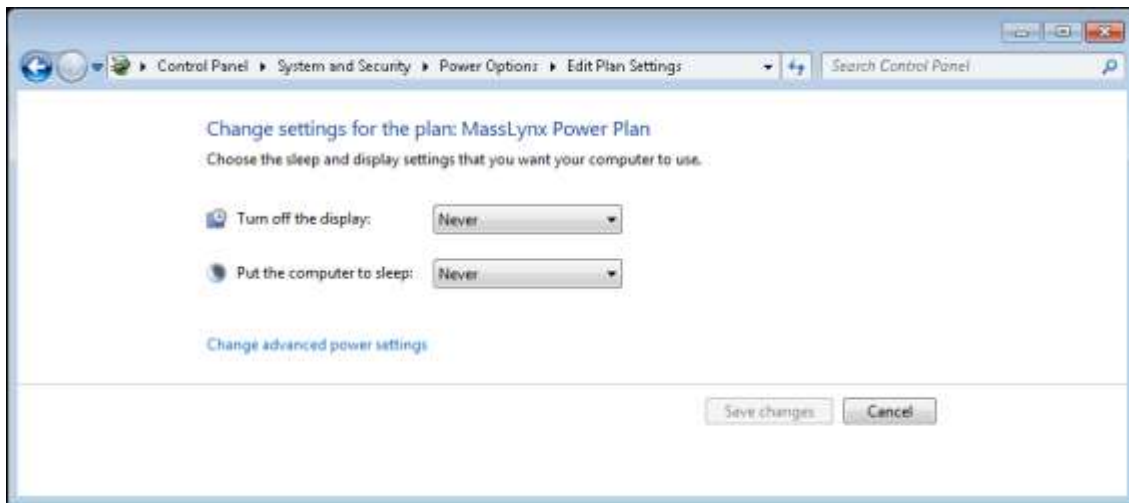
Go to **Control Panel > Hardware and Sound > Power Options** and click on **Create a power plan**. Select the **Balanced** option, enter the plan name as **MassLynx Power Plan** and click **Next**.



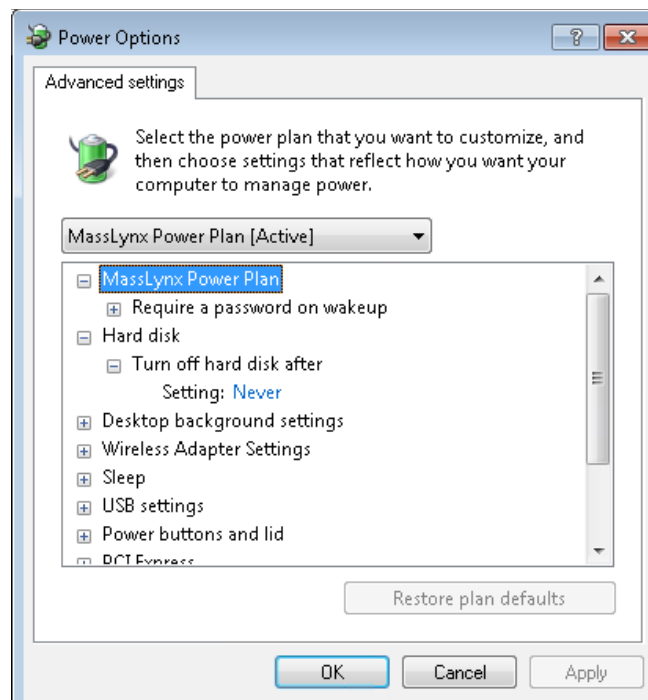
For both **Turn off the display** and **Put the computer to sleep** options, select **Never** and click **Create** to create the new power plan.



And select **MassLynx Power Plan** as default power plan. Now click on **Change plan settings** of the MassLynx Power Plan and go to **Change advanced power settings**.

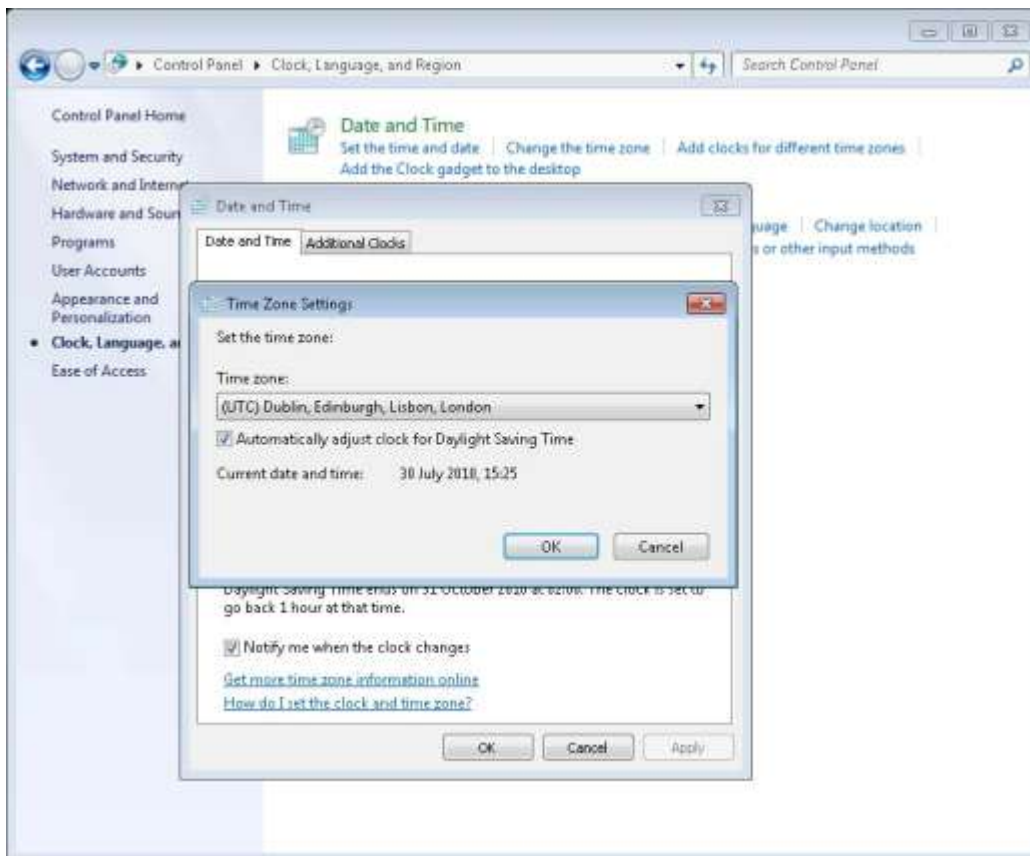


Expand the **Hard disk** option and change the **Setting** to **Never**. Click **OK**



8.3 Date and time

Go to **Control Panel > Clock, Language and Region** and click on **Date and Time**. Here press **Change time zone** button and ensure that **Automatically adjust clock for Daylight Saving Time** is checked.



Appendix A: Setting up FTP Communications for MS Control

Note: If you are not sure as to whether your MS needs FTP communications to be setup, please refer to [MassLynx Communications Troubleshooting Guide](#), Appendix C for a list of MS instruments and their associated communication protocols.

If the PC has a Waters image follow the instructions from Appendix A Section i)
If the PC does not have a Waters image go to Appendix A Section ii)

i) Preconfigured Waters Image

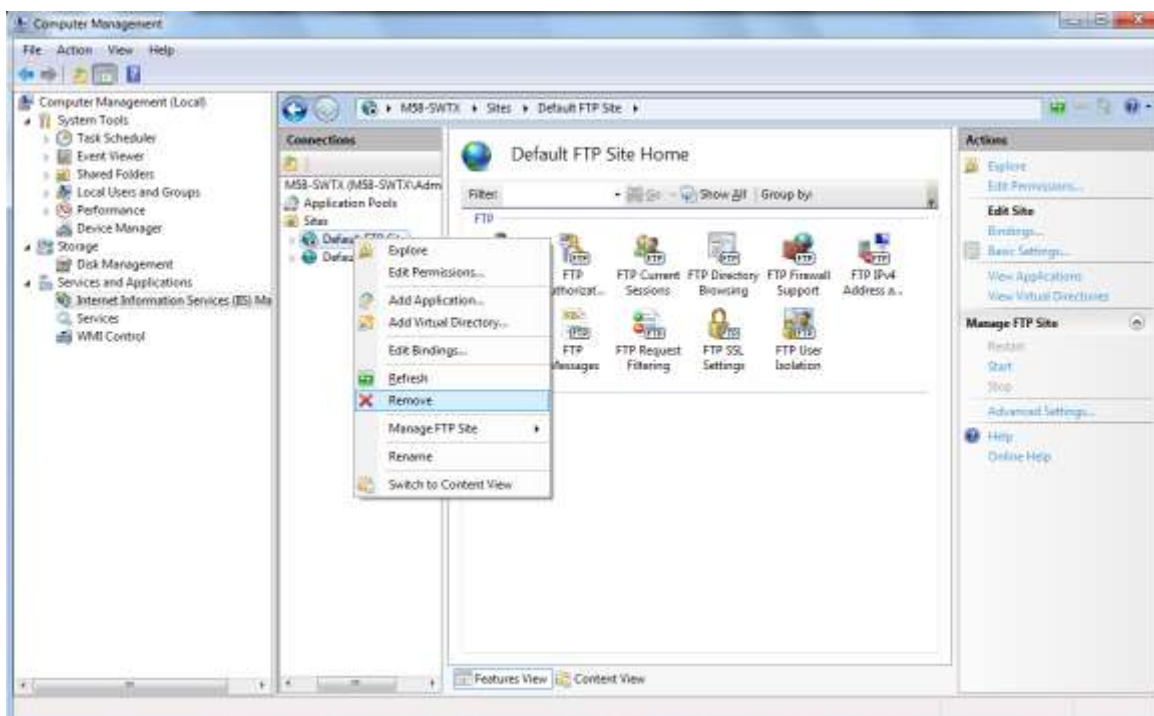
The Waters image is not fully configured for FTP boot sequence instruments. To use the Waters image the following settings need to be changed:

- Enable **Anonymous Authentication** in the **Default FTP site**.
- Enable Basic Authentication for the Micromass account in the **Default FTP Site (FTP Authentication Rules, allow Micromass account)**
- Firewall exceptions

Alternatively, and usually more easily, uninstall the FTP service as detailed below, then follow the instructions from Section ii)

To uninstall the FTP service:

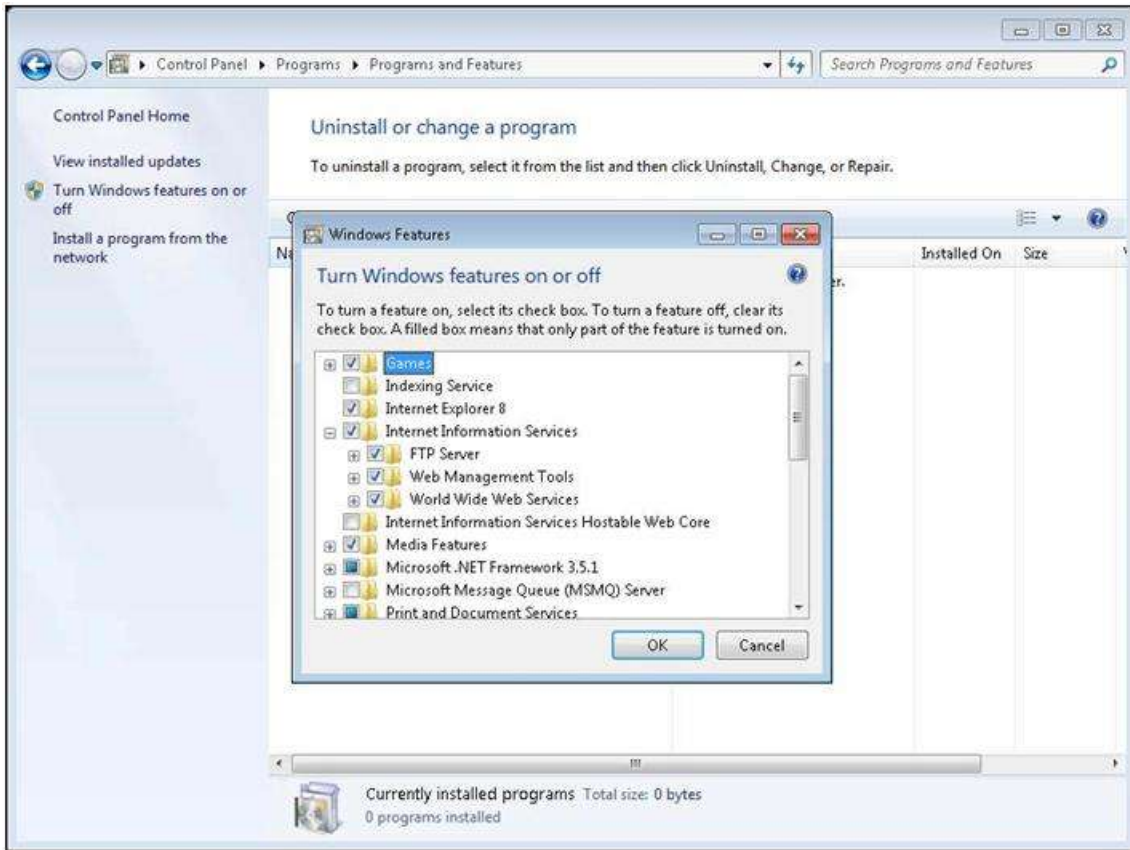
Right click **Computer** and select **Manage** to open **Computer Management**. Browse to **Services and Applications** > **Internet Information Services (IIS) Management**. In **Connections** expand the tree and select **Sites** > **Default FTP Site**, right click and select **Remove**.



Confirm the removal then proceed with the instructions in Section ii).

ii) Installing Internet Information Services (IIS)

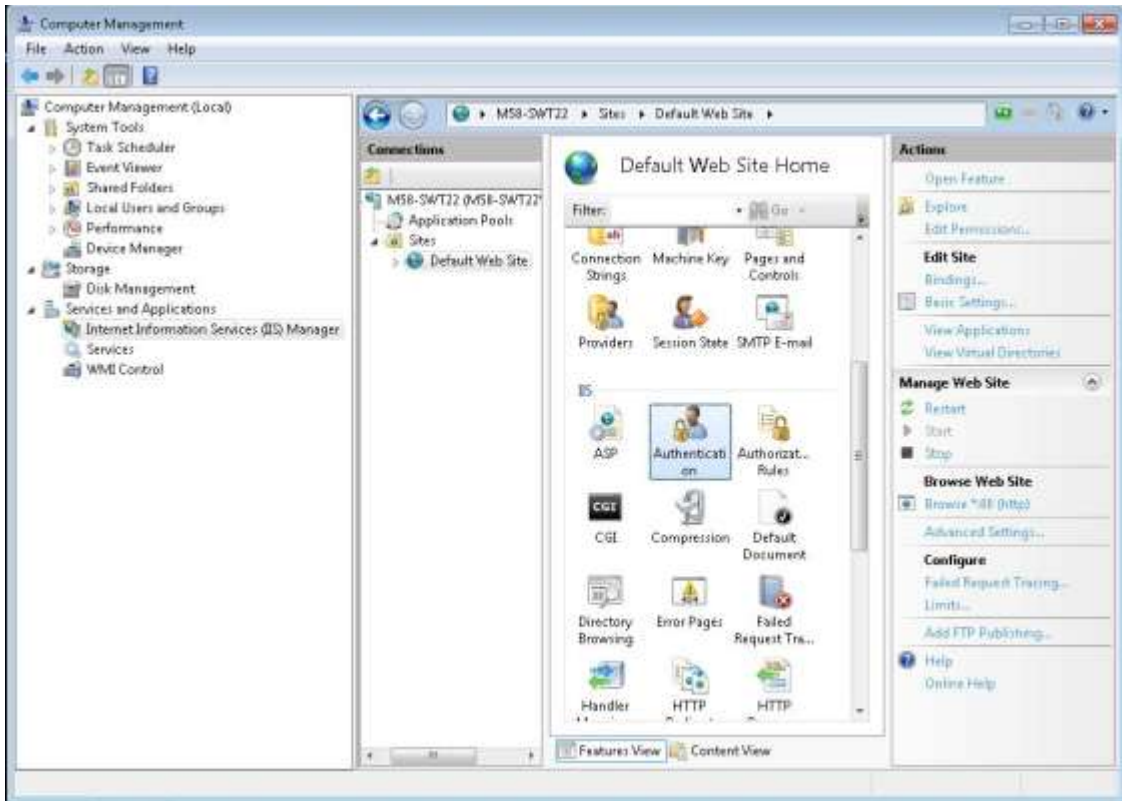
Go to **Control Panel > Programs > Programs and Features** and click the **Turn Windows features on or off** link. Select all the options of **Internet Information Services** and click **OK** to complete the installation. It takes few minutes to configure components.



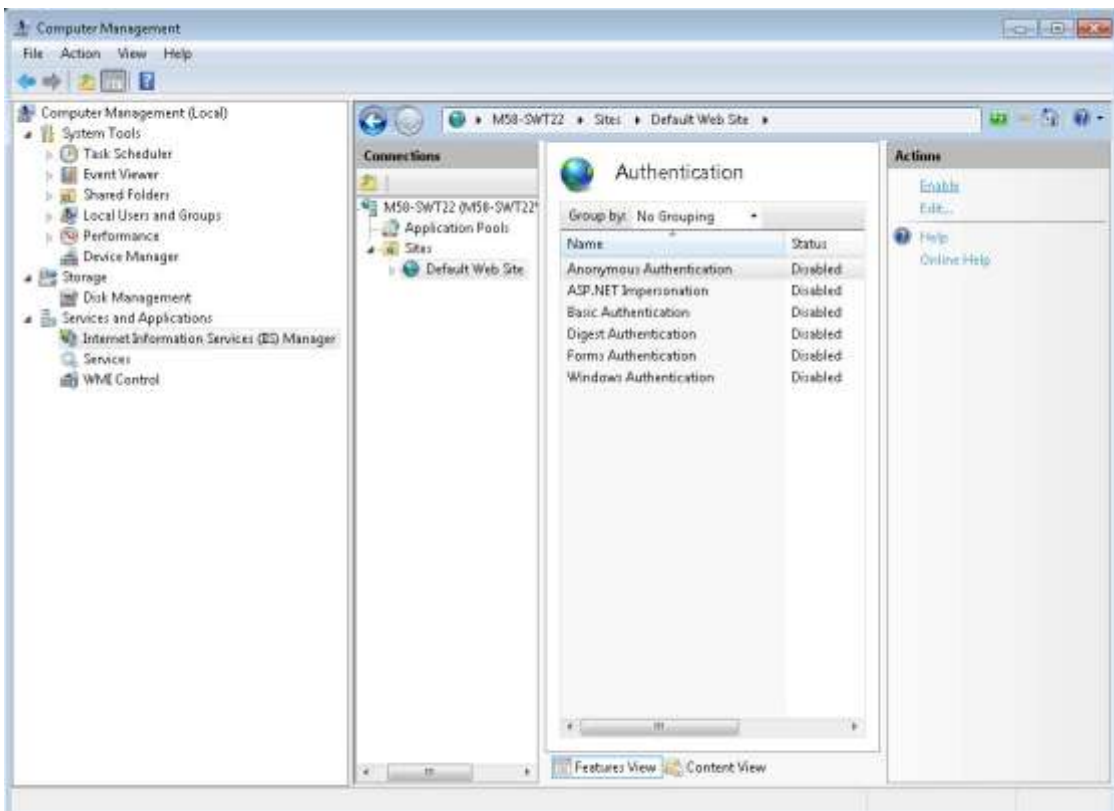
iii) IIS Properties Setup

Right click **Computer** and select **Manage** to open **Computer Management**. Select Internet Information Services (IIS) Manager.

In **Connections** expand to **Default Web site**. From the bottom of the tab select **Features View**. Go to the **IIS** section.



Double click on **Authentication**. Select **Anonymous Authentication**, click **Enable** in **Actions** which enables the anonymous authentication.



iv) Modules

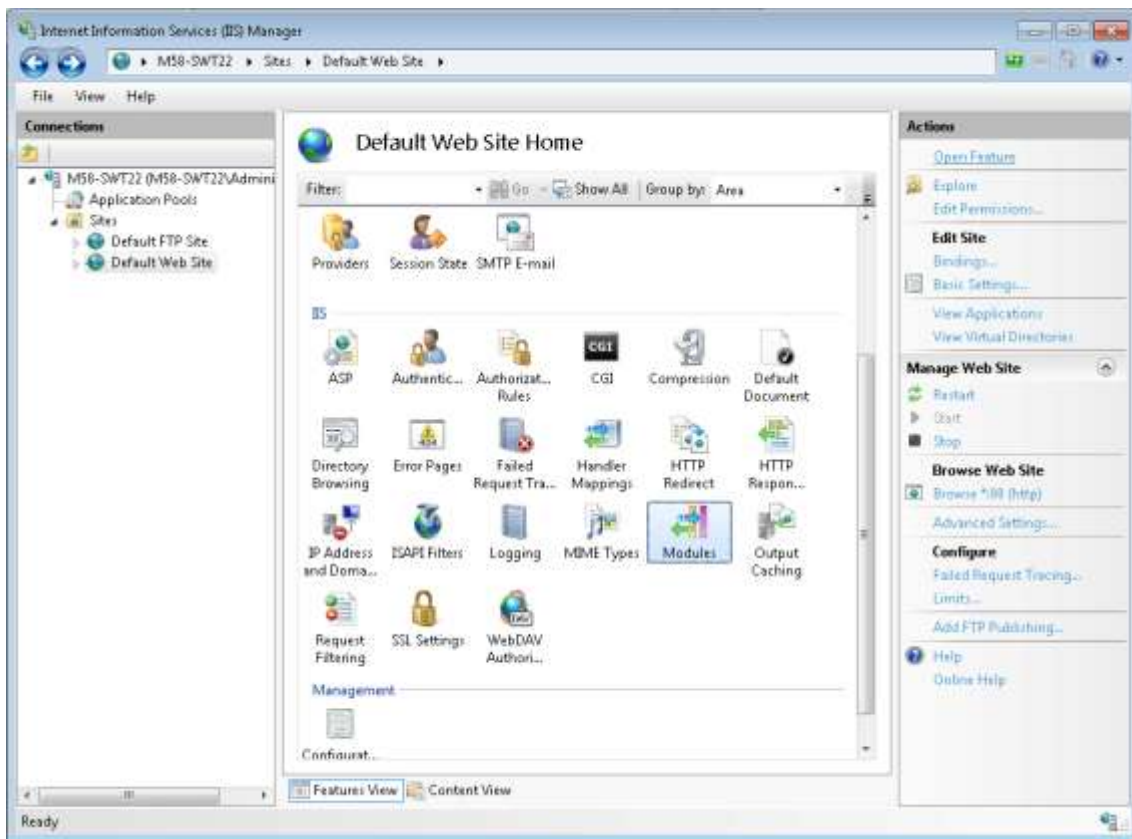
Note: Depending on the image of Windows 7 Professional 64 bit installed, the steps in red may not apply and may be skipped

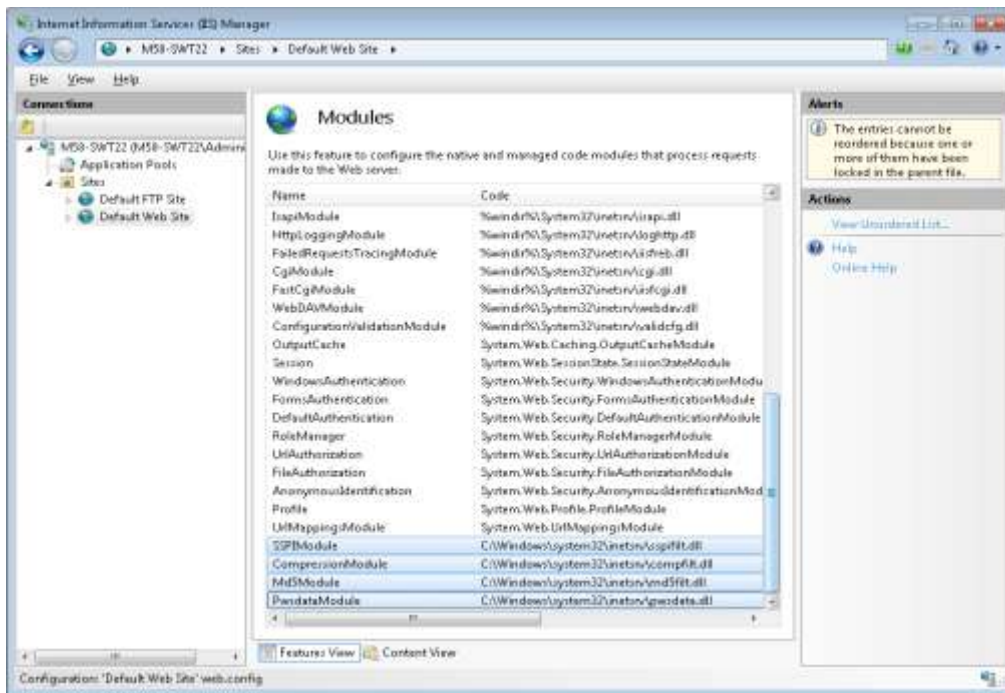
It is recommended to add modules instead of filters in Windows 7. Copy the files compfilt.dll, md5filt.dll, pwsdata.dll and sspifilt.dll from the Windows7-IISModules folder (attached to the same service note as this document) and paste into the folder: **"C:\Windows\System32\inetsrv"**

Note: You must unzip this folder first.

Then, copy the **"Install_IIS_Modules.bat"** file from this to your desktop and run the batch file which installs the above said four IIS Modules

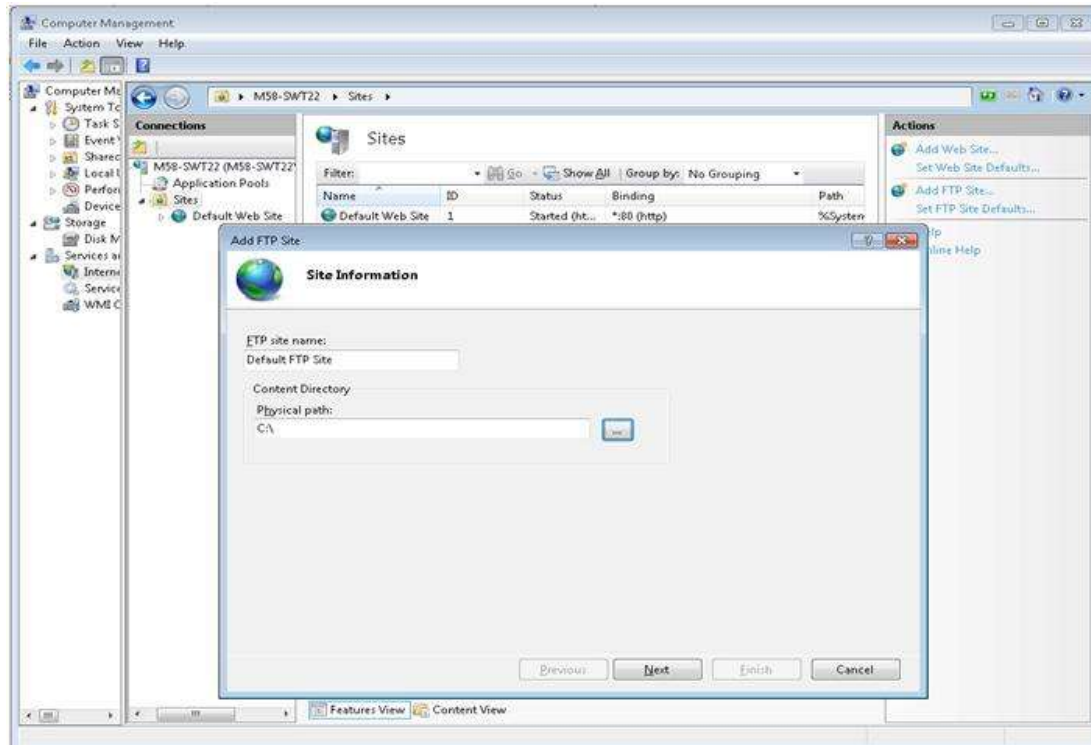
Now, go to **Control Panel > System and Security > Administrative Tools** and open the **Internet Information Services (IIS) Manager**. Select **Default Web Site > IIS > Modules**. In the **Action** pane click on the **Open Feature** link to show the recently configured modules.



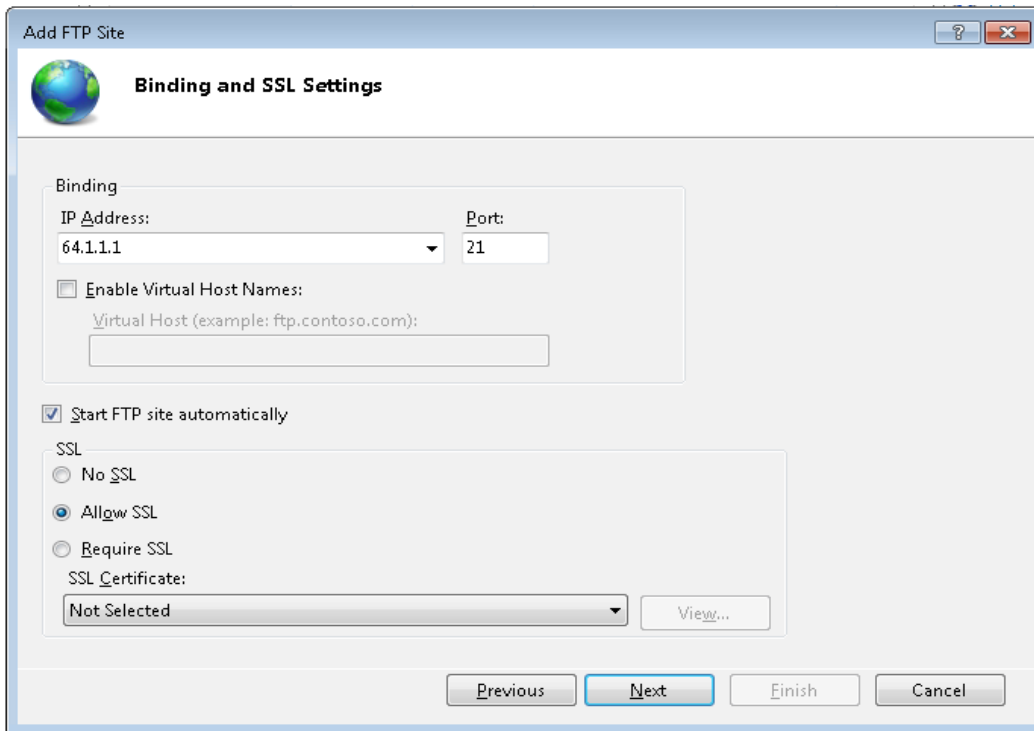


v) FTP Service

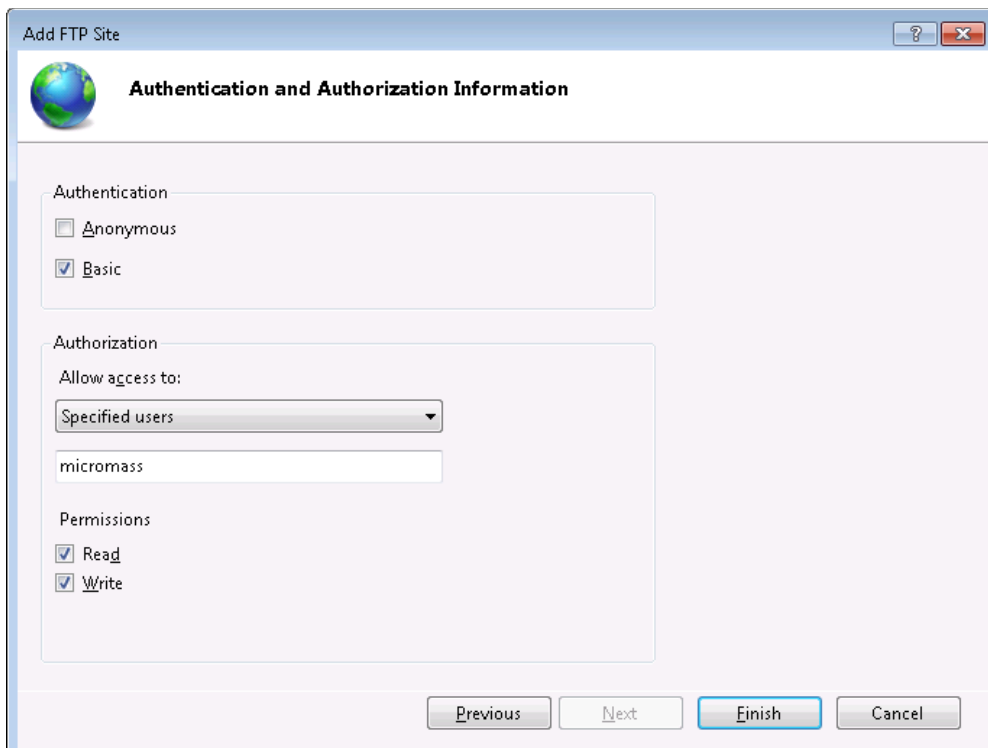
Select **Sites** and click on **Add FTP Site** in **Actions** to add a FTP Site which launches the **Add FTP Site** wizard and enter the **FTP Site name**: 'Default FTP Site' and **Content Directory**: C:\



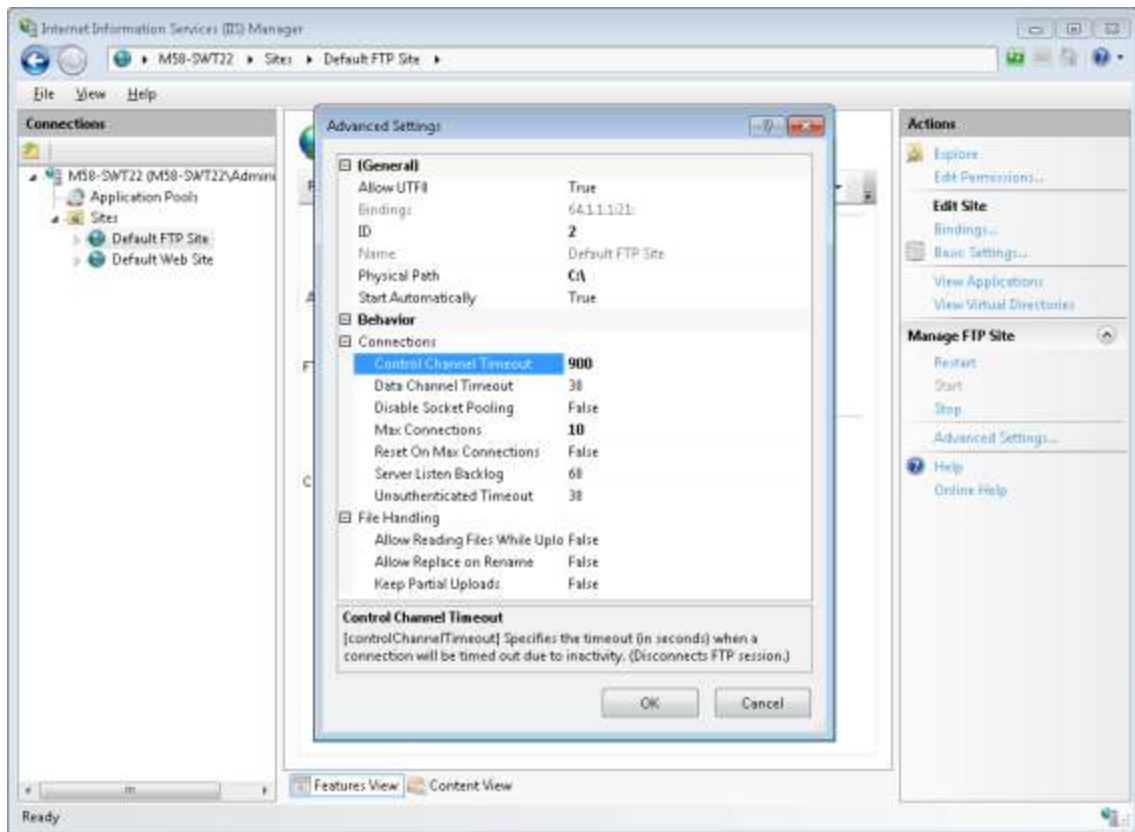
Click **Next** and enter the IP Address as **64.1.1.1**, Port as **21** and select **Allow SSL** options. Click **Next**.



Now Select the **Basic** Option for **Authentication**, and for **Allow access to:** select **Specified users** enter '*micromass*' in the edit field and check both **Read** and **Write** permissions and click **Finish**. Restart the PC.

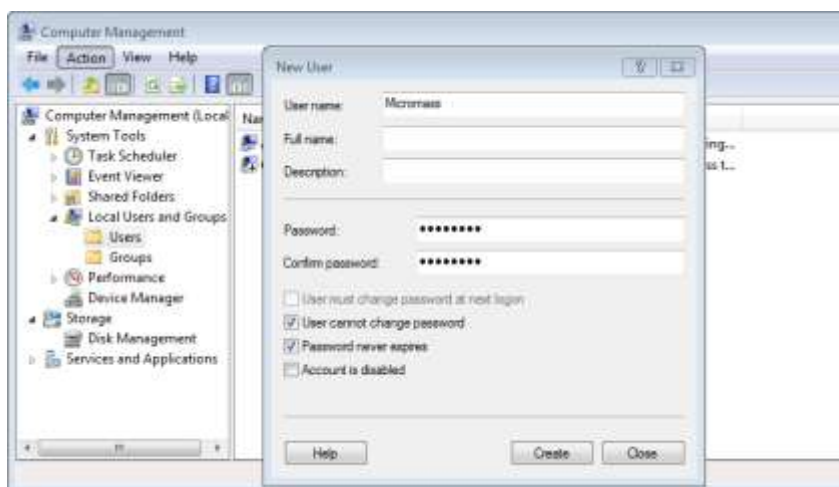


Again go to IIS Manager and select **Default FTP Site**. Click on **Advanced settings** in the **Actions** pane. Enter value of **Control Channel Timeout** to **900** and **Max Connections** to **10** and Click **OK** and close the **IIS Manager**.



vi) Adding a User Account

Right click **Computer** and select **Manage** to open **Computer Management**. Expand **Local Users and Groups** to **Users**. Click **Action > More Actions > New User** which opens the **New User** dialog. Enter the details: User name as *Micromass*, Password as *analysis*, deselect the **User must change password at next logon**, select the **User cannot change password** and select the **Password never expires** options. Click the **Create** button to create the Micromass user account.



Double click on the newly created Micromass account. Click on the **Member Of** tab. Verify that the Micromass user is a member of the **Users** group click **OK** to close down the Properties box.

vii) Configuring TELNET

Go to **Control Panel > Programs > Programs and Features** and click on **Turn windows features on or off**. Check the **Telnet Client** feature and Click **OK** to install.

