Procedure for setting up Windows XP for Support of Ethernet Embedded PC Instruments

This procedure describes how to configure a generic Windows XP workstation with the required operating system support for the Water's ZQ Detector so that it is ready for installation of Empower or MassLynx software

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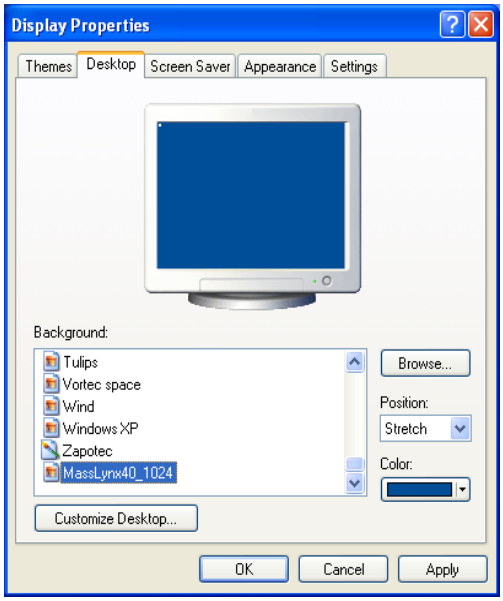
1.0 This procedure describes how to configure a generic Windows XP workstation with the required operating system support for the Water's ZQ Detector so that it is ready for installation of Empower or MassLynx software. This procedure should be done with logon as Administrator, or as a user who is a member of the Administrator group.
Note: This procedure can also be used as a guide for configuring a generic Windows 2000 workstation, as the configuration procedure is very similar.

For MassLynx, a National Instrument PCI GPIB card (or Agilent GPIB card) is installed in the workstation along with a second Ethernet PCI network adapter that is used for Ethernet instruments and Instruments with the embedded PC (EPC and EPCAS) interface such as the Waters ZQ or Quattro Ultima instrument.
For Empower, a PCI BusLACE card is installed in the workstation along with a second Ethernet PCI network adapter for Ethernet Instruments and the Waters ZQ or EMD 1000 Instrument.
Note: It is recommended that the Intel PRO/1000 MT Desktop Adapter (Intel P/N PWLA8390MT) be used for Ethernet PCI network adapter. This adapter support Auto MDI/MDIX, where the adapter automatically determines whether data crossover is required or not in the cabling.

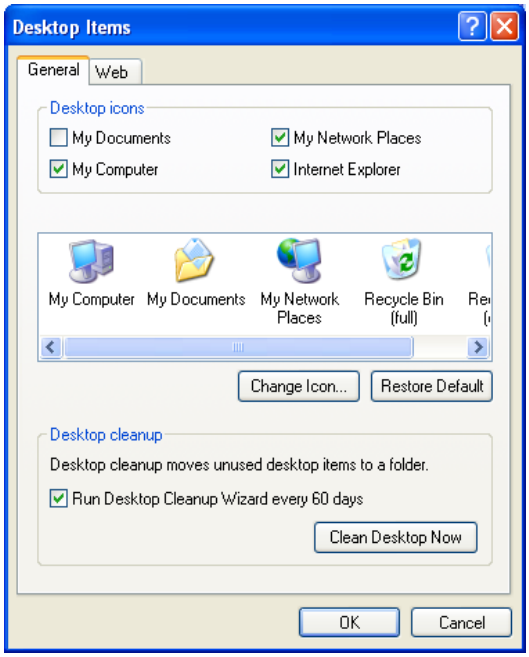
2.0 Workstation BIOS Settings – If there is a Power/Energy Savings setting in the BIOS, this should be set to Disabled. If the IRQ settings for the PCI Adapters can be changed (Compaq workstations for example), then they should be changed as required with a goal of trying to have a dedicated IRQ setting for the GPIB (MassLynx) or BusLACE (Empower) adapter, and if possible, also the network adapter for the Ethernet Instruments.
The choices for IRQ settings vary depending on what PCI slots are used for the adapters.
Note: If the IRQ settings cannot be changed (IBM workstations, for example), this is not an issue.

3.0 This procedure uses **My Computer** and **My Network Places** icons on the desktop.
Add these to the desktop as follows:

3.1 Right click on the desktop and select **Properties**. In Display Properties, click the **Desktop** tab. Click the **Customize Desktop** button.



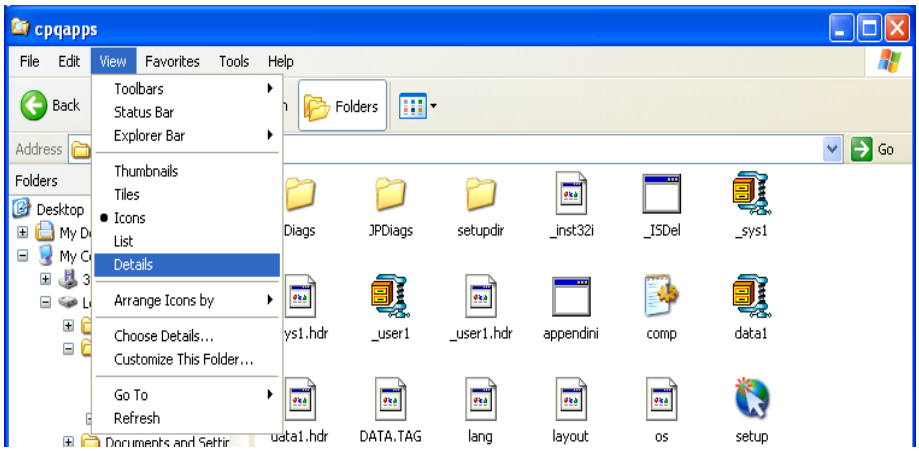
3.2 This procedure will use the **My Computer** and **My Network Places** Icons on the desktop. Select the check boxes for these Desktop Icons, and any other icons desired. Click **OK**. Back at Display Properties click **OK**. Additional Display Properties setting are done later.



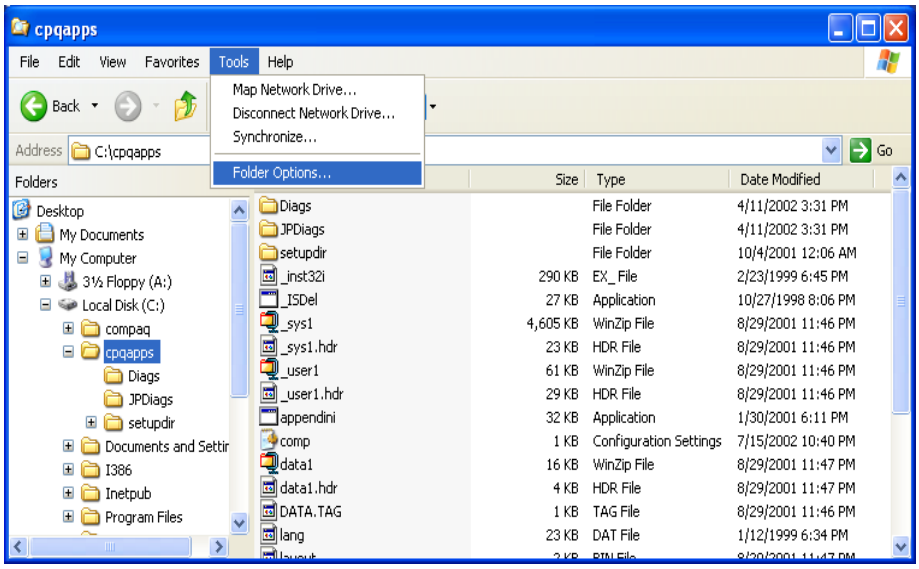
5.0 Change Explorer folder options. If desired, also add the i386 folder on the C: drive; If the i386 folder is on the c: drive, then if Windows XP needs files from the Windows XP CDROM (such as when IIS is installed), it will get them from this folder and it will not be necessary to insert the CD.

5.1 At the Desktop, Right click the **My Computer** Icon and select **Explore**.
Click the **'+'** in front of the Local Disk **(C:)** drive to list its folders.
In an **Administrator** account, the preferred settings are to see file details, be able to see all files including system files and hidden files, and to be able to see all file extensions.
To create these settings on all drive folders do the following:

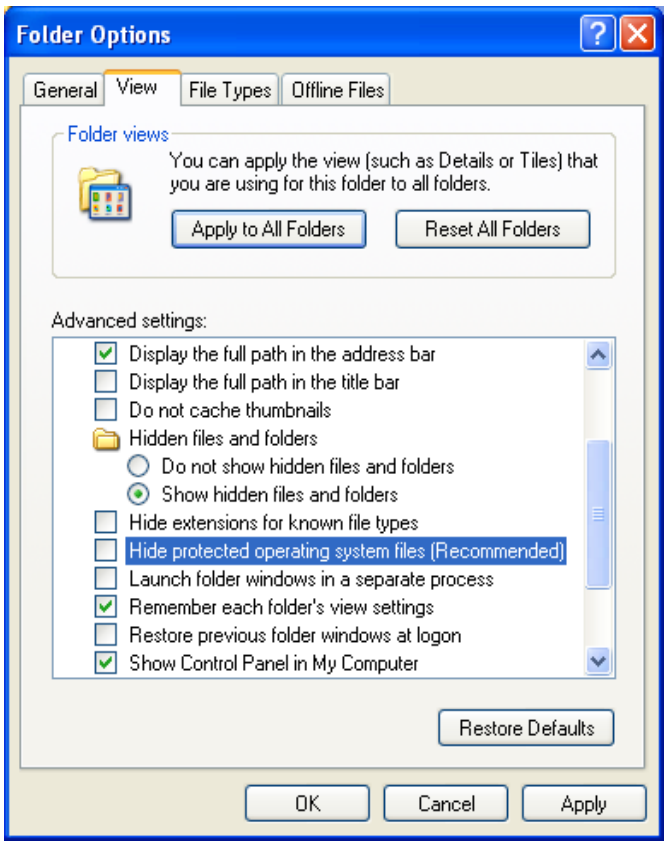
5.2 Click a folder on the C: drive which has files in it such as the **cpqapps** folder shown below. Select the **View** menu and select **Details**.



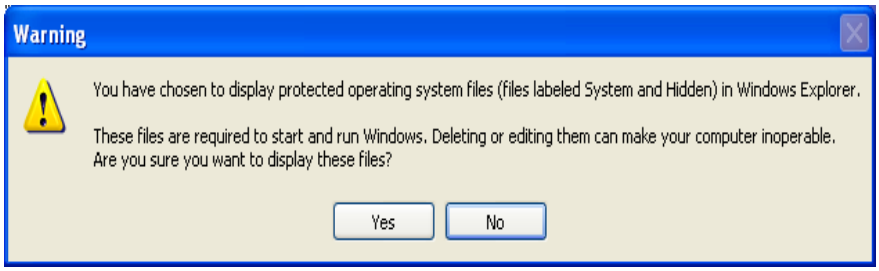
5.3 File details will be shown. Select the **Tools** menu and select Folder **Options…**



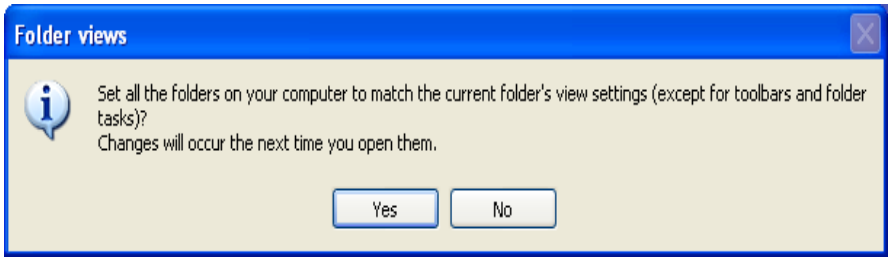
5.4 Select the **View** tab. Select the checkbox for **Show hidden files and folders**, click to clear the checkbox for **Hide extensions for known file types**, Select the checkbox for **Show hidden files and folders**, click to clear the checkbox for **Hide protected operating system files**.



5.5 Click **Yes** at the warning message for displaying operating system files.



5.6 Click the **Apply** button. Click the **Apply to All Folders** button.
Click **Yes** at the folder views message.



5.7 If the **i386** folder already exists on the C: drive, or if it is not desired to copy the i386 folder onto the C: drive, go to Operation 5.11.

5.8 Insert into the system CDROM drive the Microsoft Windows XP **Professional** CDROM.
When the CDROM autostarts, click **Exit**.

5.9 In Explorer on the left side, click the CDROM drive.
On the right side of Explorer, **Click** (Select) the **I386** folder on the CDROM.
Hold the mouse button down and **drag the I386 folder** until its directly over the **Local Disk (C:)** on the left side.
Insure that **Local Disk (C:)** is **highlighted** and **release the mouse button**.
The Windows XP Professional CDROM I386 folder will be copied to the C: drive.

5.10 Remove from the system CDROM drive the Microsoft Windows XP Professional CDROM.

5.11 Select **File – Close** to exit Explorer.

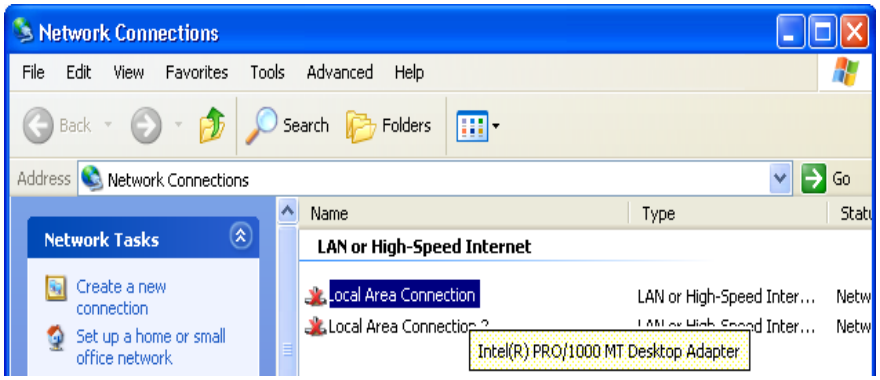
6.0 Configure the settings of the network adapters.

The following is the recommended configuration procedure for these network interfaces on the IBM ThinkCentre M50 system. This can be used as a guide for configuring other systems.

The RJ45 connector at the motherboard is used for the computer's network interface.
This is configured in My **Network Places** on **Local Area Connection**.
There is another network adapter in the first PCI bus slot. This is used for Ethernet instruments and Instruments with the embedded PC (EPC and EPCAS) interface such as the Waters ZQ or Quattro Ultima instrument.
This Instrument LAN interface uses a TCP/IP address of 64.1.1.1 for interfacing to the embedded PC (ie, Waters ZQ, Quattro Ultima) and an address of 192.168.0.1 for the Ethernet Instrument DHCP Server driver interface. This is configured in My **Network Places** on the **Instrument LAN** Local Area Connection.

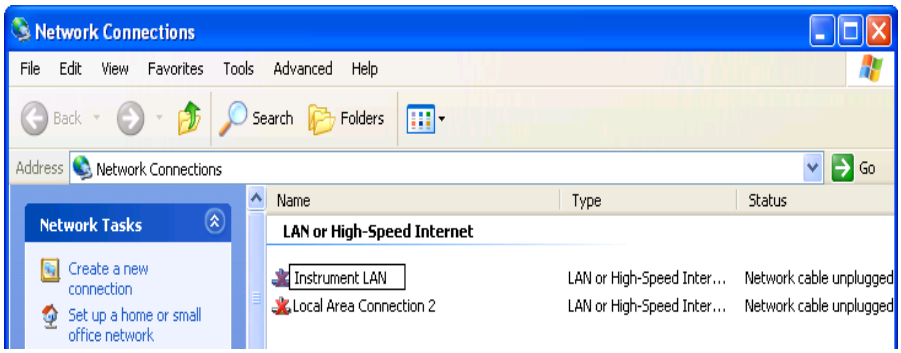
6.1 Right click **My Network Places** on the desktop and select **Properties**.

6.2 Put the mouse cursor over **Local Area Connection** and verify the **Intel ® PRO/1000 MT Desktop Adapter** pops up as a description. **If** the **Intel ® PRO/1000 MT Desktop Adapter** pops up as a description for **Local Area Connection 2 instead,** then **do the next Operation on Local Area Connection 2.**
Note: The Network Connections can be listed in either order, ie, Local Area Connection may be listed first or second.



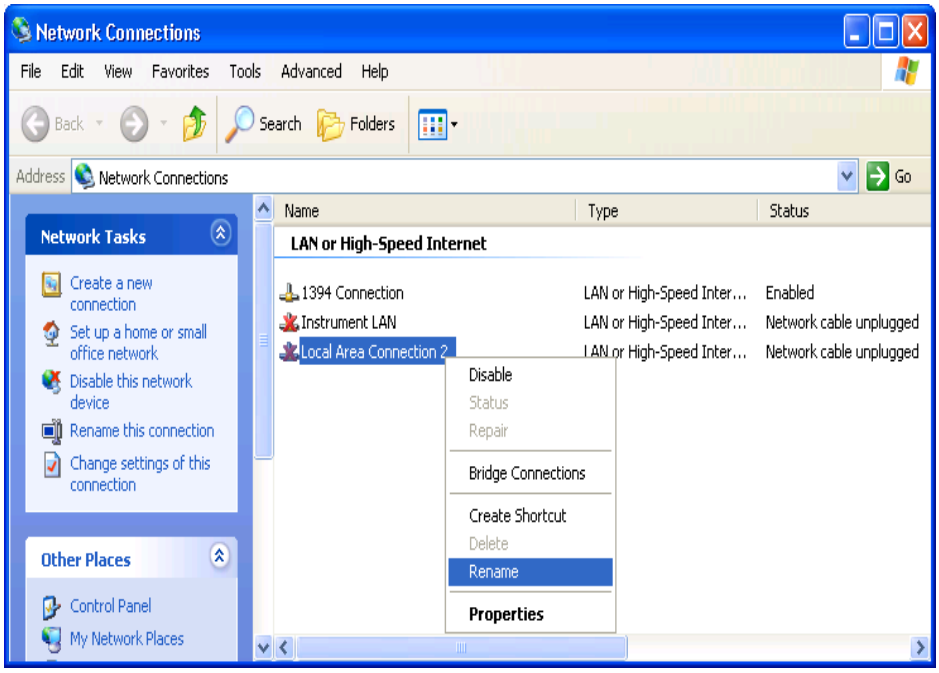
6.3 Right click the **Local Area Connection that is the Intel ® PRO/1000 MT Desktop Adapter** and select **Rename**.

6.4 Press the **<Backspace>** key to clear the name and type in **Instrument LAN** and press the **<Enter>** key.

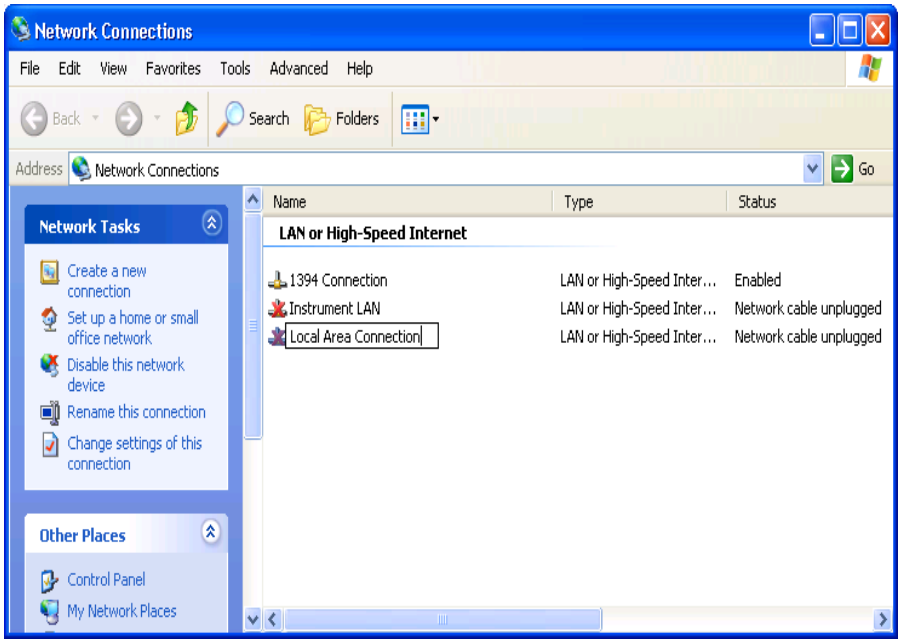


6.5 If **Local Area Connection 2** is the connection left, than rename it to **Local Area**

Connection. If it is **already named** Local Area Connection, **go to Operation 6.7**. Otherwise, Right click **Local Area Connection 2** and select **Rename**.

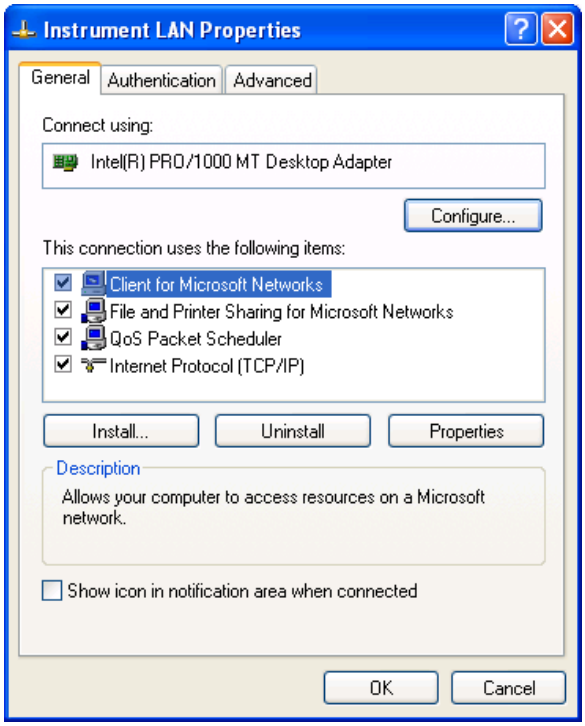


6.6 Click the mouse cursor at the end of the name and press the <**Backspace>** key twice to make the name **Local Connection**. Press **<Enter>**.

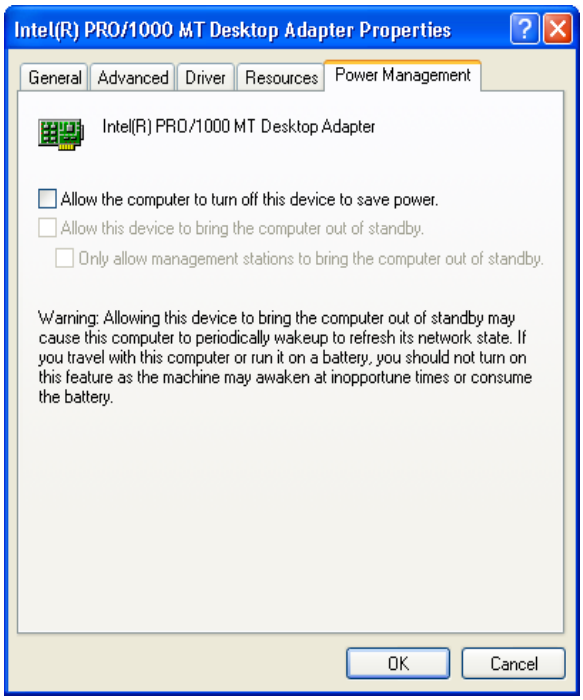


6.7 Right click **Instrument LAN** and select **Properties**.

6.8 Verify that the **Intel PRO/1000 MT Desktop Adapter** is listed in the **Connect using:** box. Click the **Configure** button.

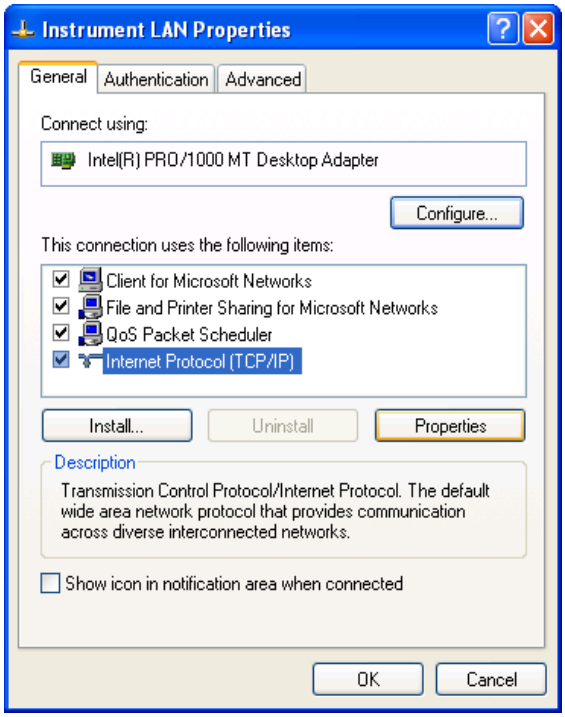


6.9 Click the **Power Management** tab. If **Allow the computer to turn off this device to save power** is Selected (checkmarked), then click in the check box to remove the checkmark as shown below. Click **OK**.

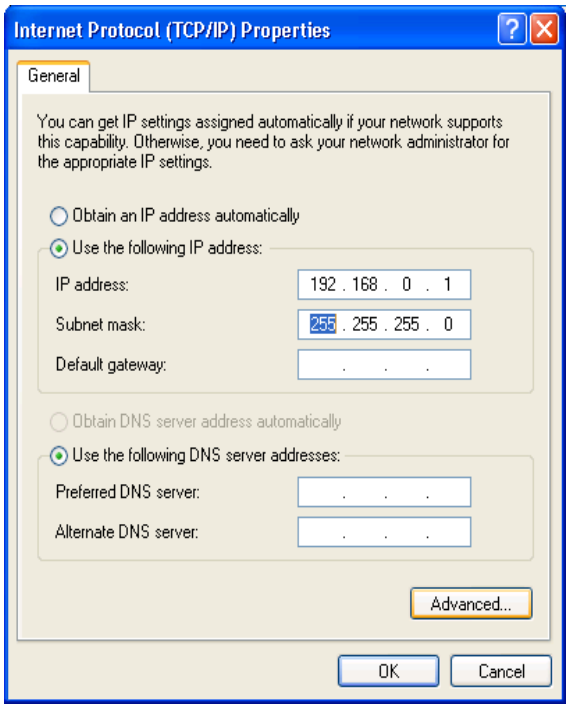


6.10 Right click **Instrument LAN** and select **Properties** again.

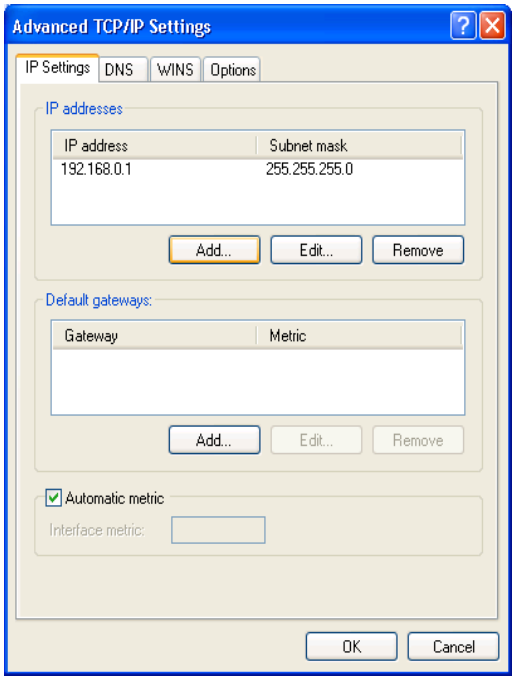
6.11 Select the **Internet Protocol (TCP/IP)**. Click the **Properties** button.

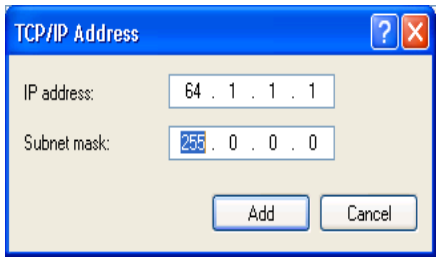


6.12 Click **Use the following IP address**. Type in **192.168.0.1** for the **IP address**, press the **<Tab>** key and the **Subnet mask** of **255.255.255.0** should occur. Click **Advanced.**

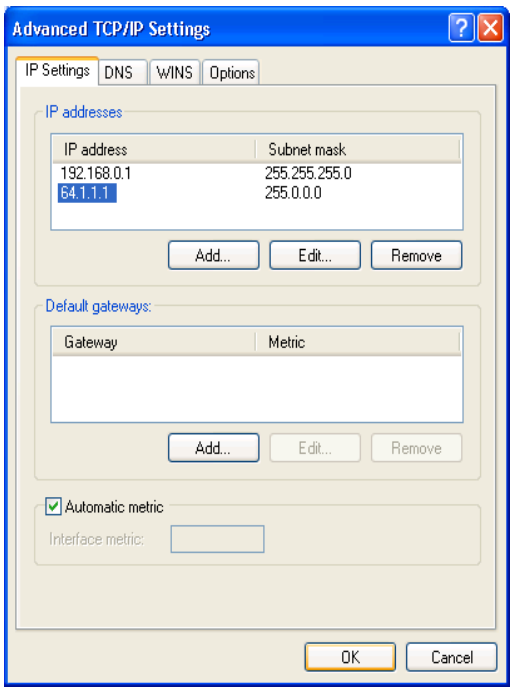


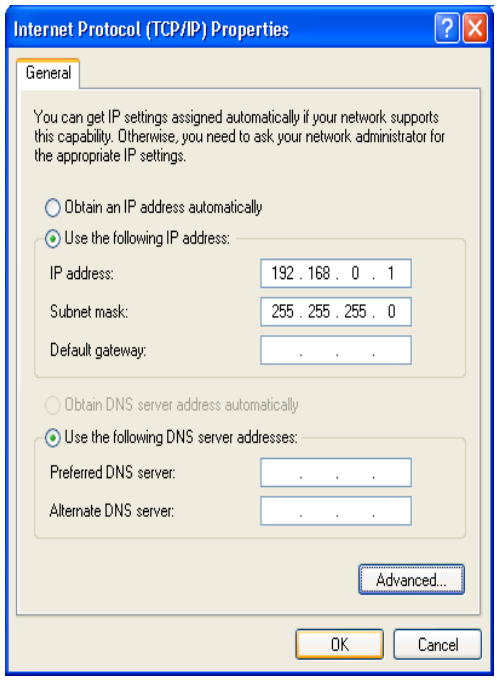
6.13 In the **IP Address box**, click **Add.** In the TCP/IP Address Dialog box, type in **64.1.1.1** for the **IP address**, press **<Tab>** and the **Subnet mask** of **255.0.0.0** should occur. Click **Add.**





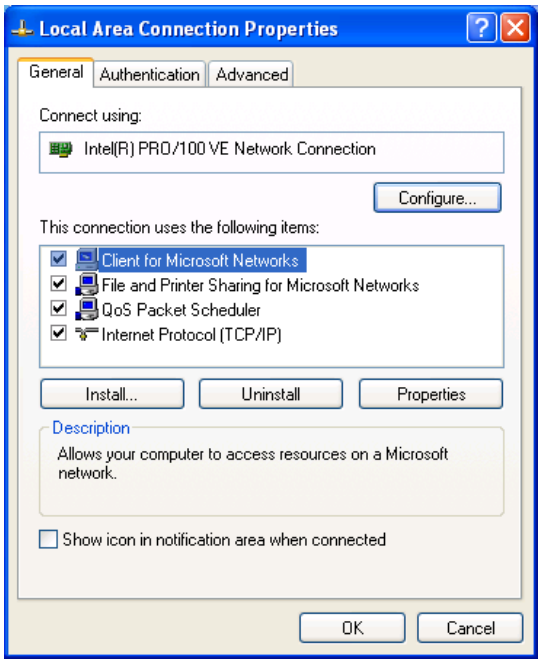
6.14 Verify that the **64.1.1.1** IP Address has been added as shown below. Click **OK**. Back at TCP/P Properties, click **OK**.



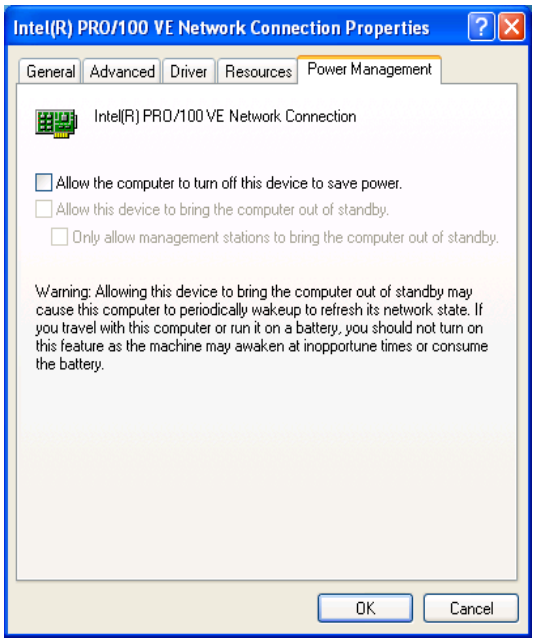


6.15 Click the **Close** button to close **Instrument LAN Properties**.

6.16 Right click **Local Area Connection** and select **Properties**. Click the **Configure** button.

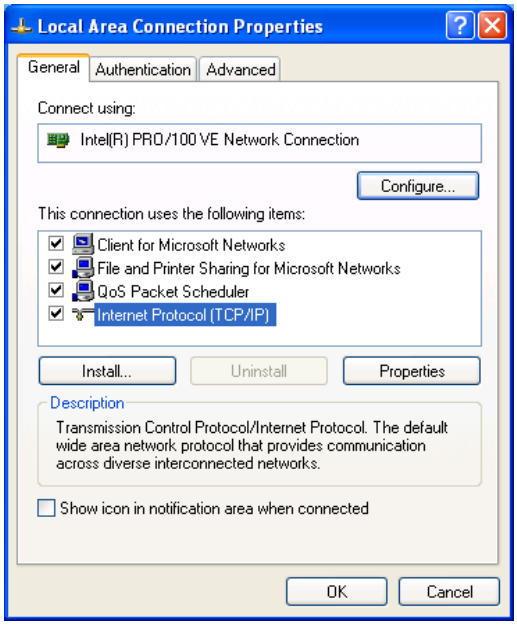


6.17 Click the **Power Management** tab. If **Allow the computer to turn off this device to save power** is checkmarked, then click in the check box to remove the checkmark as shown below. Click **OK**.



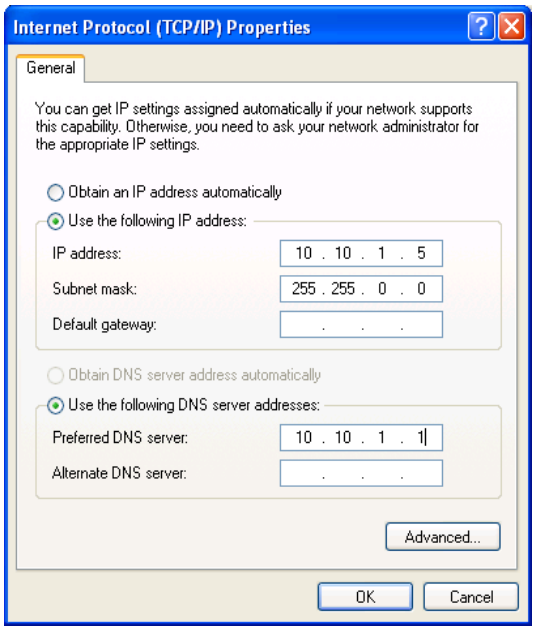
6.18 If you do not wish to use the **TCP/IP Protocol**, or if you wish to configure it later, then go to Operation 6.22. Other wise, right click **Local Area Connection** and select **Properties**.

6.19 Click (select) **Internet Protocol (TCP/IP)**. Click the **Properties** button.



6.20 To configure the **TCP/IP Protocol**, consult your network administrator for instructions. The TCP/IP Protocol is set by default to use DHCP addressing on the computer's network interface and gets its TCP/IP address from a DHCP server on the network.However, if it is desired to use static IP addressing, select **Internet Protocol (TCP/IP)**. **Click Properties**.

6.21 For static IP addressing, select **Use the following IP Address** and enter the desired **IP address,** and **Subnet Mask** as shown above on the right side. Enter the **Preferred DNS Server**. Additional settings can be entered by clicking A**dvanced**. Click **OK**. Back at Local Area Connection Properties, click **Close**.

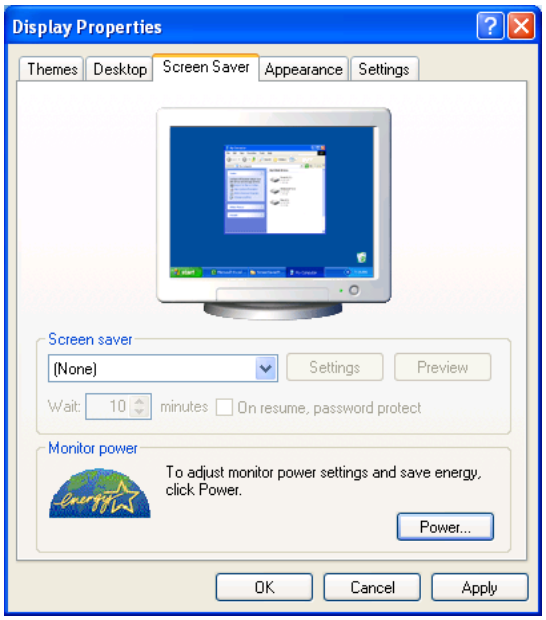


6.22 Click the **'x'** to close **Network Connections**.

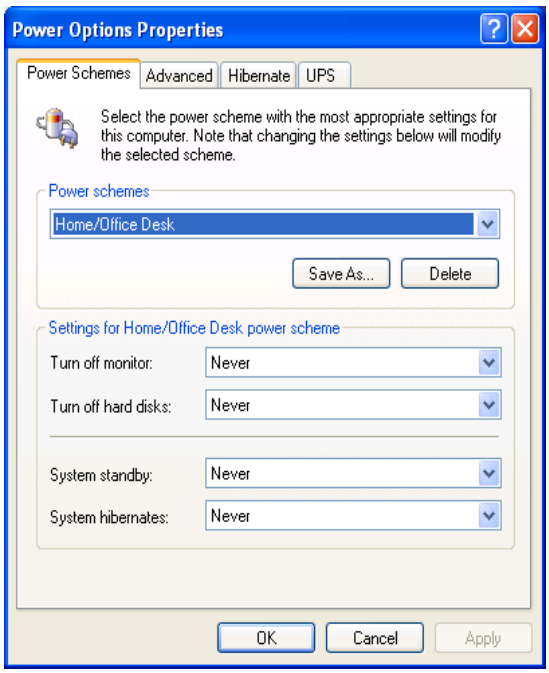
7.0 Verify that Power Options settings are set to Never in Display Settings.

7.1 Right Click on the Desktop and Select **Properties**.

7.2 **Click the Screen Saver** tab. If the Windows XP screen saver is selected, click the down arrow select list and select **(None)**. Click the **Power** button.

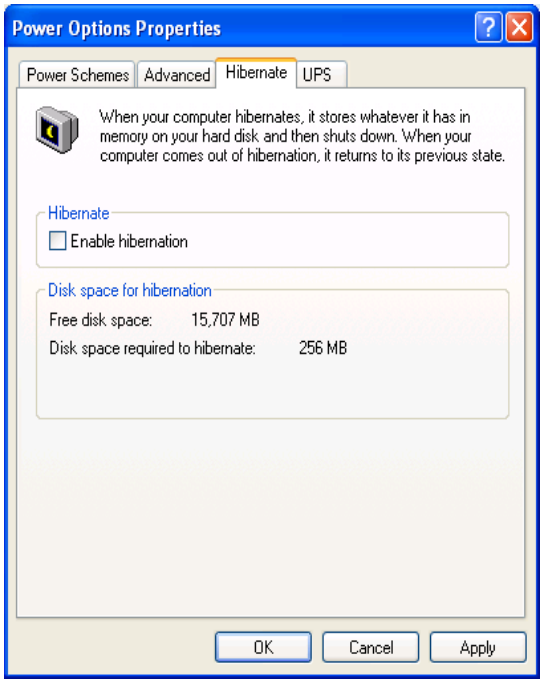


7.3 At the **Power Schemes** tab, For the default **Home/Office Desk** or **IBM** Power scheme, verify that all of the power options boxes have **Never** selected as shown below.
If not, then select the down arrow next to the box and select **Never** and click **Apply**.

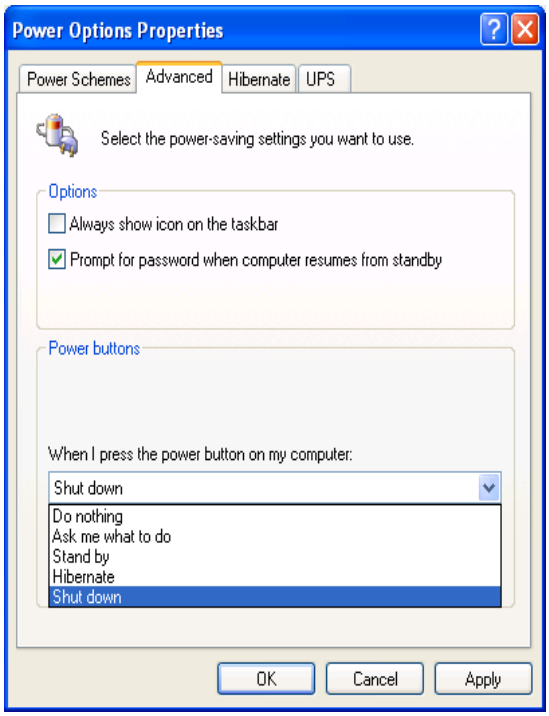


7.1 Click the **Hibernate** tab if it is present. If the **Enable hiberation** check box is selected,

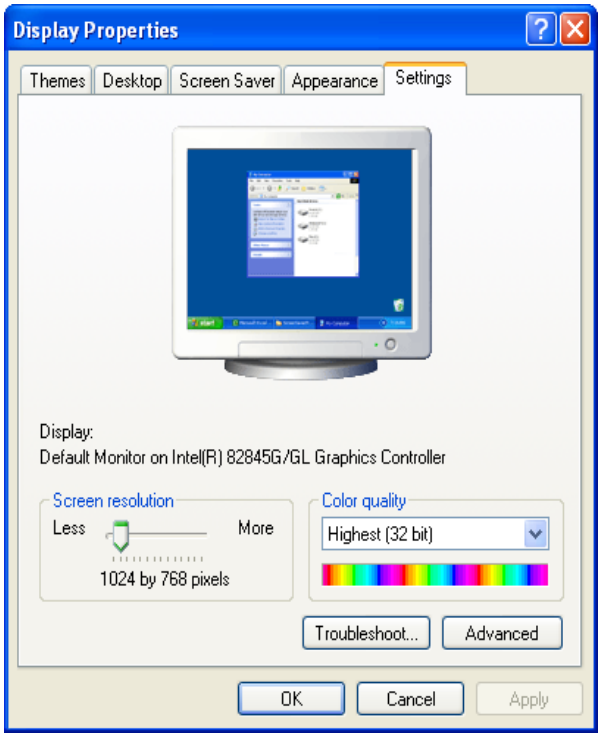
click in it to clear it as shown below and click **Apply**.



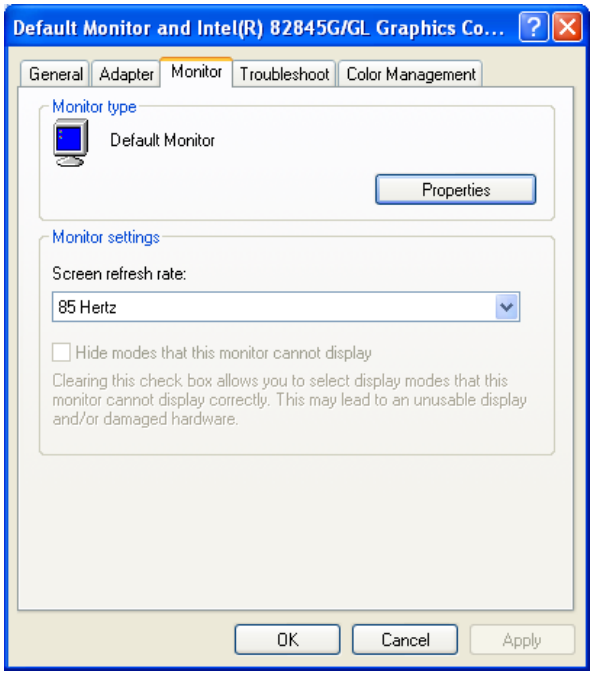
7.2 Click the **Advanced** tab. In the Power buttons selection box, if **Shutdown** is not selected, then click the selection list down arrow on the right side of the box and select **Shutdown** as shown below and click **Apply**.



7.3 Click **OK**. Back at the Screensaver tab, Click the **Settings** tab. If necessary, change the **Screen resolution** and **Color quality** as desired. Click the **Advanced** button.

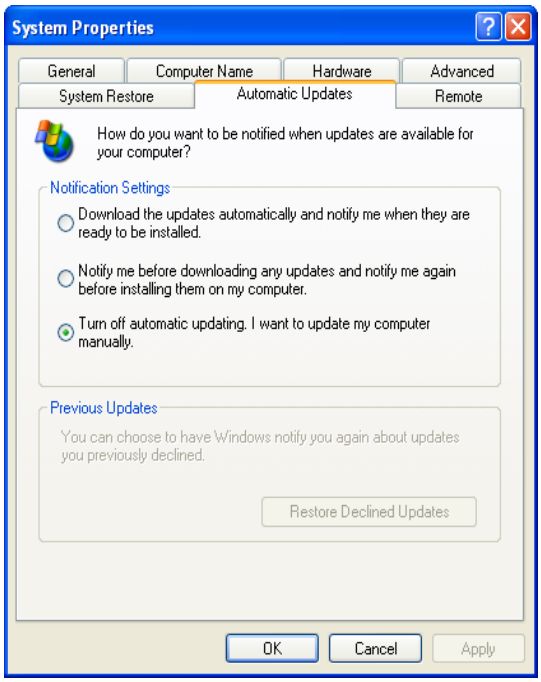


7.4 Click the **Monitor** tab. If necessary, click the down arrow select at the **Screen refresh rate:** box and select the desired refresh rate. Click **OK**. Back at the Settings tab, click **OK** to exit. If changes were made, click **Yes** at the Monitor settings message.

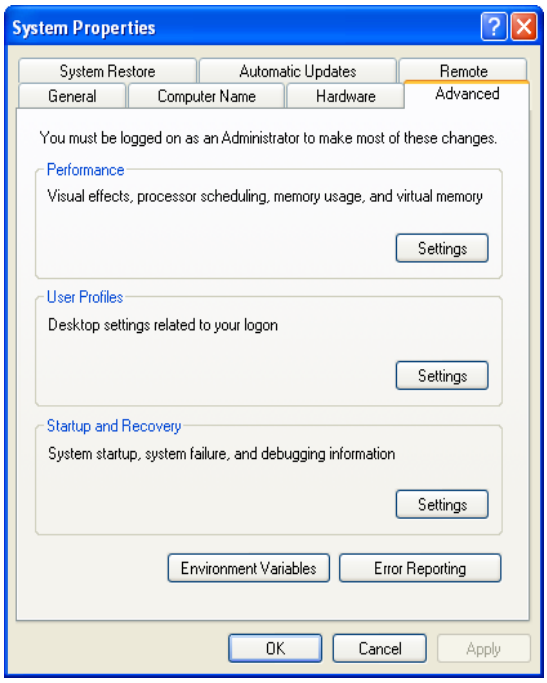


8.0 Virtual memory and Automatic Updates settings in System Properties.

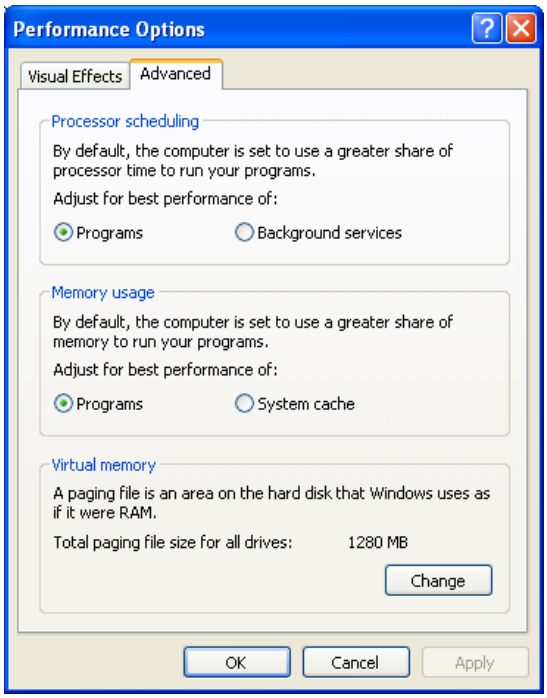
8.1 Right click the **My Computer** Icon on the desktop and select **Properties**. Click the **Automatic Updates** tab. Verify that **Turn off automatic updating**.. is selected in the Notification Settings box as shown below. If necessary, make this selection and click **Apply**.



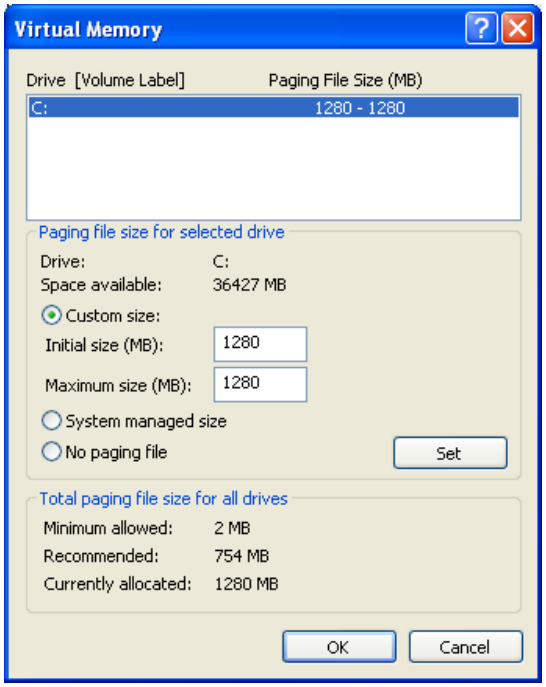
8.2 Click the **Advanced** Tab. In the **Performance** box, click the **Settings** button.



8.3 Click the **Change** button in the **Virtual memory** box.

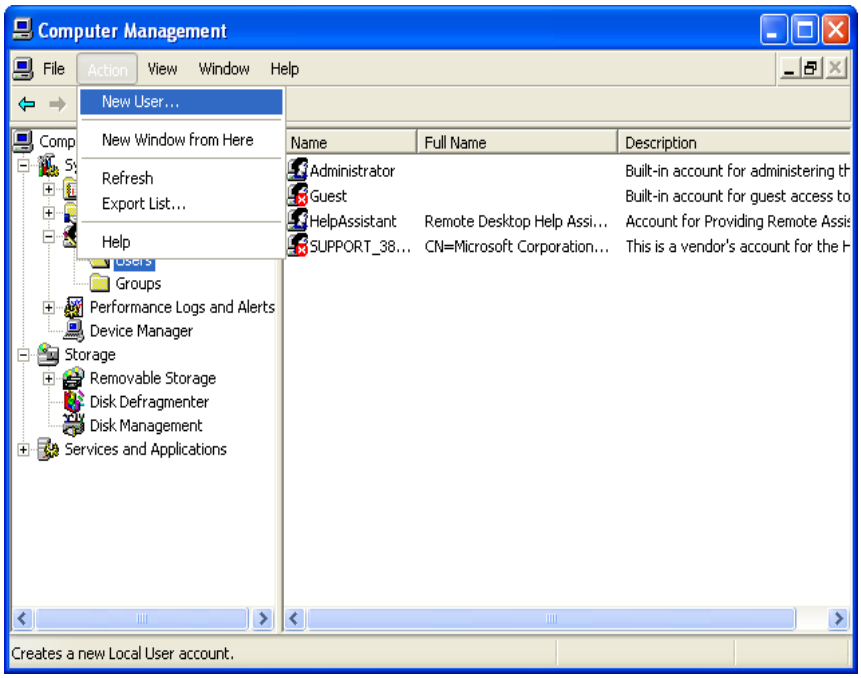


8.4 For Empower, the recommended Virtual memory setting is **500MB** or greater for the **Initial** and **Maximum** size. For MassLynx, the desired Initial/Maximum Virtual Memory setting is **2 ½ times the size of the system memory**. For example, for 512MB of system memory, the setting would be 1280MB –1280MB. This is shown in the screenshot below.
Click in the **Initial size (MB):** text box and type in the desired Initial Virtual memory size. Repeat for the **Maximum size (MB):** text box. Click the **Set** button. Back at the above screen, click **OK**. Back at the System Properties screen, click **OK** to exit.

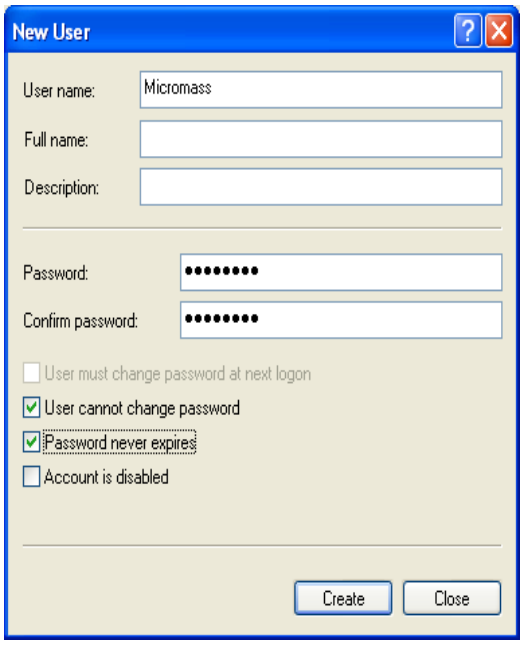


9.0 Add the Micromass User Account and make it a reserved account.

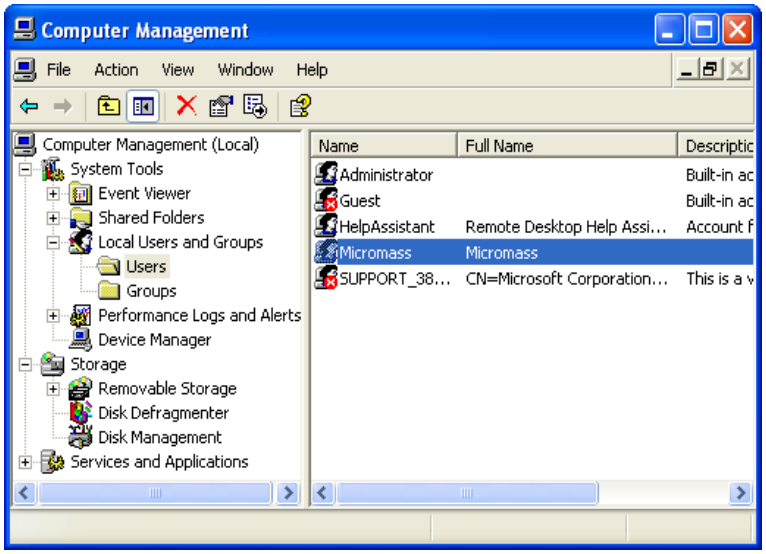
9.1 Right click the **My Computer** Icon on the desktop and select **Manage**.
Click the **'+'** in front of **Local Users and Groups** and then click **Users**.
Select the **Action** menu and select **New User** as shown below.



9.2 At the New User dialog box, type **Micromass** in the **Username:** box.
Type **analysis** (lowercase) in the **Password:** and **Confirm password:** boxes.
Clear the **User must change password on next logon** check box.
Select the **User cannot change password** and **Password never expires** check boxes.
Click the **Create** button. Back at the **New User** dialog box, click the **Close** button.

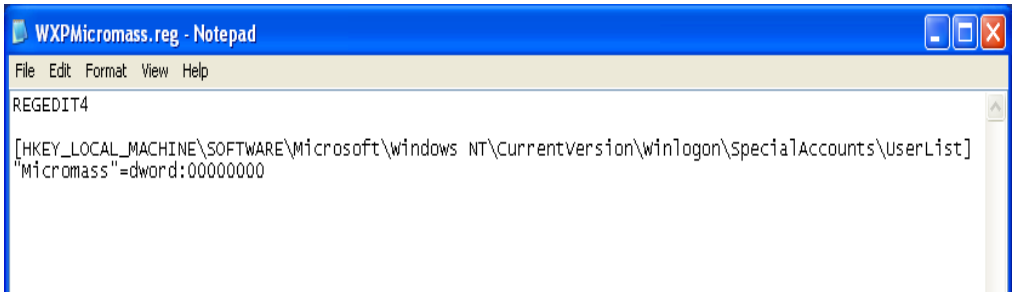


9.3 Back at Computer Management, verify the newly created **Micromass** account is listed. Click the **'x'** to close Computer Management.

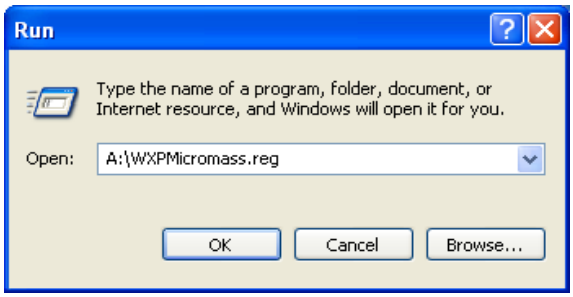


For the next operation, **either follow steps 9.4a through 9.6a or 9.4b through 9.7 b** (If using Microsoft Windows 2000, the following steps would not apply so go to Step 10.0).

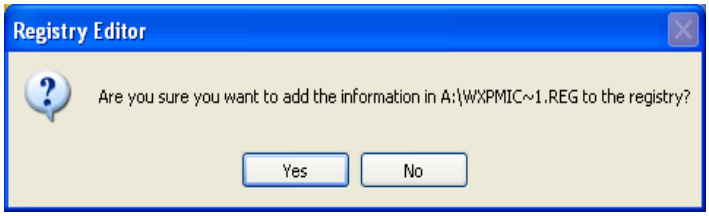
9.4a For Windows XP only, it is recommended that the registry have a key added which tells Windows XP that the **Micromass** account is a reserved account which should not be on the Windows XP Welcome logon screen. The best way to do this is to create a registry update file. This can be saved to a diskette and reused if it is needed again.
To create the file, click **Start – All Programs – Accessories – Notepad**.
The file must be typed in exactly as shown below, with the first line of **REGEDIT4**, A **blank line**, and then the **two lines** exactly as shown in the screenshot below.
Save the file on the disk drive and/or a diskette. The file must be saved with a .reg extension (ie, **filename.reg**) to identify to Windows that it is a registry update file.

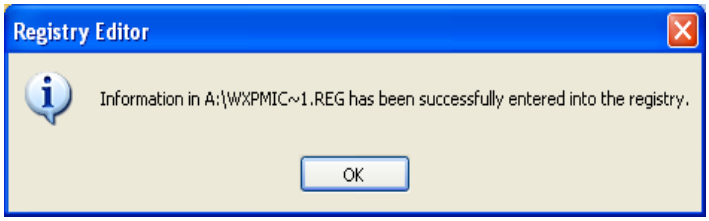


9.5a To run the registry update file, click **Start – Run** and type or Browse to the file. Click **OK**.



9.6a Click **Yes** at the Are you sure… message, and click **OK** at the success message.

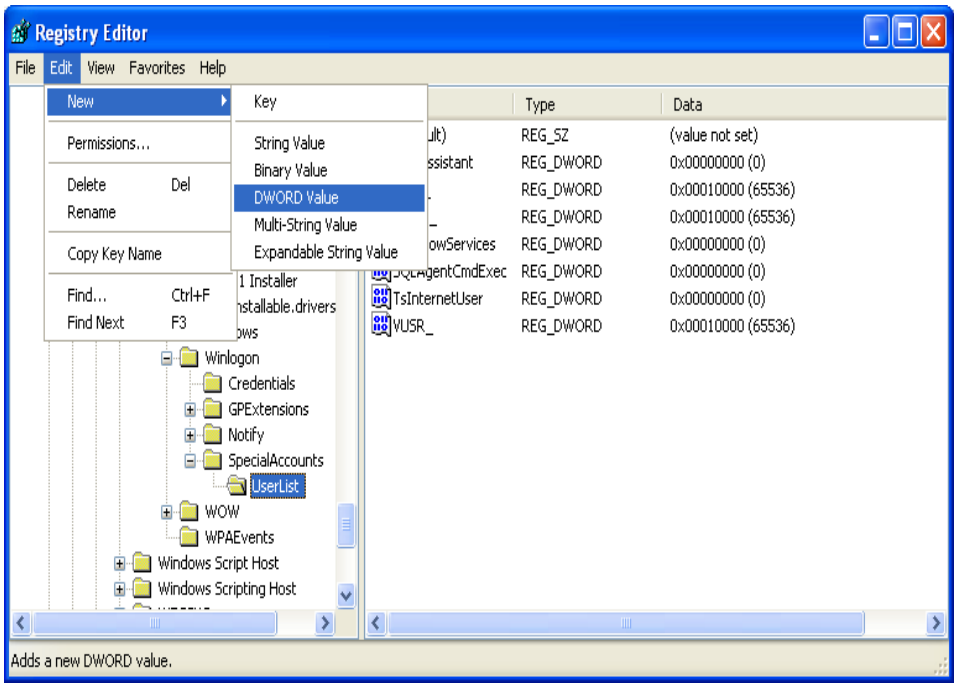




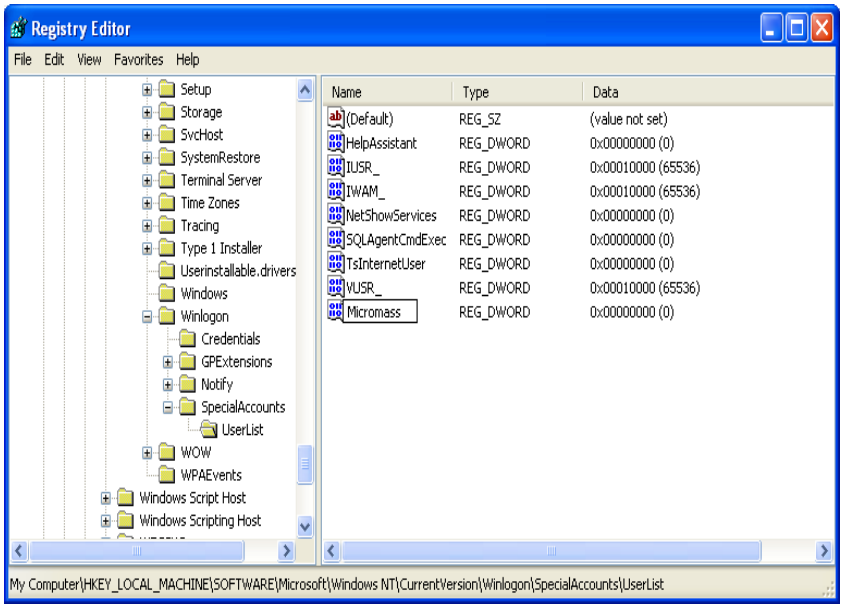
9.4b Alternately, instead of using the registry update file method, the registry can be manually edited. To do this, click **Start – Run** and type **regedit** in the **Open:** text box and click **OK**.

9.5b Expand the registry tree as required by clicking the '+' in front of the keys :
Expand **HKEY_LOCAL_MACHINE**, **SOFTWARE**, **Microsoft**, **Windows NT**, **CurrentVersion**, **Winlogon**, **SpecialAccounts**, and click **UserList**.

9.6b Click the **Edit** menu and select **New – DWORD Value**.

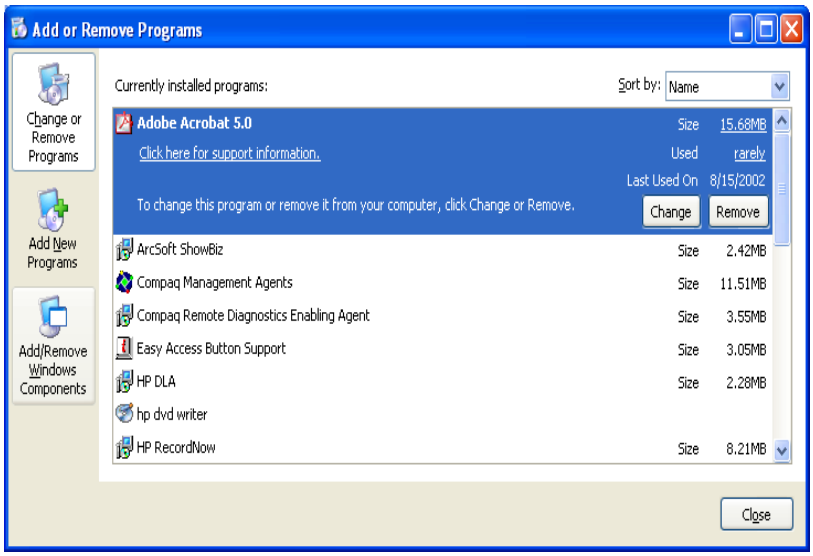

Registry Editor
File
Edit
View
Favorites
Help
New
Permissions...
Delete Del
Rename
Copy Key Name
Find... Ctrl+F
Find Next F3
Key
String Value
Binary Value
DWORD Value
Multi-String Value
Expandable String Value
Type
Data
REG_SZ (value not set)
REG_DWORD 0x00000000 (0)
REG_DWORD 0x00010000 (65536)
REG_DWORD 0x00010000 (65536)
REG_DWORD 0x00000000 (0)
REG_DWORD 0x00000000 (0)
TsInternetUser REG_DWORD 0x00000000 (0)
VUSR_ REG_DWORD 0x00010000 (65536)
Winlogon
Credentials
GPExtensions
Notify
SpecialAccounts
UserList
WOW
WPAEvents
Windows Script Host
Windows Scripting Host
Adds a new DWORD value.

9.7b Type in **Micromass** for the key name and press **<Enter>**. Leave the data value at 0. Click **File – Exit** to exit or click the **'x**'.

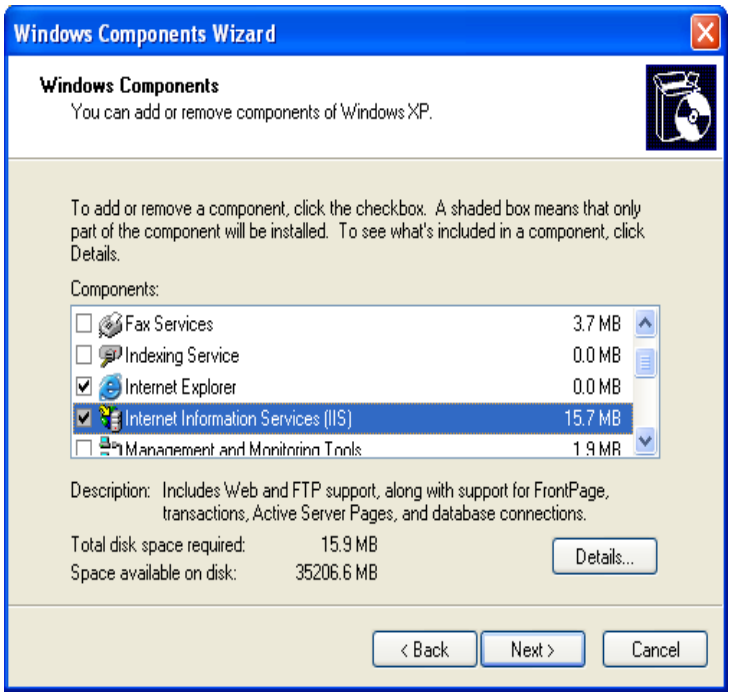


10.0 Install and Configure Windows XP **Internet Information Services**.
This is used for communication over the Waters ZQ Network connection with the ZQ Detector.

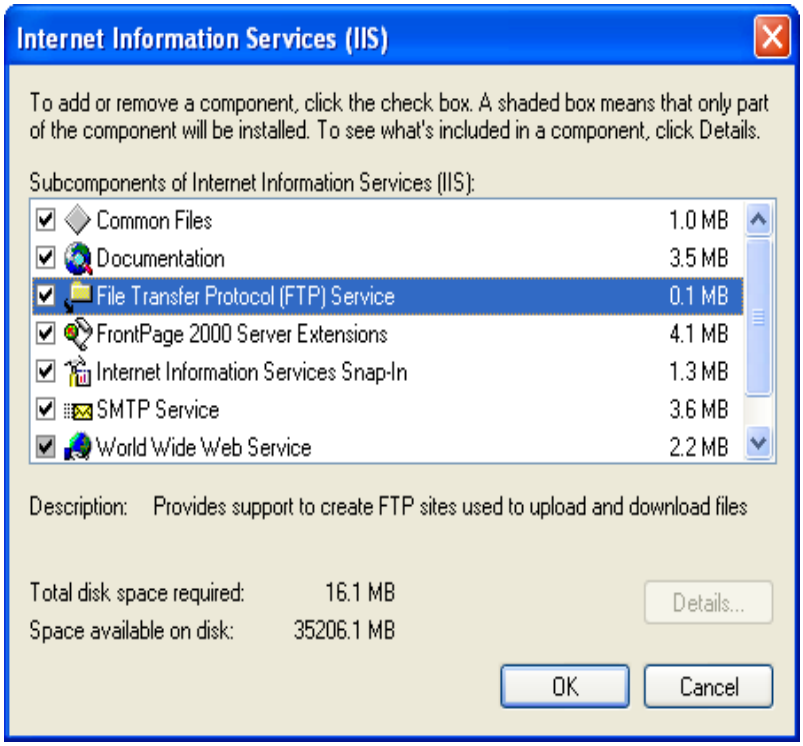
10.1 Click **Start – Control Panel**. Click **Add or Remove Programs**.
At the Add or Remove Programs screen, click the **Add/Remove Windows Components** button on the lower left.



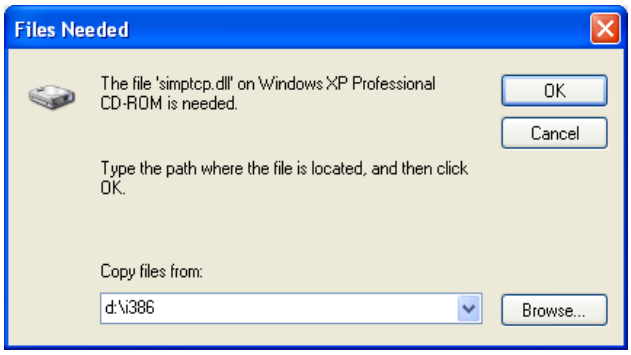
10.2 In the Components list, deselect the **Indexing Service** checkbox and select the **Internet Information Services (IIS)** checkbox. Click the **Details** button.



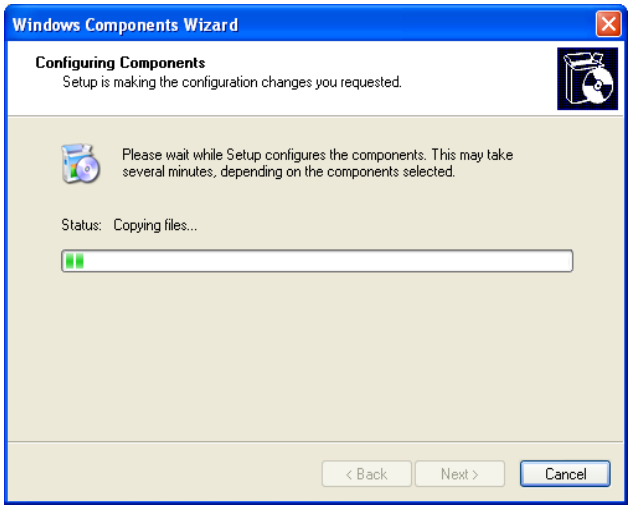
10.3 In the IIS Subcomponents list, select the **File Transfer Protocol (FTP)** Service checkbox. Click **OK**. Back at Windows Components, click **Next**.



10.4 If the i386 folder does not exist on the C: drive, then Windows will request the Windows XP Professional CDROM. Insert the Windows XP CDROM in the CDROM drive, type or Browse to the CDROM in the Copy files from: box and click **OK**.

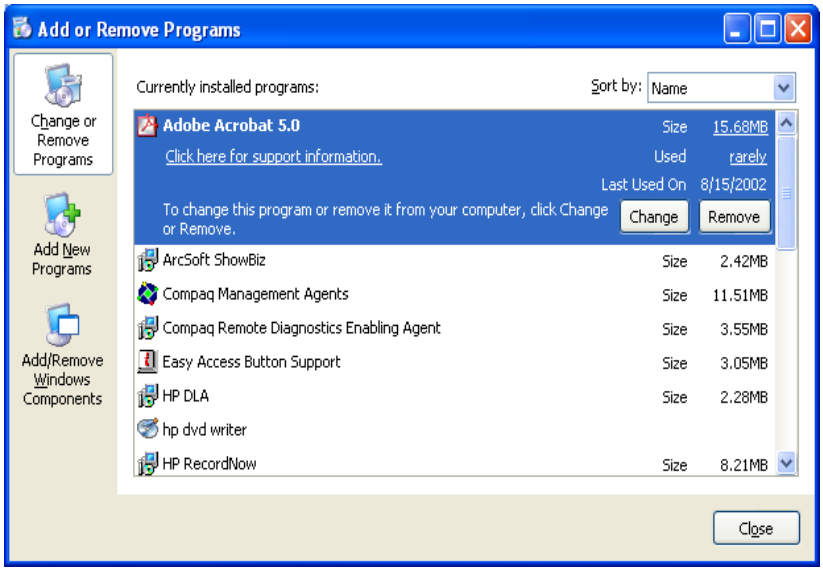


10.5 The IIS files are copied to the C: drive.



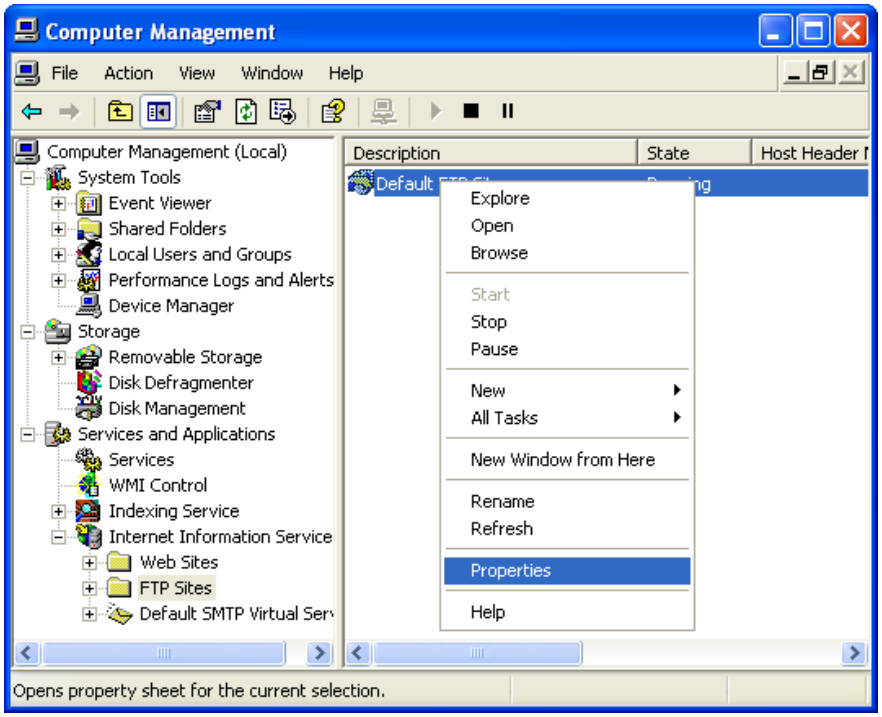
10.6 When the installation is complete, click **Finish**.

10.7 Back at Add or Remove Programs, click **Close**. Click the **'x'** to close Control Panel.

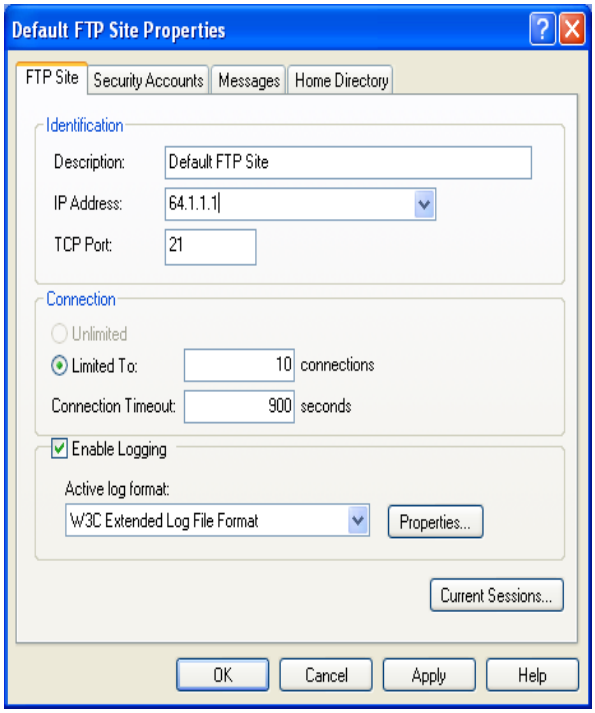


10.8 Set the **Properties** for the **Default FTP Site** in **Internet Information Services**. Right Click the **My Computer** Icon on the desktop and select **Manage**.

10.9 Click the **'+'** in front of **Services and Applications**. Click the **'x'** in front of **Internet Information Services**. Click **FTP Sites.**
Right click **Default FTP Site** in the list on the right side and select **Properties**.

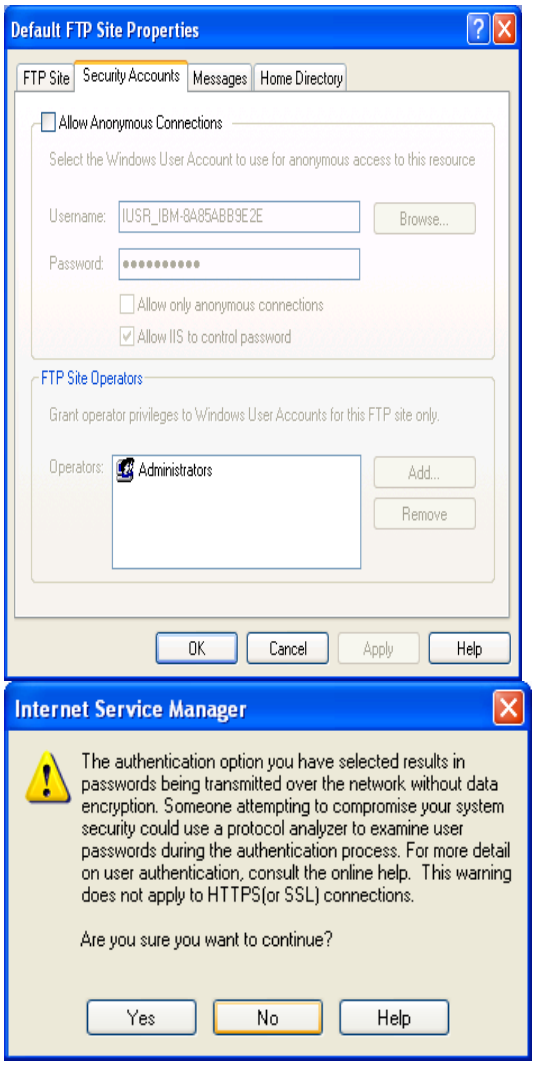


10.10 At the **FTP Site** tab, type **64.1.1.1** into the **IP Address** box as shown below. Click **OK**.

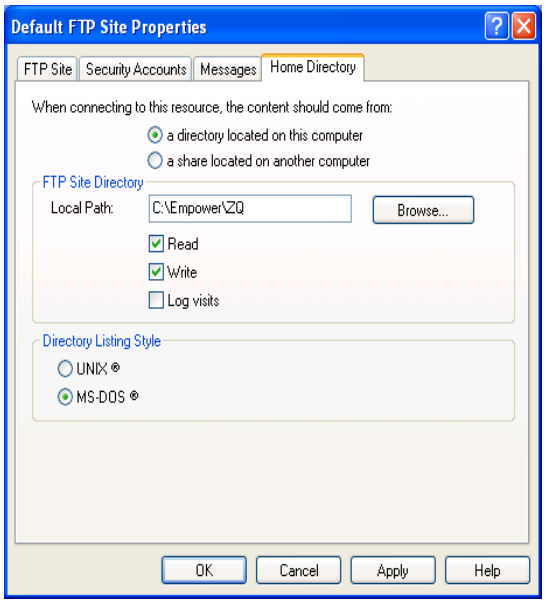


10.11 Click the **Security Accounts** tab.
Click the **Allow Anonymous Connections** checkbox to clear it as shown below left.

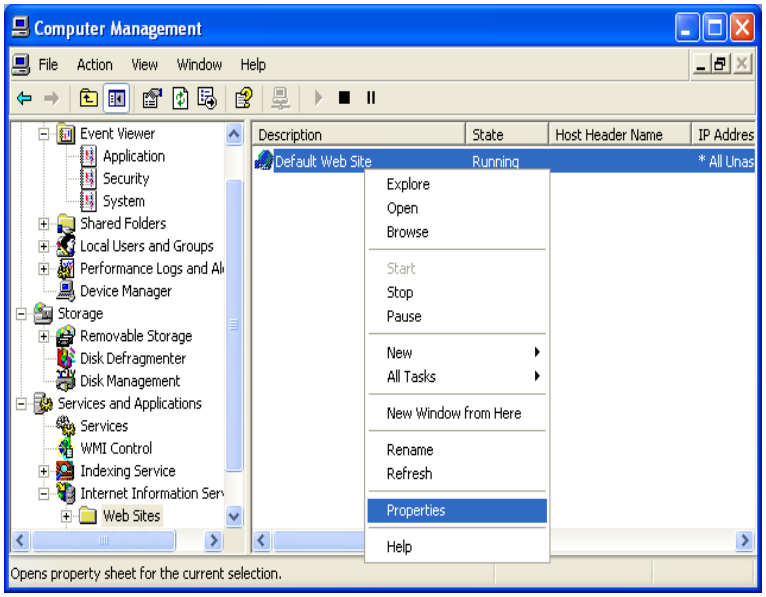
10.12 Click **Yes** at the Internet Service Manager warning message shown below right.
Back at the Security Accounts tab, click **Apply**.



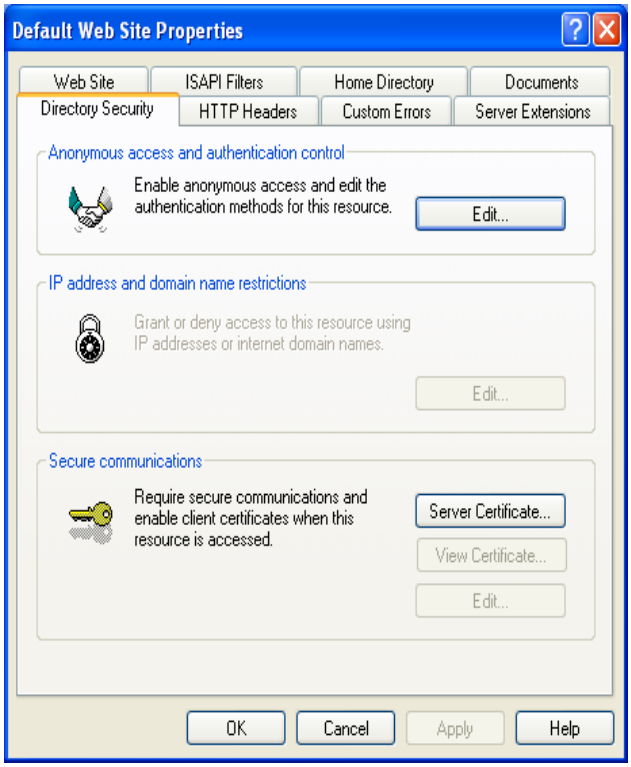
10.13 Click the **Home Directory** tab. Ensure that **Read** and **Write** are selected, and that **Log Visits** is deselected in the check boxes under Local Path.
For **MassLynx**, type **C:** in the Local Path text box.
For **Empower**, the Empower software will have to be installed before the Home Directory can be specified. After Empower software installation, re-enter **Default FTP site Properties**. For the ZQ 2000/4000 Instrument, type **C:\Empower\ZQ** in the Local Path text box as shown below, or click **Browse,** find the folder, and Click **OK** to close Browse.
Note: For the EMD 1000 Instrument only, when the EMD 1000 software is installed, it will set the **Local Path:** to **C:\Empower\Instruments\MassSpec**.



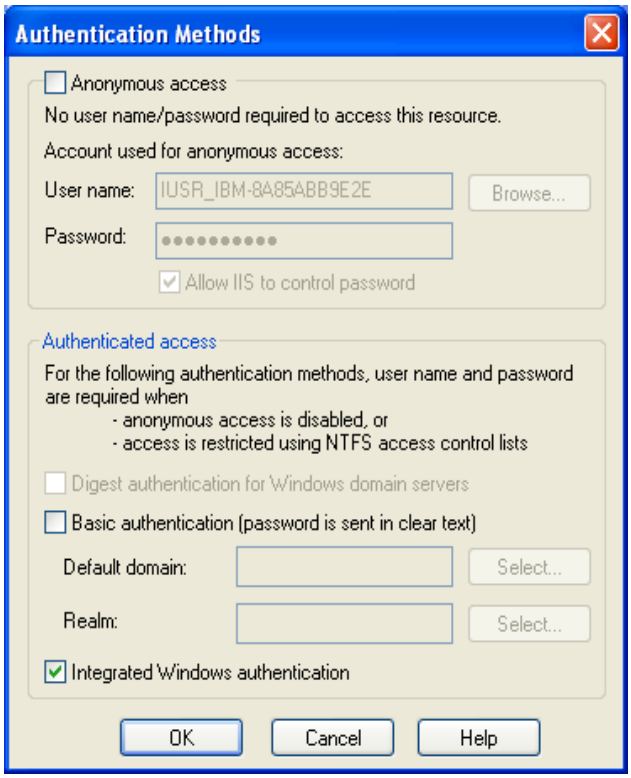
10.14 Click **OK** to save the changes. Back at Computer Management, on the left side, under **Internet Information Services**, click **Web Sites**.
On the right side, right-click **Default Web Site** and select **Properties**.



10.15 Click the **Directory Security** tab. Click the **Edit** button.

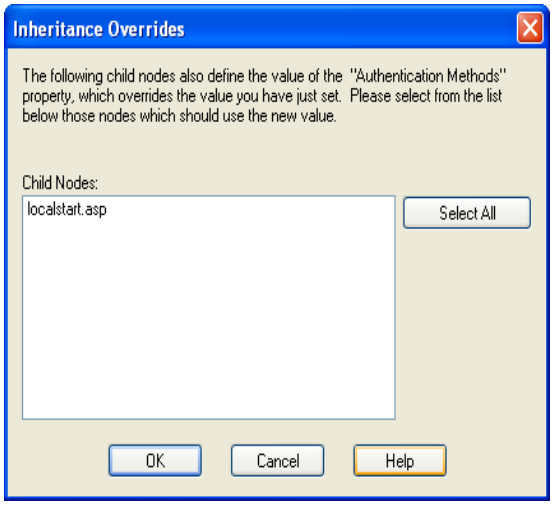


10.16 Click the checkbox next to **Anonymous access** to deselect it as shown below. Click **OK**.

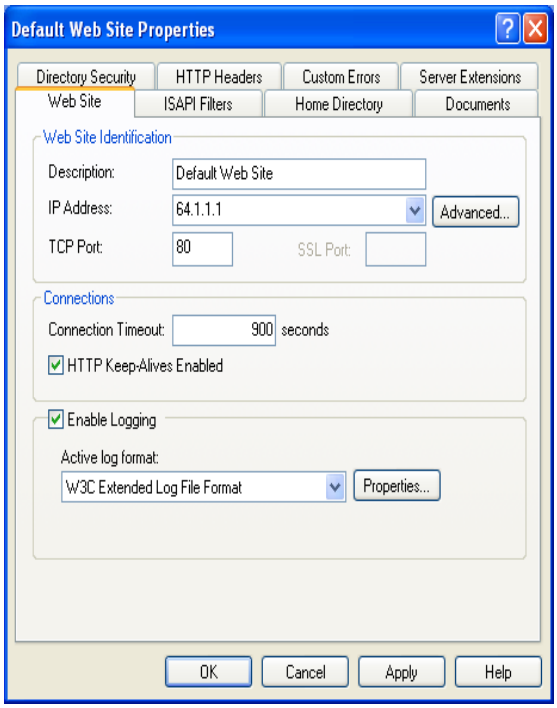


10.17 Back at the **Directory Security** tab, click **Apply**.

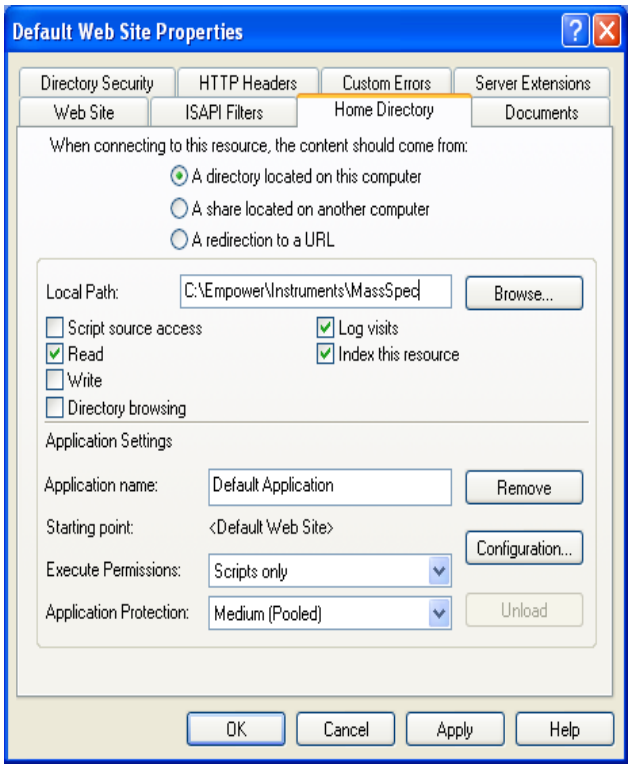
Click **OK** at the Inheritance Overrides message.



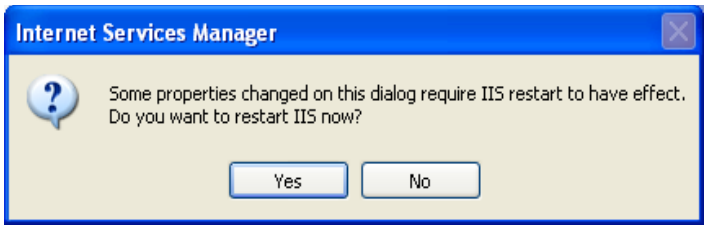
10.18 Click the **Web Site** tab. Type **64.1.1.1** into the **IP Address** box as shown below. Click **OK**.



10.19 Click the **Home Directory** tab. For **MassLynx**, type **C:** in the Local Path text box. For **Empower**, the Empower software will have to be installed before the Home Directory can be specified. After Empower software installation, re-enter **Default Web site Properties**. For the ZQ 2000/4000 Instrument, type **C:\Empower\ZQ** in the Local Path text box or click **Browse,** find the folder, and Click **OK** to close Browse. For the EMD 1000 Instrument, set the Local Path t **C:\Empower\Instruments\MassSpec** as shown below.



10.20 Click **No** at the Restart IIS message. Click the **'x'** to close Computer Management. Restart the system and logon as a user with Administrator privileges.



Remember that there are 2 instances in which settings must be changed after installation of Empower:

- For **Empower**, the Empower software will have to be installed before the Home Directory can be specified. After Empower software installation, re-enter **Default FTP site Properties**. For the ZQ 2000/4000 Instrument, type **C:\Empower\ZQ** in the Local Path text box as shown below, or click **Browse,** find the folder, and Click **OK** to close Browse.
  Note: For the EMD 1000 Instrument only, when the EMD 1000 software is installed, it will set the **Local Path:** to **C:\Empower\Instruments\MassSpec**
  Refer Step 10.13 for screenshot.

- For **Empower**, the Empower software will have to be installed before the Home Directory can be specified. After Empower software installation, re-enter **Default Web site Properties**. For the ZQ 2000/4000 Instrument, type **C:\Empower\ZQ** in the Local Path text box or click **Browse,** find the folder, and Click **OK** to close Browse.
  For the EMD 1000 Instrument, set the Local Path to **C:\Empower\Instruments\MassSpec** as shown below.
  Refer Step 10.19 for screenshot