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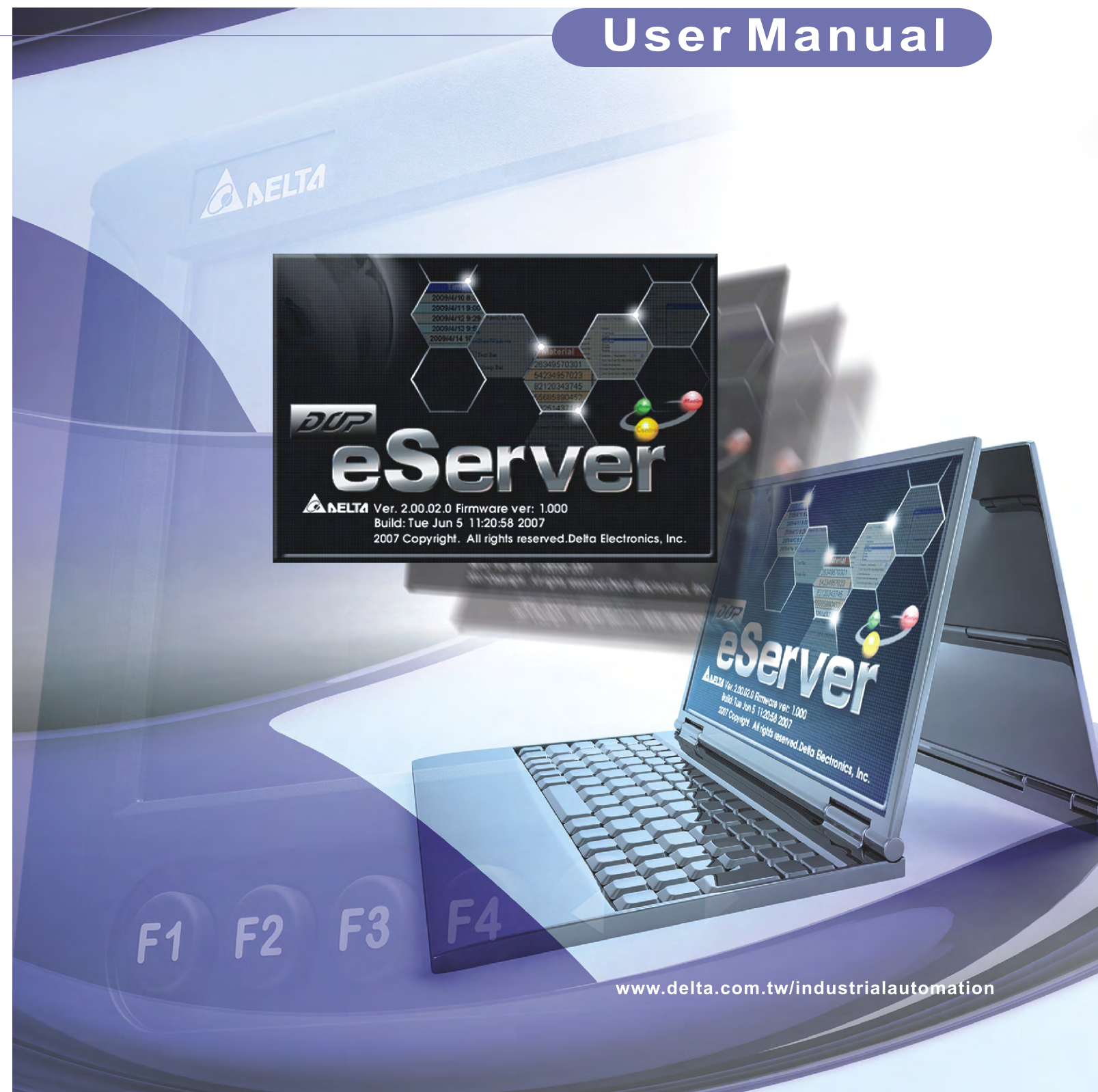
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DUP eServer

User Manual



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Table of Contents

Chapter 1 Introduction

1.1 eServer Data Collection Software	1-1
1.2 Supported Models.....	1-2
1.3 System Requirement	1-2

Chapter 2 Software Installation

2.1 eServer Setup.....	2-1
2.1.1 Software Installation	2-1

Chapter 3 Before Using eServer

3.1 Update Firmware	3-1
3.2 Networking Settings	3-2
3.2.1 Setting PC Network.....	3-2
3.2.2 Setting HMI Network.....	3-5
3.3 Start eServer	3-6
3.4 eServer Options	3-7
3.4.1 Synchronize Function	3-7
3.4.2 Disconnect Function	3-9
3.4.3 Local Host	3-10
3.5 Make Runtime Shortcut.....	3-11

Chapter 4 Excel Sampling Setting

4.1 Detailed Settings.....	4-1
4.1.1 Linkage	4-1
4.1.2 Excel Template Sheet Design.....	4-3
4.1.3 Excel Logging Range Setting.....	4-4

4.1.4	Register Setting	4-7
4.1.5	Sampling Conditions	4-9
4.1.6	Output Setting	4-10
Chapter 5 Writing Data in Microsoft Excel		
5.1	Example	5-1
5.1.1	Create HMI Project File	5-1
5.1.2	eServer Setting	5-4
Chapter 6 ODBC Sampling Setting		
6.1	Detailed Settings	6-1
6.1.1	Linkage	6-1
6.1.2	ODBC (Open Data Base Connectivity)	6-3
6.1.3	Register Setting	6-5
6.1.4	Sampling Conditions	6-6
Chapter 7 Writing Data in Microsoft Access		
7.1	Example	7-1
7.1.1	Database Setting	7-1
7.1.2	Create HMI Project File	7-13
7.1.3	eServer Setting	7-16
Chapter 8 Writing Data in MySQL		
8.1	Example	8-1
8.1.1	Software Installation	8-1
8.1.2	Create HMI Project File	8-19
8.1.3	eServer Setting	8-22
Chapter 9 Writing Data in Oracle		
9.1	Example	9-1

9.1.1	Software Installation	9-1
9.1.2	Create HMI Project File	9-13
9.1.3	eServer Setting	9-16
Chapter 10 Recipe Access Setting		
10.1	Detailed Settings	10-1
10.1.1	New Project	10-1
10.1.2	Register Setting	10-3
10.1.3	Sampling Conditions	10-5
Chapter 11 Recipe Access Example		
11.1	Creating Example	11-1
11.1.1	New Project	11-2
11.1.2	Node	11-3
11.1.3	Setting and Condition - Import	11-4
11.1.4	Setting and Condition - Export	11-16
Appendix A Upload/Download via Ethernet		
A.1	Configuration Settings	A-1
A.2	COM Port Settings	A-3
A.3	Compile and Upload / Download Screen & Recipe	A-8

About this Manual...

User Information

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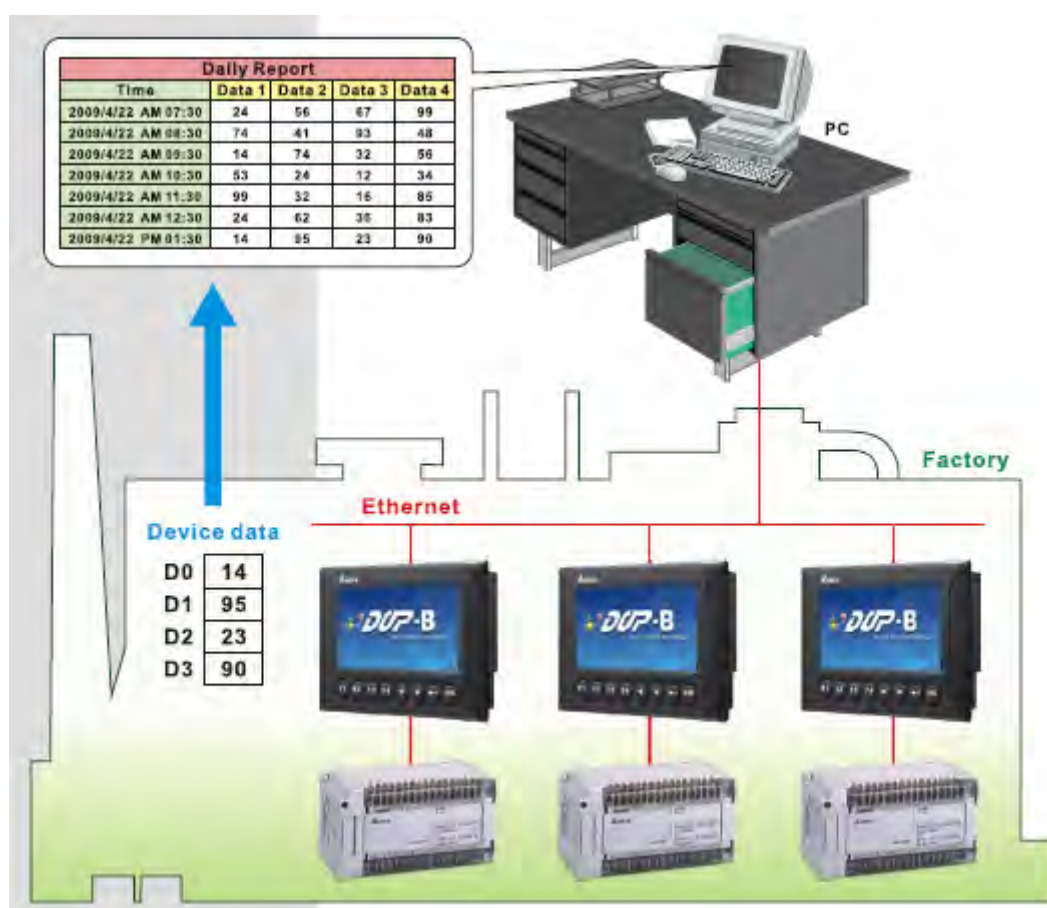
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Chapter 1 Introduction

1.1 eServer Data Collection Software

eServer is a PC software used to help the customers collect and transfer production information and history data directly from production site to a PC in the office via Ethernet. eServer also supports Microsoft Excel (hereinafter “Excel”) software functions, such as formulas, tables and graphs. This allows that the collected data can be saved in user-defined Excel file according to various purposes for the customers to easily and quickly create required production reports. In addition, it also supports ODBC interface which is able to save the collected data to a database for the purpose of management and use in production sites.



1.2 Supported Models

The supported models for eServer Data Collection Software are listed in the table below.

Series	Model Name	Remark
DOP-AE Series	DOP-AE57BSTD	DOP series Extension Ethernet Module, DOP-EXLNHJ1AE is required when using eServer with DOP-AE series HMI product.
	DOP-AE57GSTD	
	DOP-AE57CSTD	
	DOP-AE80THTD1	
	DOP-AE10THTD1	
DOP-B Series	DOP-B10E615	
	DOP-B07E415	
	DOP-B08E515	

1.3 System Requirement

Below are the system requirements to comply with the operating environment of eServer:

Hardware / Software	System Requirement
CPU	Pentium 4, 1.6GHz or greater is recommended
Memory	1GB and above is recommended
Hard Disk	Capacity: 50MB and above
Monitor	Support resolution: 1024 × 768 or higher full-color display.
Printer	Printer compatible with Windows 2000 / Windows XP / Windows Vista / Windows 7
Operation System	Windows 2000 / Windows XP / Windows Vista / Windows 7
Supported Microsoft Office Software	Microsoft Office 2000 Microsoft Office 2003 Microsoft Office 2007

Chapter 2 Software Installation

2.1 eServer Setup

In this chapter, it will introduce general functions of eServer with Windows. The users can use it to design what they want. Detail information for each function will be discussed in the following chapters.

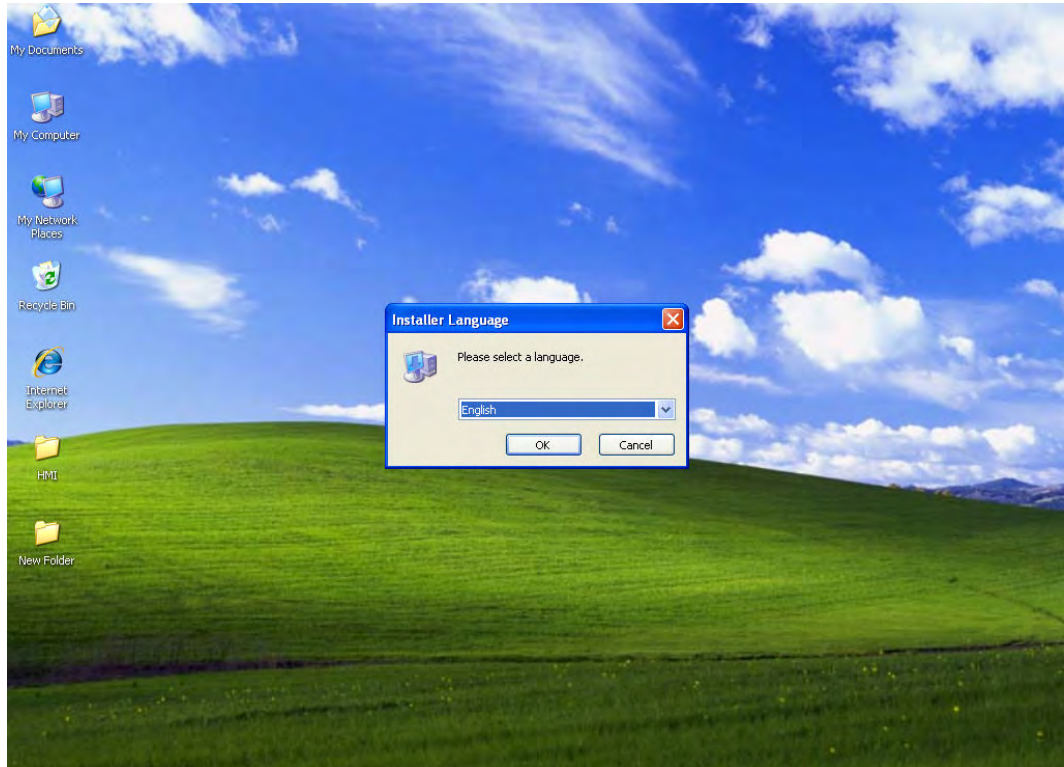
2.1.1 Software Installation

To start the eServer setup, please refer to the following steps:

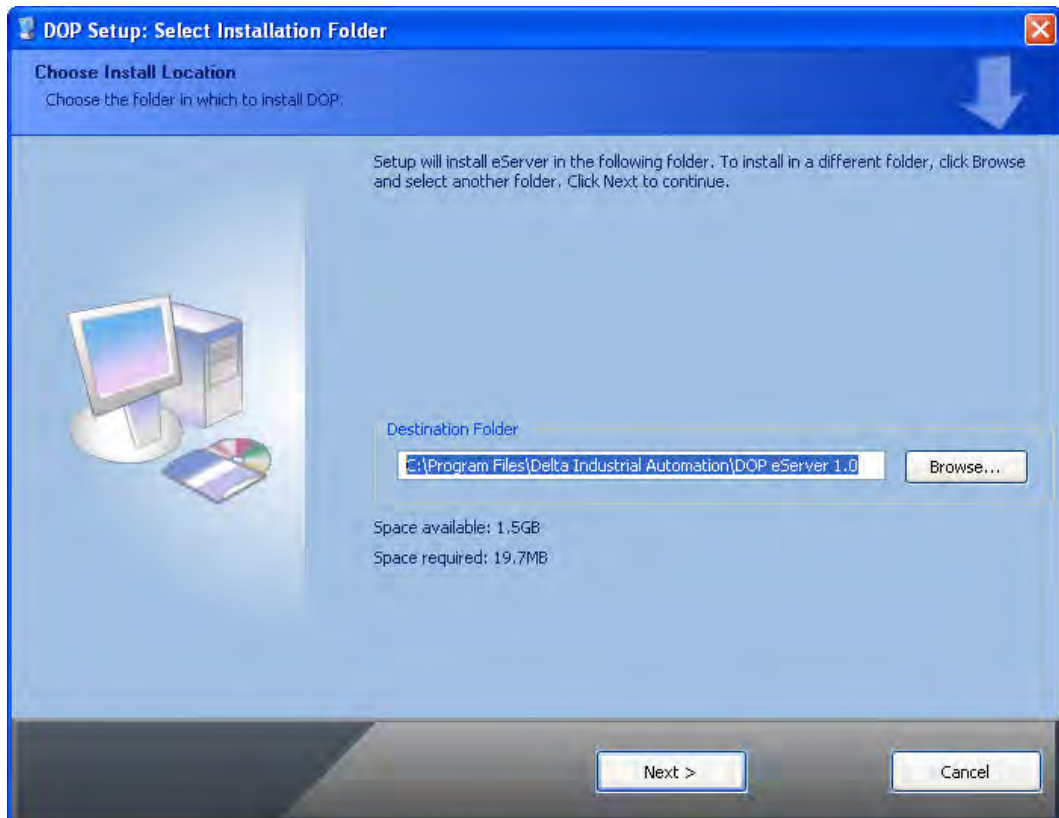
Step 1. Please start-up your computer to Windows 2000 / Windows XP / Windows Vista / Windows 7 system.



- Step 2. Execute **setup.exe** from Windows taskbar by clicking “Start” > “Run”. After pressing **OK**, the system will setup automatically and the following dialog box will appear for selecting the desired display language.



- Step 3. After pressing OK, the system will setup automatically and the users will get the following dialog box to choose destination location.

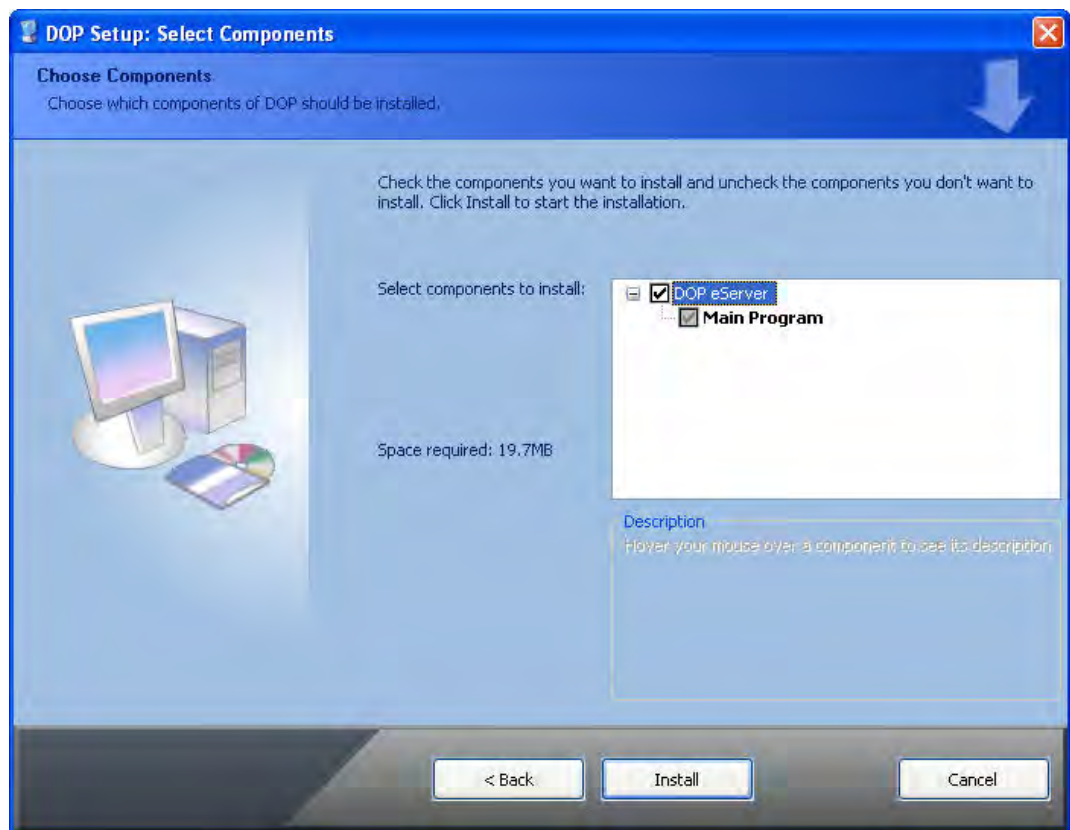


To select the default directory **C: \Program Files\Delta Industrial Automation\DOP eServer 1.0**, click **Next>** for the next step. Setup will install in the directory indicated in the Destination Directory box at the bottom of the dialog box.

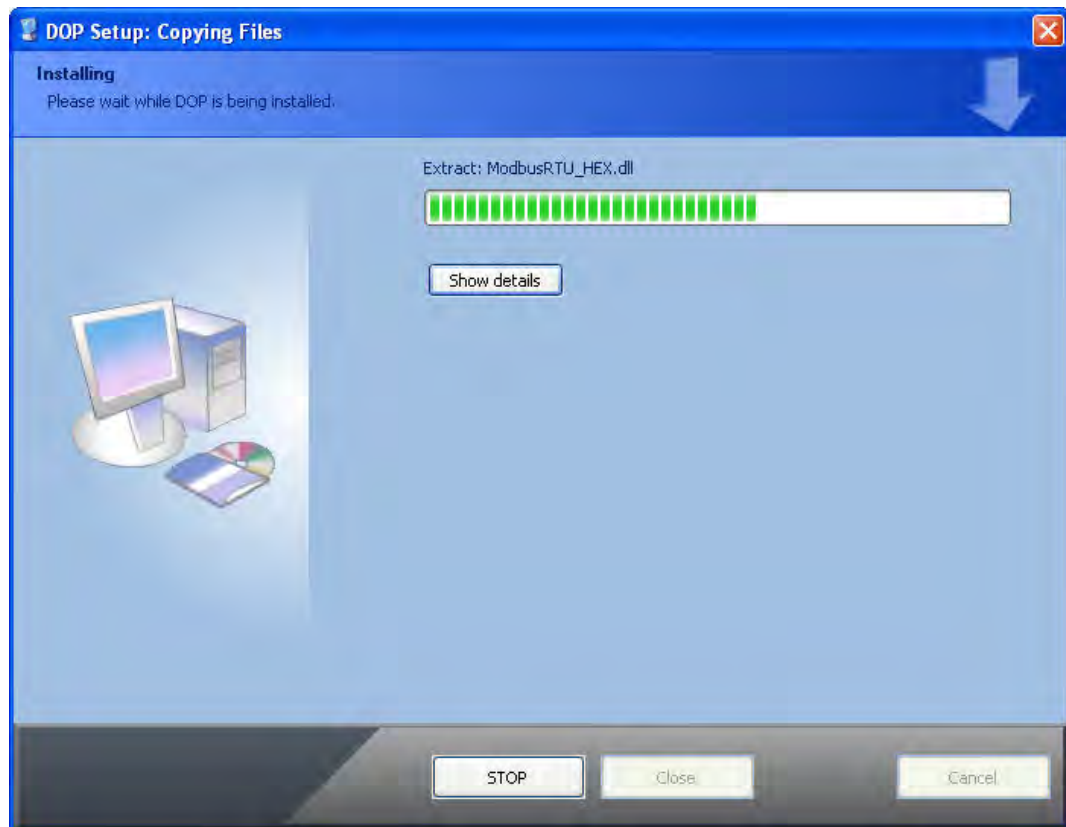
To select a directory other than the default directory, click **Browse**. A list of available directories appears. Highlight the desired directory for the Delta eServer and click **OK**, then **Next>** for the next step.

If necessary, click **< Back** button to take you back through Setup dialog boxes one by one.

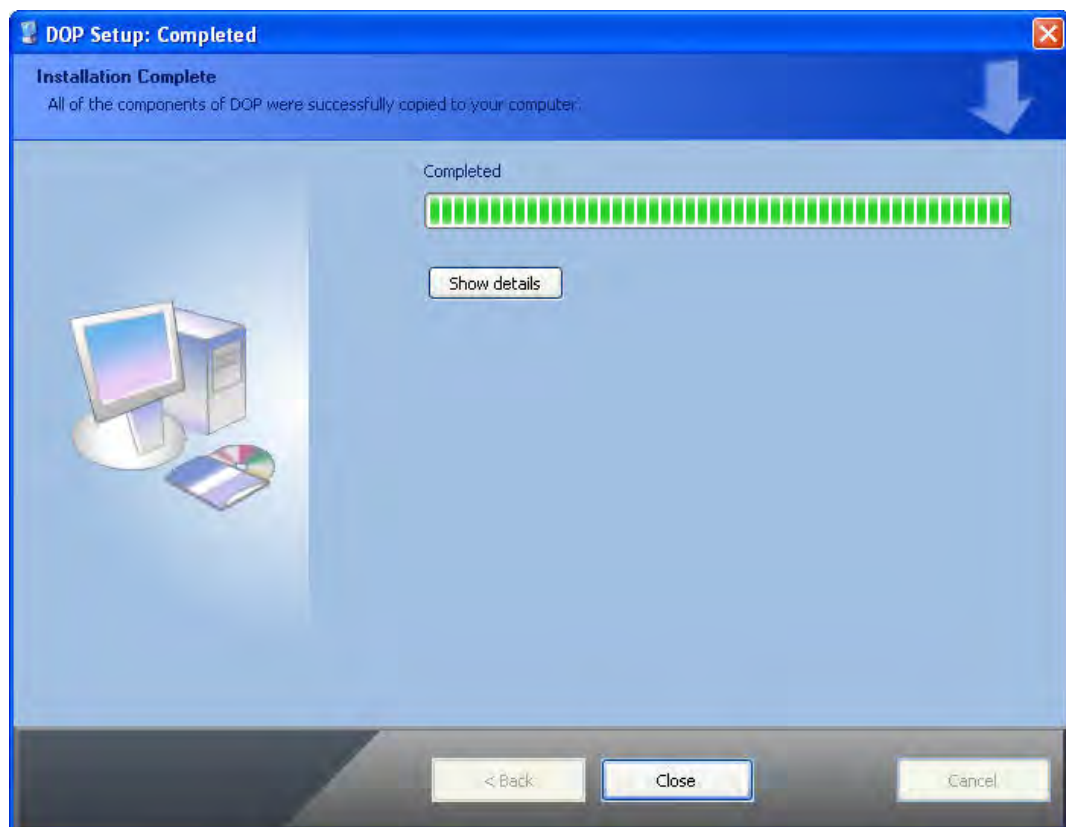
- Step 4. After pressing **Next**, the following dialog box will appear and ask the users to select the installation software, i.e. DOP eServer. Then click **Install** button to start DOP eServer installation.



Step 5. The system will start DOP eServer Installation.



Step 6. DOP eServer has been installed successfully. Press **Close** to finish the installation.

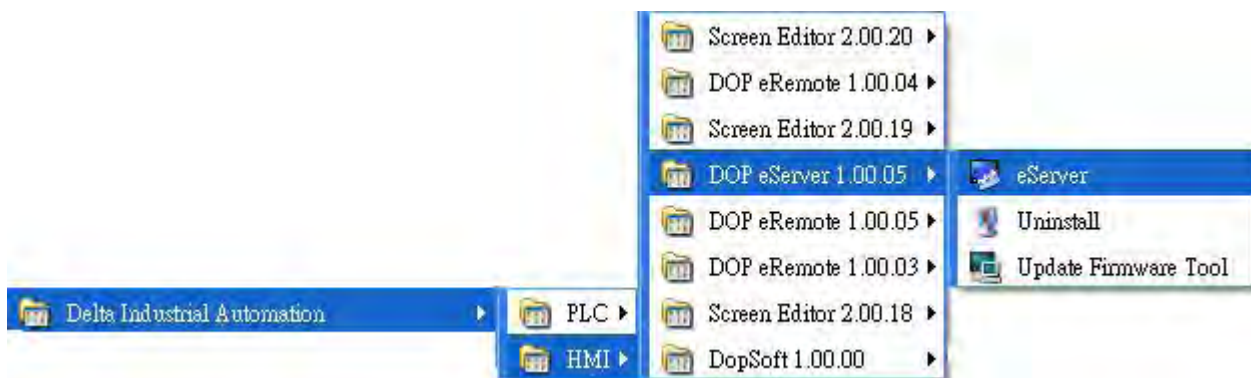


Chapter 3 Before Using eServer

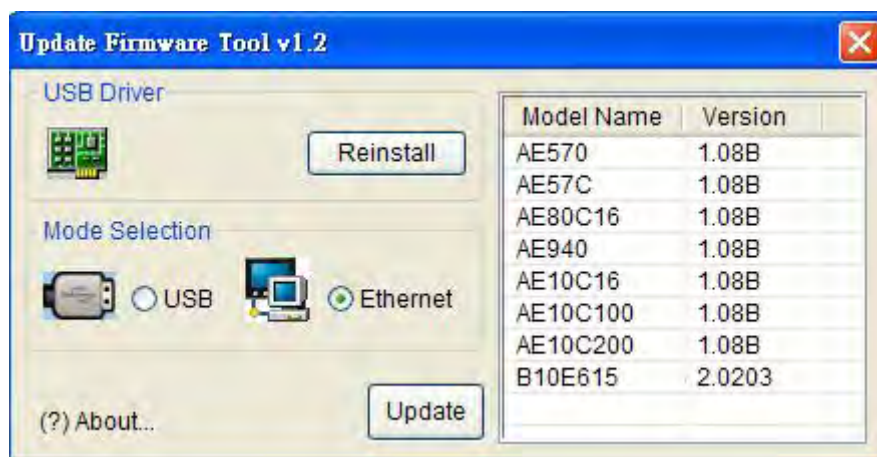
Before using eServer, the users need to update HMI firmware and complete PC and HMI network settings. Please ensure to read the following instructions fully so that the users could understand how to update HMI firmware and complete PC and HMI network settings correctly.

3.1 Update Firmware

Remember to update the firmware before using eServer. To select this function, click **Start > Programs > Delta Industrial Automation > HMI > DOP eServer 1.00.0x > Update Firmware Tool**.



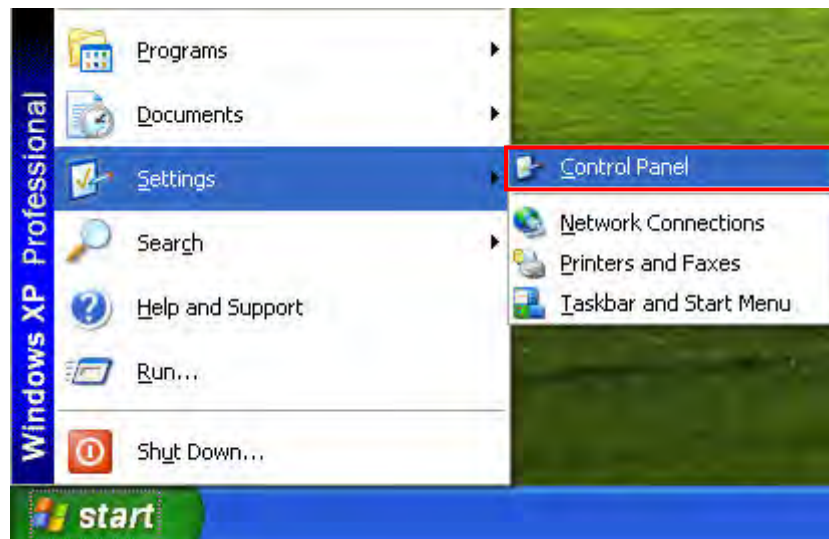
The system will detect if the HMI firmware is the same as the firmware included in eServer. If the HMI firmware is older than the firmware included in eServer, a warning message will pop up to ask for updating the firmware. After clicking **Update Firmware Tool**, the following dialog box will appear for the users to select the communication interface (the default setting is USB driver). Press **Update** button to update HMI firmware automatically. The function of **Update Firmware Tool** is the same as the function of **Update Firmware** provided in eServer (click **Tool > Update Firmware**).



3.2 Networking Settings

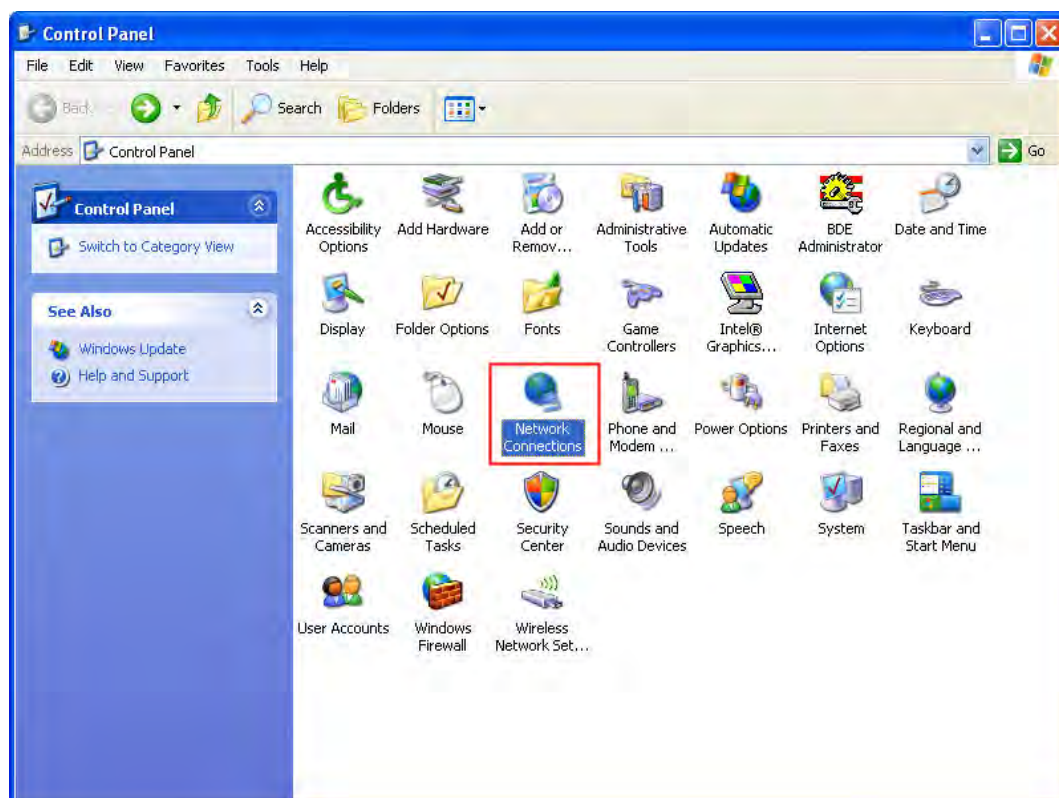
Ensure to observe the following instructions to complete PC networking settings before eServer operation.

3.2.1 Setting PC Network

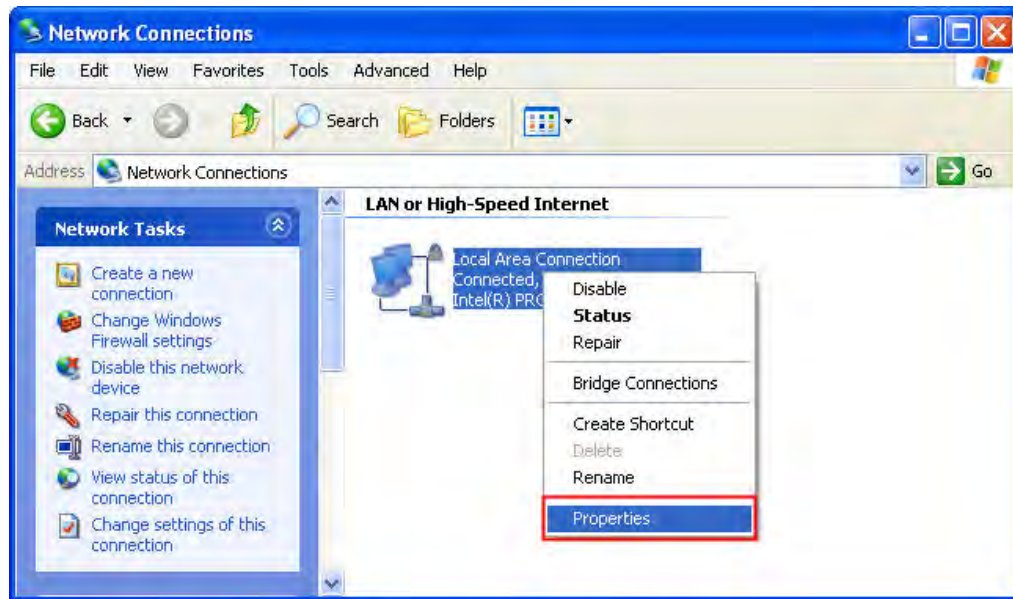


Power on PC and start Windows. Click **Start > Programs**, point to Control Panel, and then

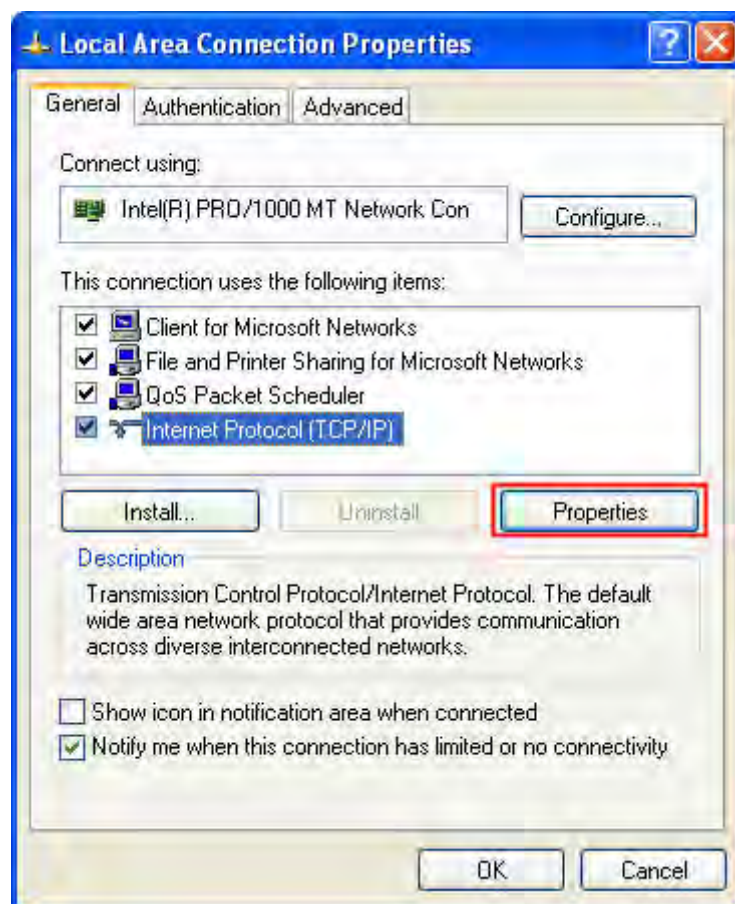
select Network Connections ().



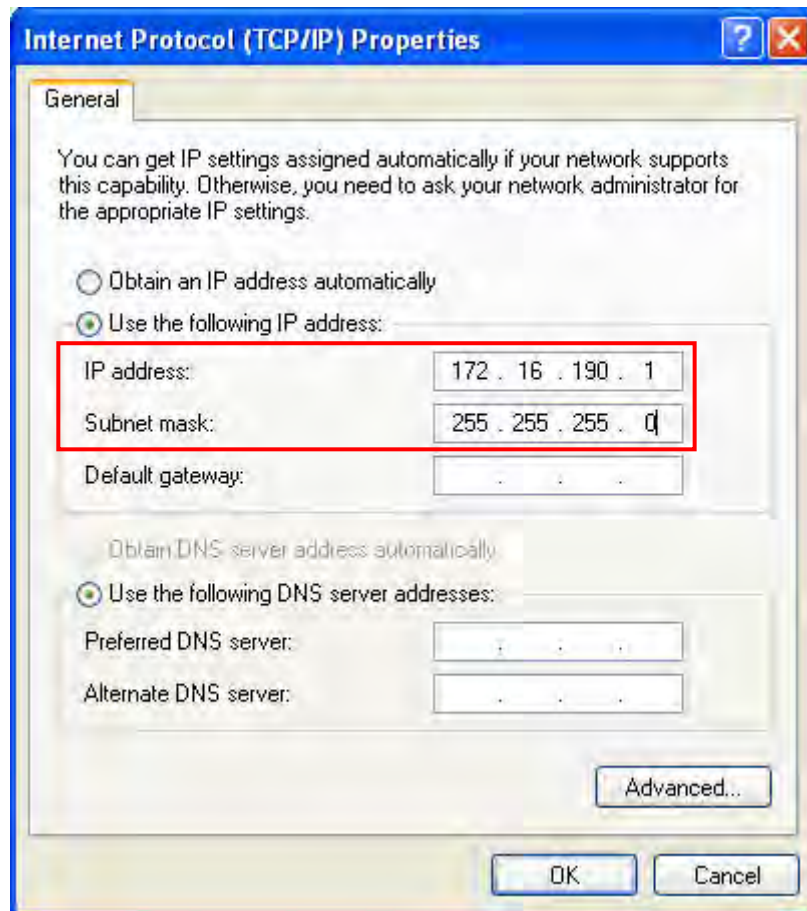
Double-click **Network Connections** icon, the following windows will appear. Right-click the **Local Area Connection** icon, and then select **Properties** from the pop-up menu.



The **Local Area Connection Properties** dialog box will open. Use **General** tab to select **Internet Protocol (TCP/IP)**. Then, press **Properties** button.



The **Internet Protocol (TCP/IP) Properties** dialog box will open. Choose **Use the following IP address** and enter the IP address numbers of the PC into the field of **IP address** and **Subnet mask**.

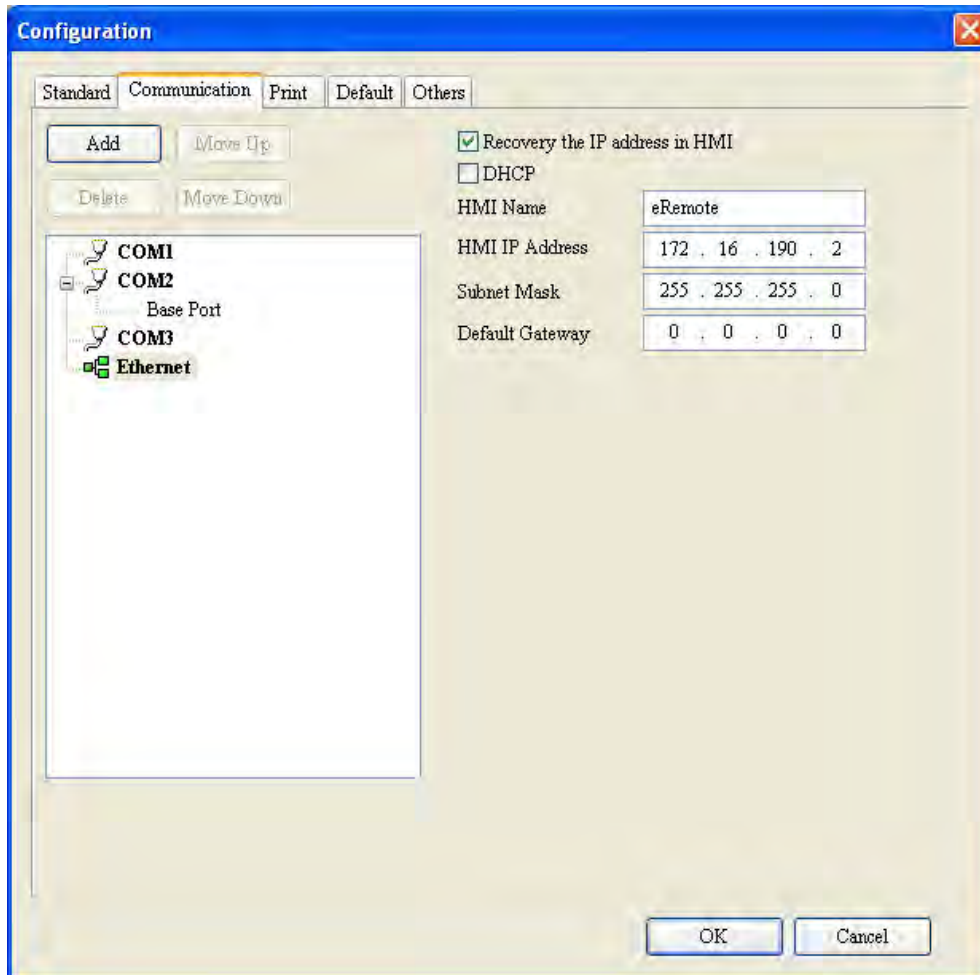


Then, press **OK** button to finish the settings.

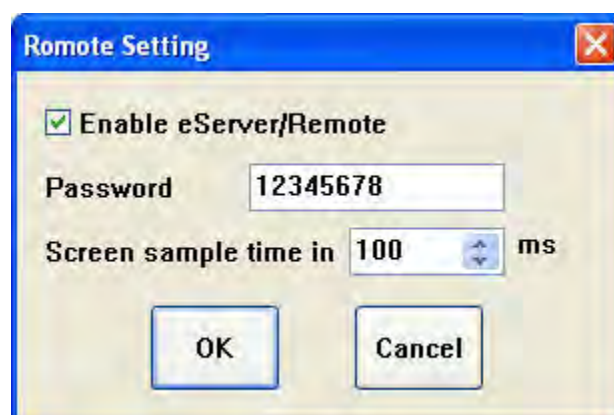
Please note that if the IP address numbers of subnet masks of the PC and HMI are different, HMI may not be displayed in the list when finding node.

3.2.2 Setting HMI Network

Start Screen Editor software program and click **Options > Configuration**. Use **Communication** tab to select **Ethernet** and complete HMI networking settings shown as the figure below. Then, press **OK** button to finish the settings.



Then, click **Options > Networking**. The following **Remote Setting** dialog box will appear. Check the check box before **Enable eServer/Remote** and set a password for network communication. After **OK** button is pressed, HMI networking is completed. Compile the edited project file at the end of the programming and the edited project file could be transferred to HMI.



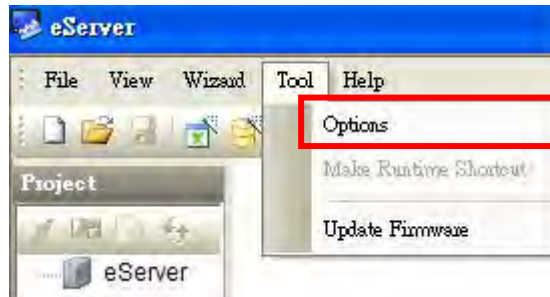
3.3 Start eServer

To start eServer, click **Start > Programs > Delta Industrial Automation > HMI > DOP eServer 1.00.0x > eServer**.



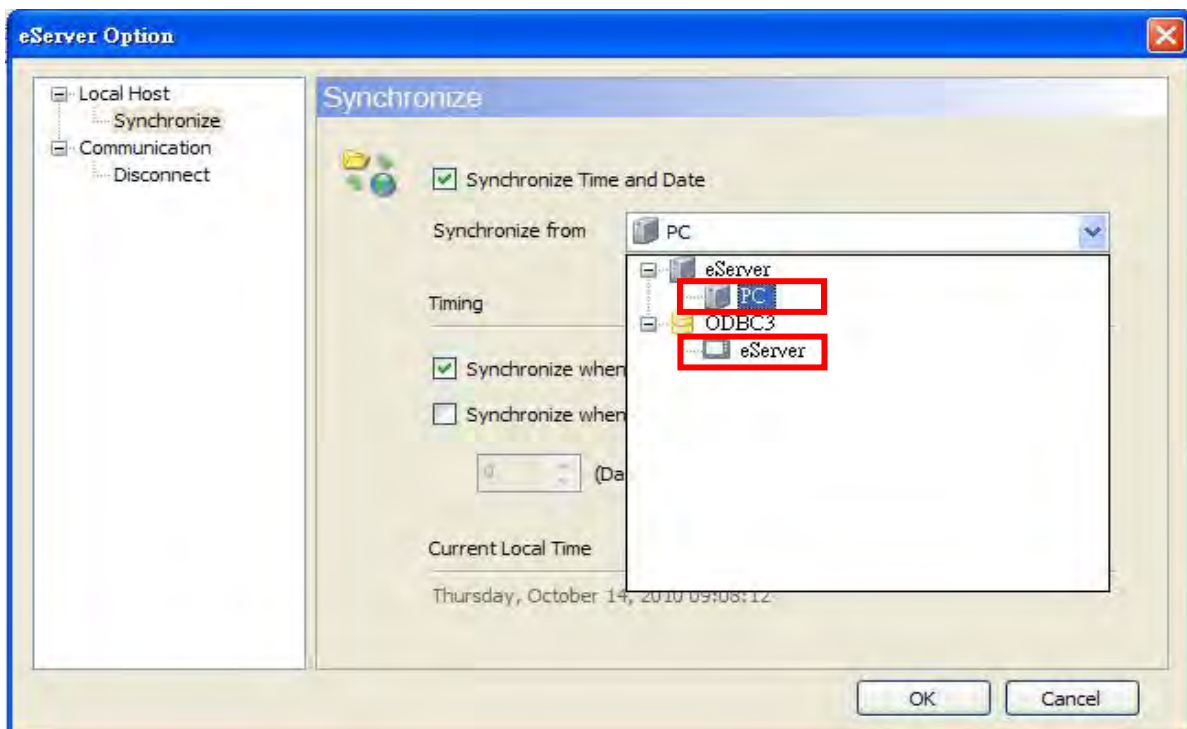
3.4 eServer Options

Start eServer and click **Tool > Options** to synchronize Time and Date settings and perform Disconnect function. When the type on Condition page is selected as Trigger, it is necessary to set the PC Ethernet port number that you have connected. The default setting is 12348.



3.4.1 Synchronize Function

Click **Tool > Options** to enter **eServer Option** dialog box. After the box before "Synchronize Time and Date" is checked, the Synchronize function is enabled and the users can choose the source of synchronization function shown as the figure below. When PC is selected, it indicates that the time and date of HMI are both synchronized with the PC. If a linkage (node) is selected, it indicated that the time and date of HMI and PC are all synchronized with the selected linkage.

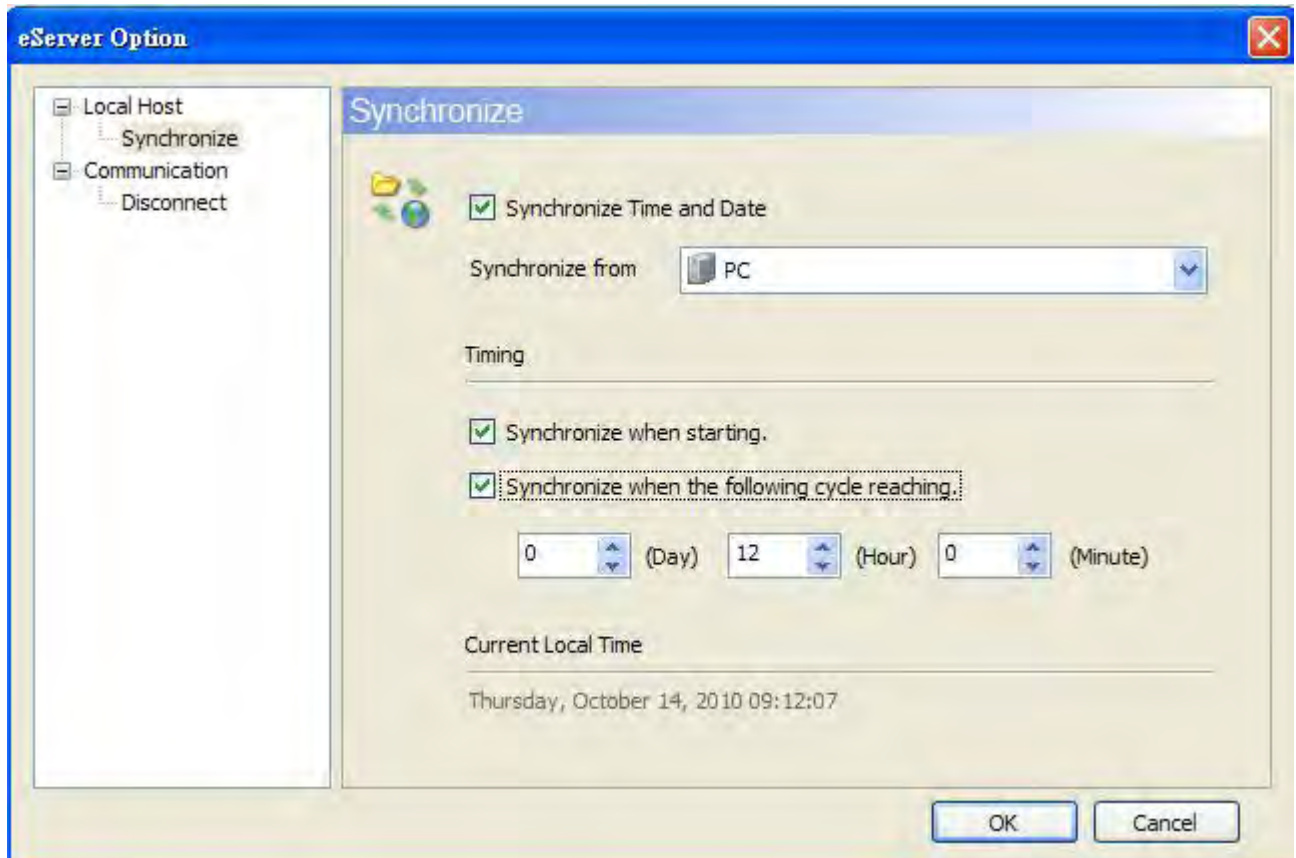


After enable “Synchronize” function, set the timing for synchronizing the time and date.

There are two selections for setting the timing:

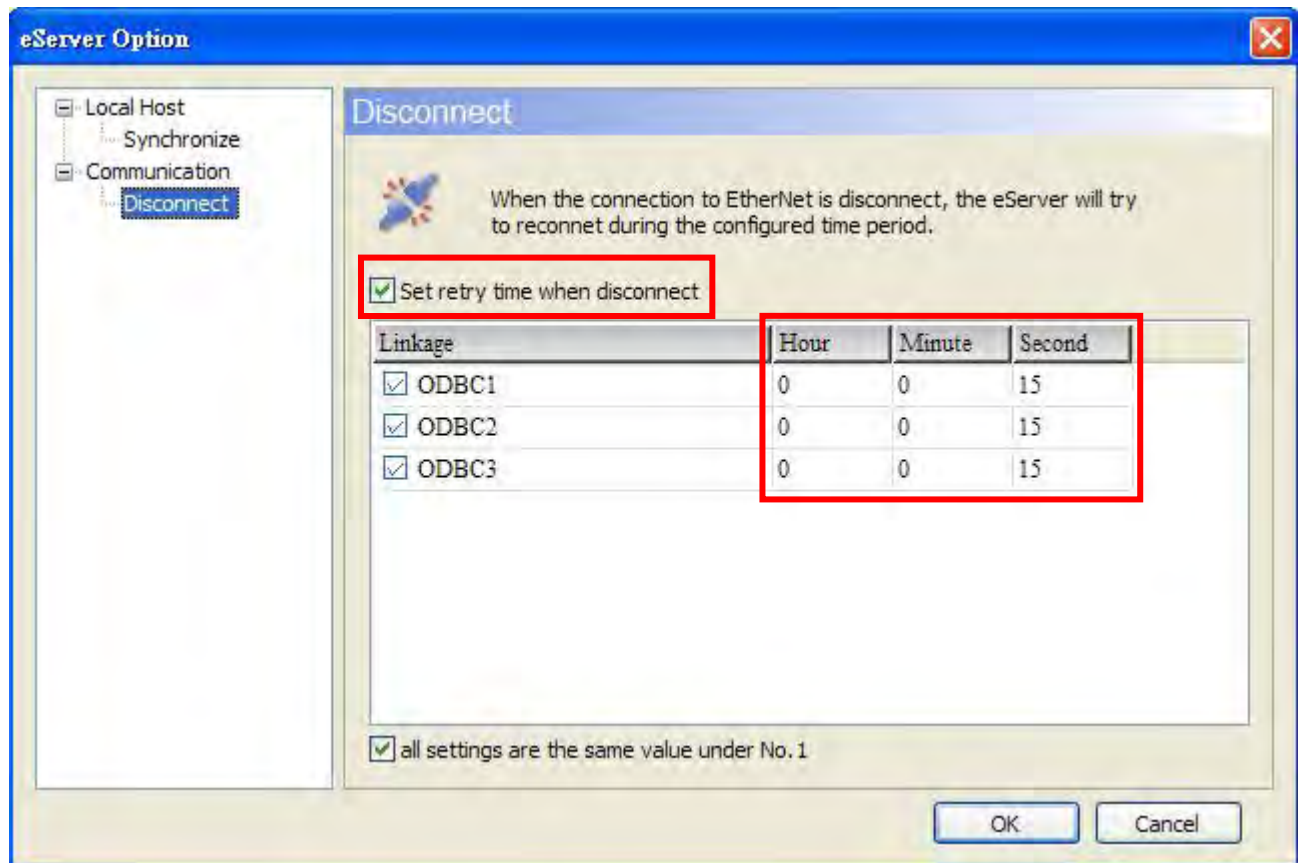
one is “Synchronize when starting” and the other is “Synchronize when the following cycle reaching”. Please refer to the figure below.

If “Synchronize when starting” is selected, the time and date of HMI will be synchronized when eServer is started. If “Synchronize when the following cycle reaching” is selected and the cycle time is set to 12 hours, the time and date of HMI will be synchronized once every 12 hours.



3.4.2 Disconnect Function

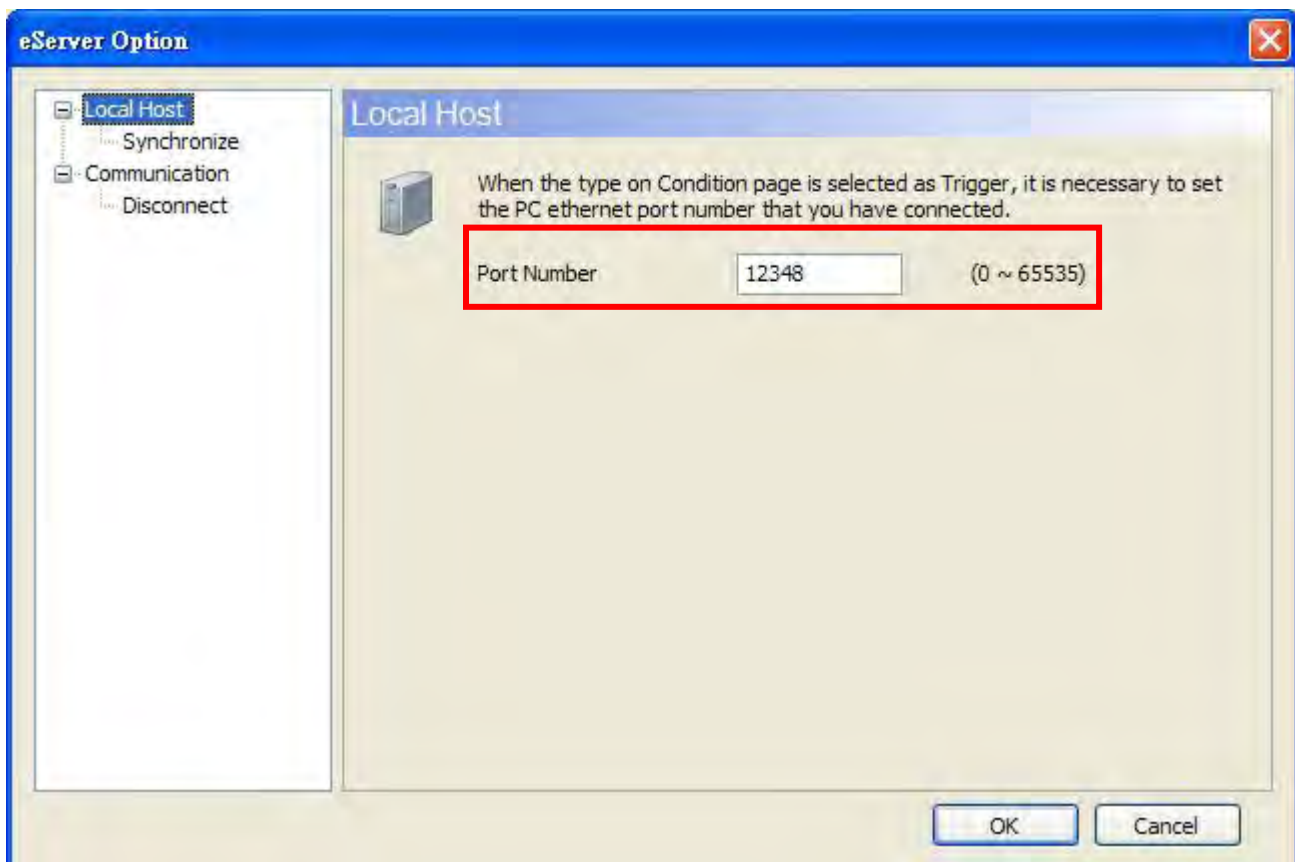
This function allows the system to automatically resume the communication to Ethernet. When the connection to Ethernet is disconnected, the eServer will try to reconnect during the configured time period.



For example, see the above figure, if the time is set to 15 seconds, when the connection to Ethernet is disconnected, the eServer will try to resume the communication for 15 seconds.

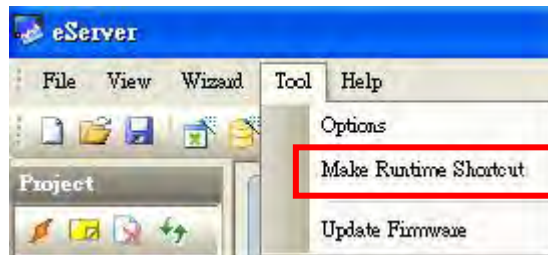
3.4.3 Local Host

When the type on Condition page is selected as Trigger, it is necessary to set the PC Ethernet port number that you have connected. The default setting is 12348.

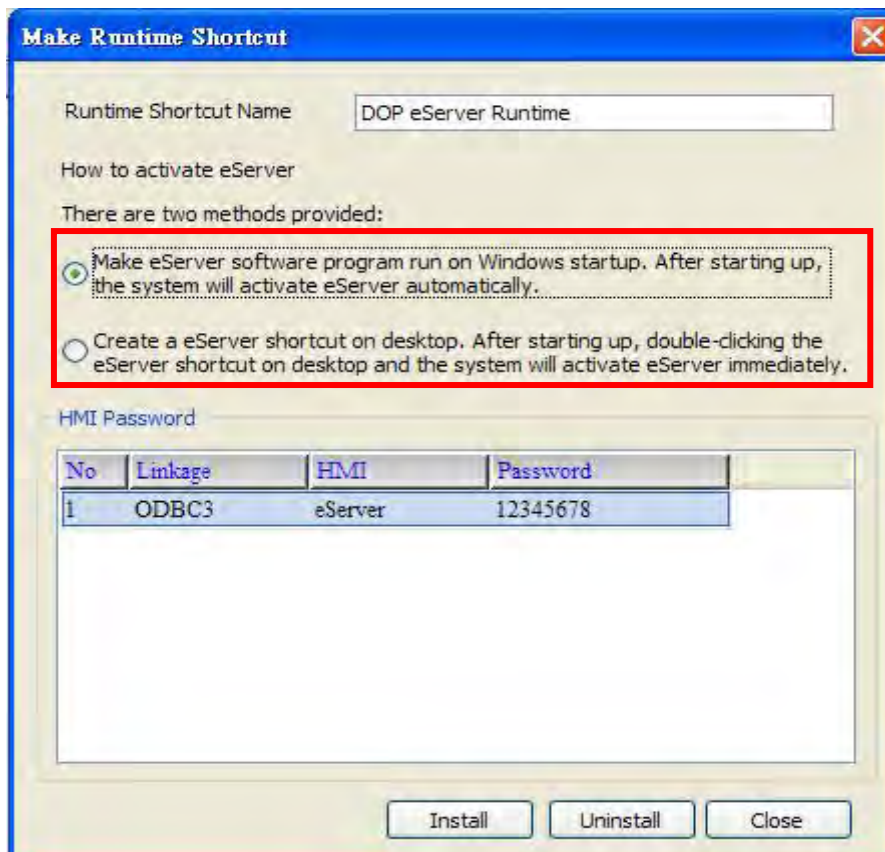


3.5 Make Runtime Shortcut

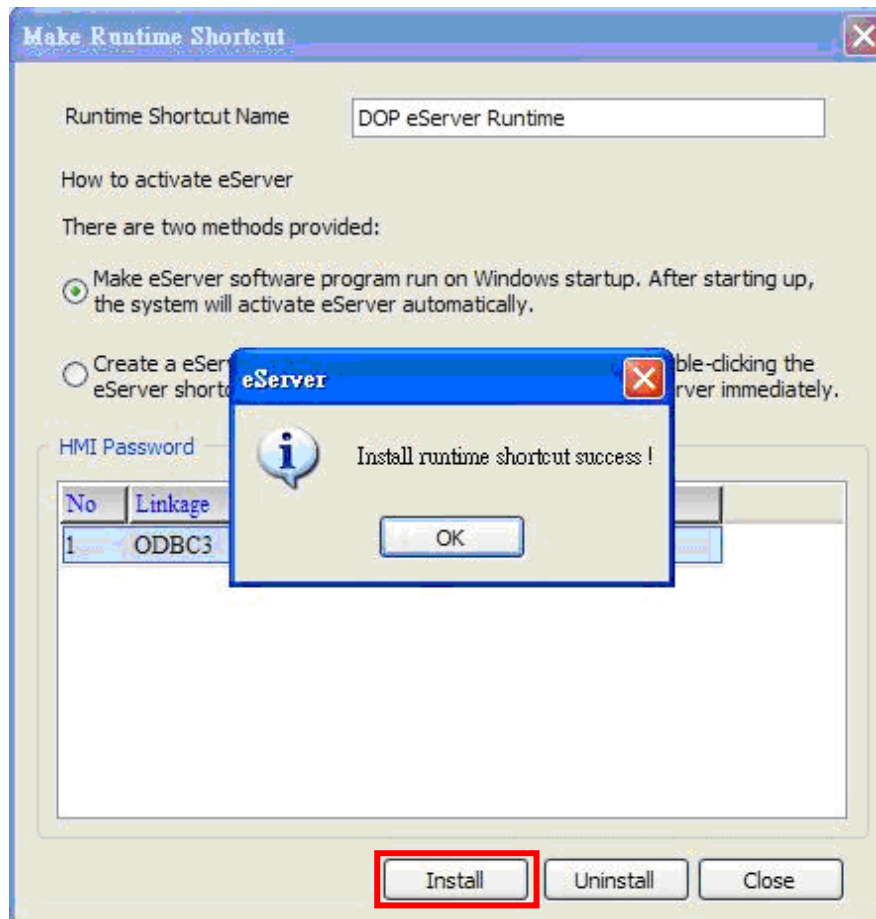
Start eServer and click **Tool > Make Runtime Shortcut** to create a eServer shortcut and activate eServer quickly.



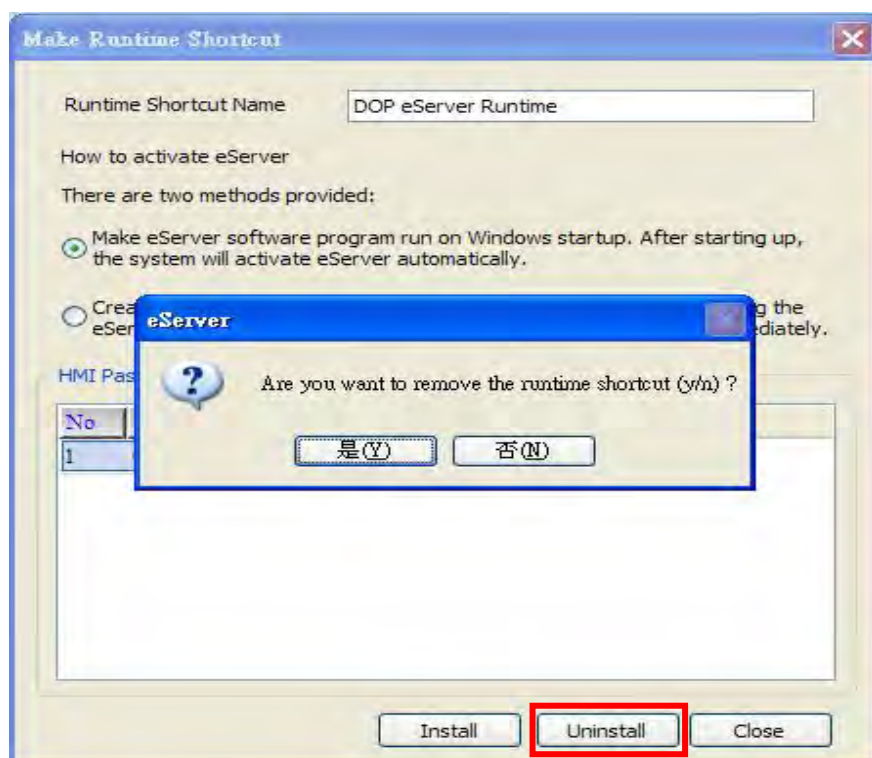
There are two methods provided for making Runtime Shortcut. Please refer to the figure below.

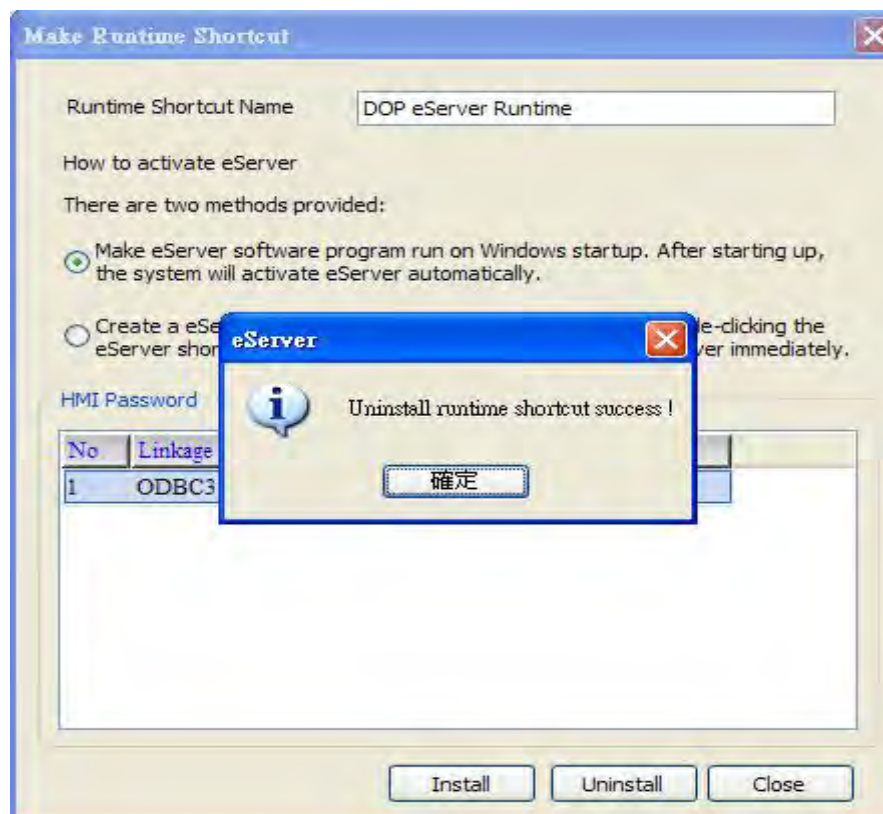


When selecting the desired method, press **Install** button to finish the settings.



If the users want to delete the shortcut, please start eServer, click **Tool > Make Runtime Shortcut** and press **Uninstall** button to remove the shortcut. Failure to follow the above instruction to delete the shortcut will result in system error or abnormal operation.





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Chapter 4 Excel Sampling Setting

4.1 Detailed Settings

Please refer to the following steps to complete Excel sampling setting, i.e. how to log data from HMI to Excel.

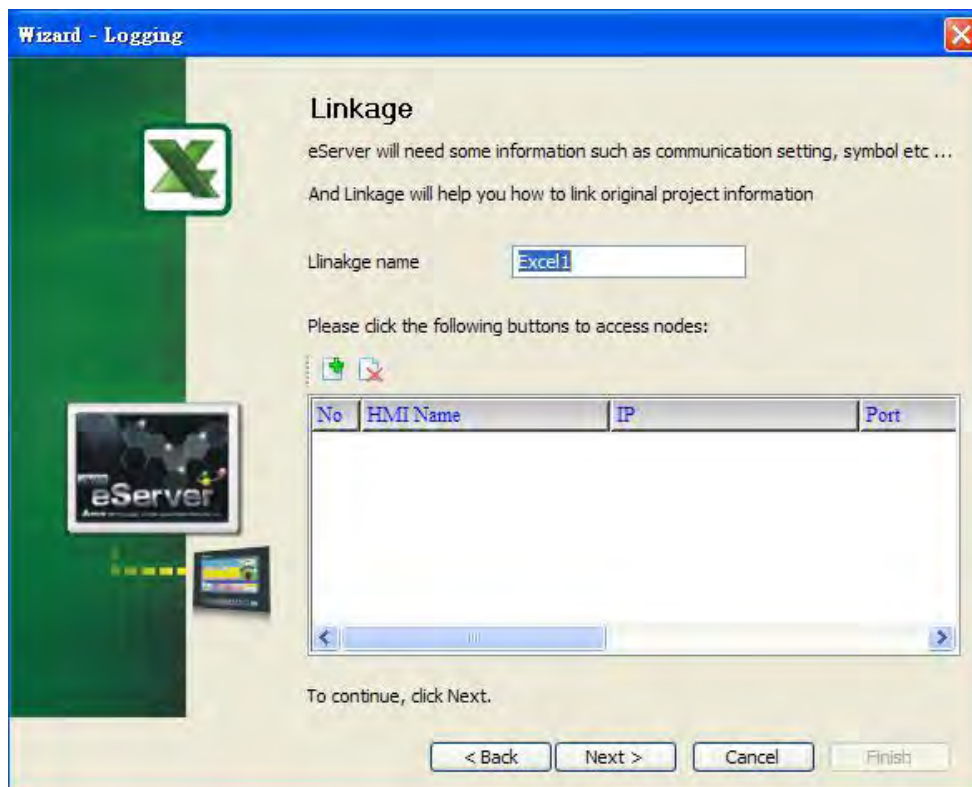
4.1.1 Linkage


Start eServer, and click **File > New** or click **New** icon After the **New** dialog box is opened, select **Logging (Excel)** icon and press **OK** button.

Then, the **Excel Logging Wizard** will be activated and the following dialog box will appear. Press **Next** button to continue.

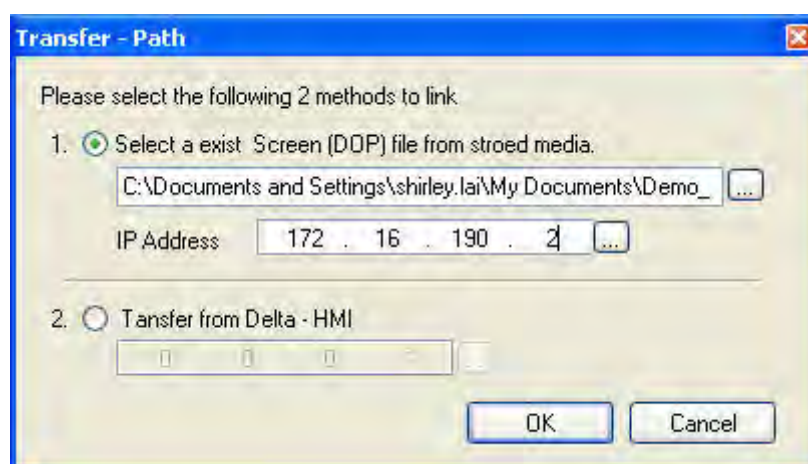


Click **New** icon to access nodes (link to HMI).

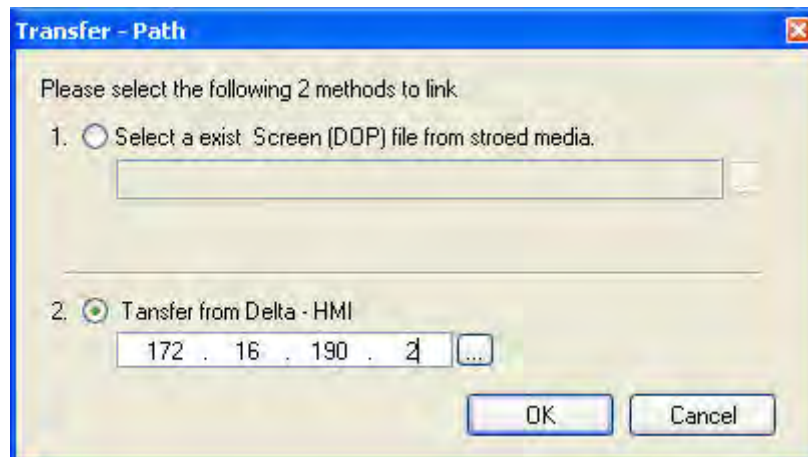


Click  icon to link HMI screen project file. There are two methods available for selection:

1. Select an existing Screen (DOP) file from stored media: Open an existing screen project file and set the IP address of the connecting HMI.



2. Transfer from Delta - HMI: Transfer the HMI screen project file via network communication directly.

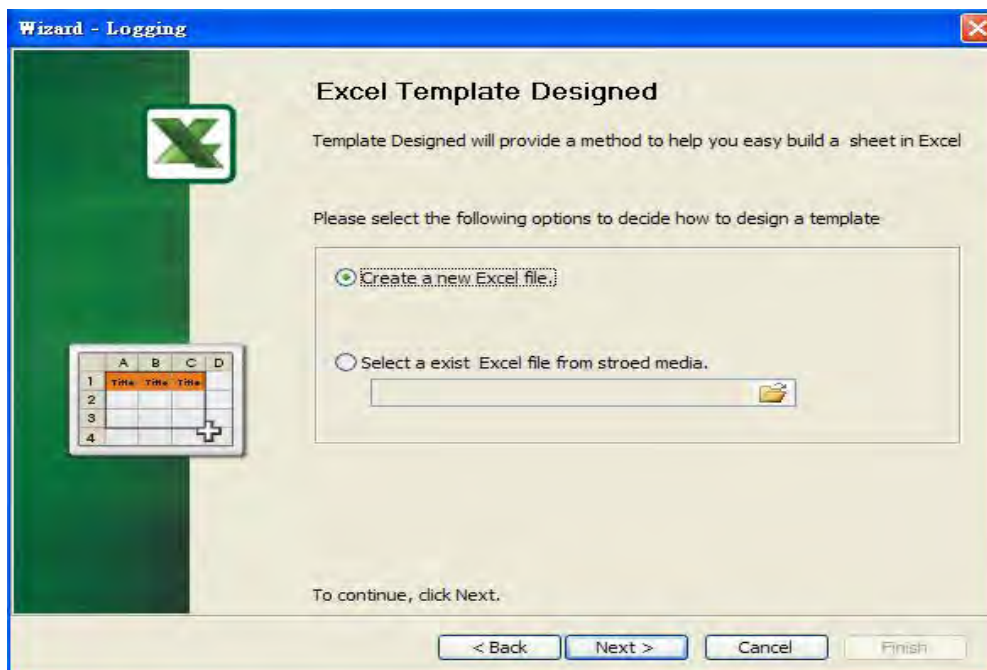


Press **OK** button to go to next step.

4.1.2 Excel Template Sheet Design

This step is used to create the desired Excel template sheet. There are two methods available for selection:

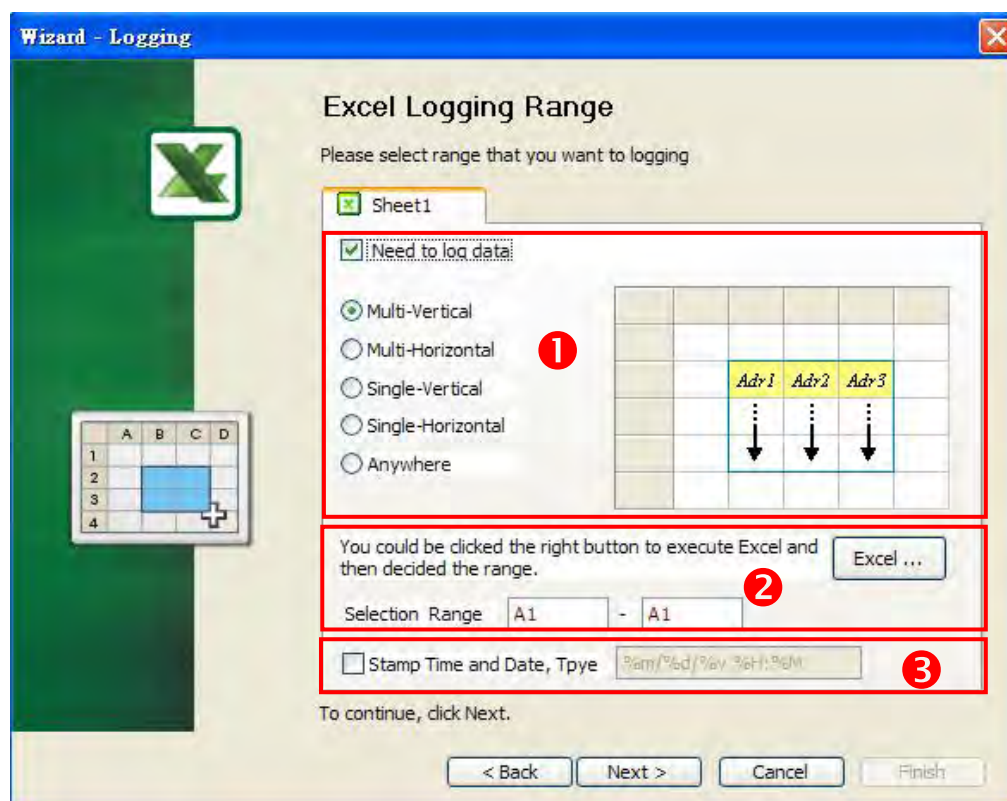
1. Create a new Excel file: When this option is selected, the system will activate Excel automatically and allow the users to design the desired Excel template sheet.
2. Select an existing Excel file from stored media: When this option is selected, the system will allow the users to open an existing Excel file.



Press **Next** button to go to next step.

4.1.3 Excel Logging Range Setting

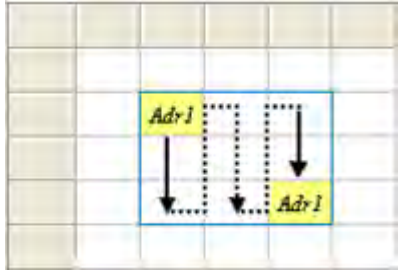
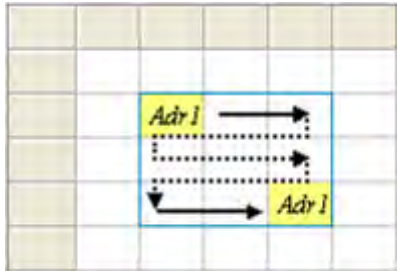
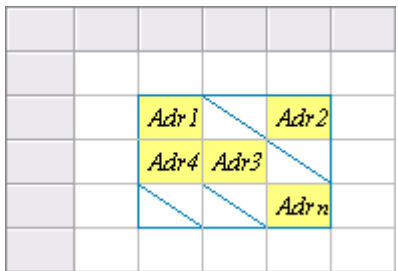
This step is used to specify the logging range to which the sampling data will be written. There are three parts in this dialog box.



1. Sampling Direction

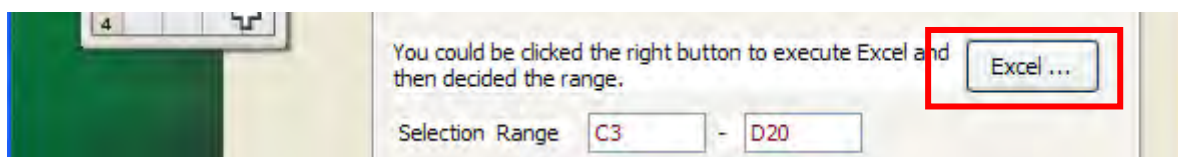
Check **Need to log data** box to determine the sampling direction and select the data range that you want to log. If **Need to log data** box is not checked, the sampling direction will be disabled and the data range cannot be selected. There are five different sampling directions could be selected. Please refer to the following table for explanation.

Sampling Direction	Diagram
Multi-Vertical: When this option is selected, multiple numbers of different register data could be logged into each vertical column in the selecting area simultaneously.	
Multi-Horizontal: When this option is selected, multiple numbers of different register data could be logged into each horizontal row in the selecting area simultaneously.	

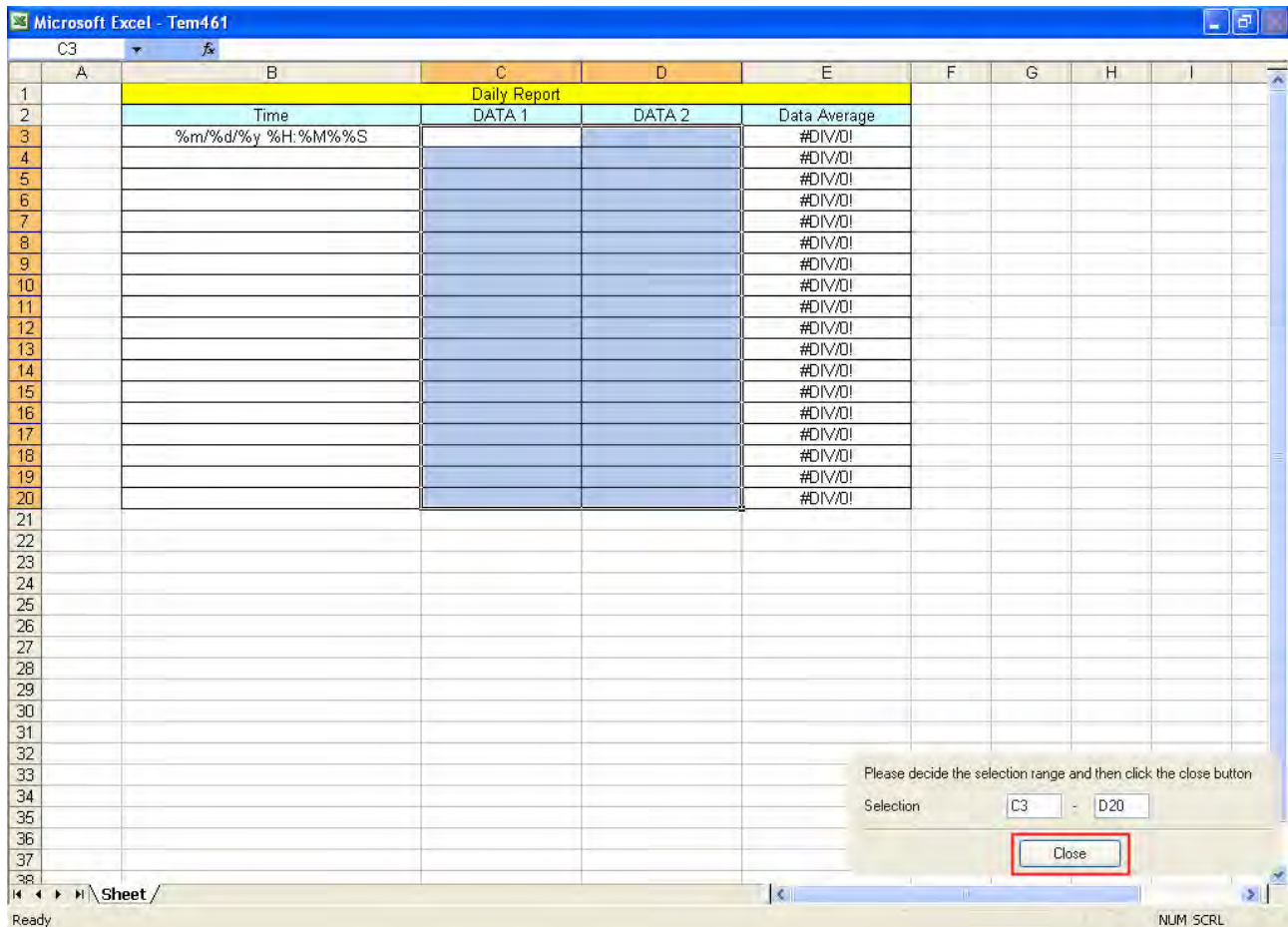
Sampling Direction	Diagram
<p>Single-Vertical:</p> <p>When this option is selected, only one number of register data could be logged into one cell for one time. The sampling operation is in vertical direction. The sampling operation of the second vertical column will not start unless the sampling operation of the first vertical column is done. Please refer to the right diagram.</p>	
<p>Single-Horizontal:</p> <p>When this option is selected, only one number of register data could be logged into one cell for one time. The sampling operation is in horizontal direction. The sampling operation of the second horizontal row will not start unless the sampling operation of the first horizontal row is done. Please refer to the right diagram.</p>	
<p>Anywhere:</p> <p>When this option is selected, the register data could be logged into any desired cell.</p>	

2. Selection Range

Press Excel button and the system will open the editing Excel template sheet immediately.



In Excel template sheet, use the mouse to decide the selection range. After the desired range is selected, press **Close** button to finish.



3. Stamp Time and Date

When this option is selected, the sampling time and date will be written as well automatically when the sampling data is recorded. The written position will be different depending on the setting sampling direction. Generally, the written position will be at the previous column or row before the selection range. However, if the following three conditions occur, the function of Stamp Time and Date will be disabled.

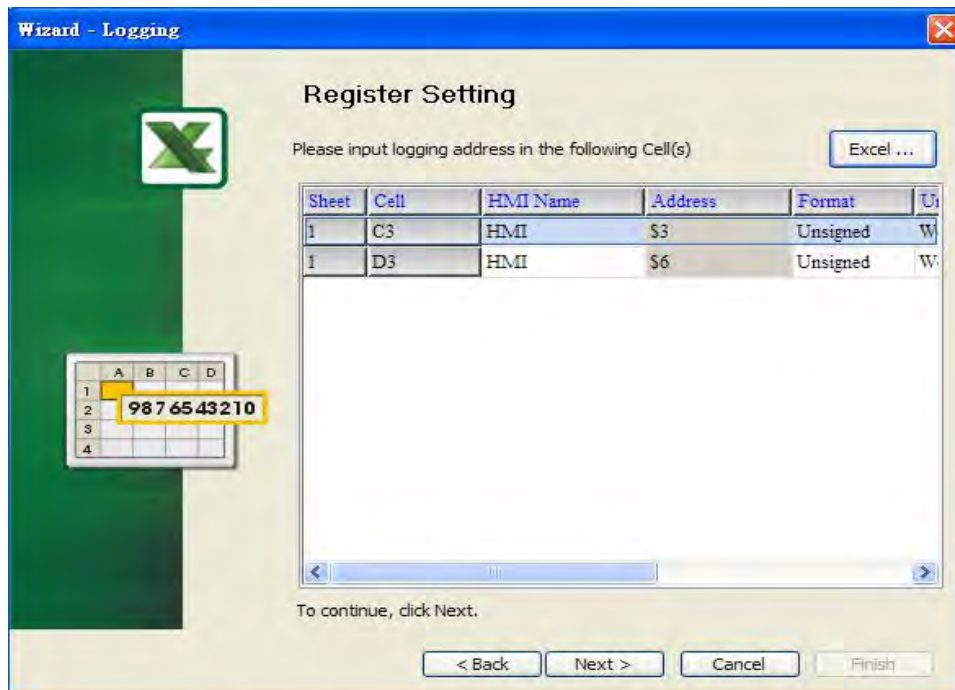
- When the sampling direction is vertical and the selection range includes column A (the first column).
- When the sampling direction is horizontal and the selection range includes row 1 (the first row).
- When the sampling direction is anywhere.

The format of the date and time is specified by a string of characters which can be user-defined and changed freely. Please refer to the table below for the string representation.

String Format	Representation
%m	Month
%d	Date
%y	Year
%H	Hour
%M	Minute
%S	Second

4.1.4 Register Setting

This step is used to set the register address of the sampling data.



Setting Item	Description	Remark
Sheet	Excel Sheet index which the sampling data will be written	Unchangeable
Cell	Excel Cell which the sampling data will be written	Unchangeable
HMI Name	Name of connecting HMI	
Address	Register Address	

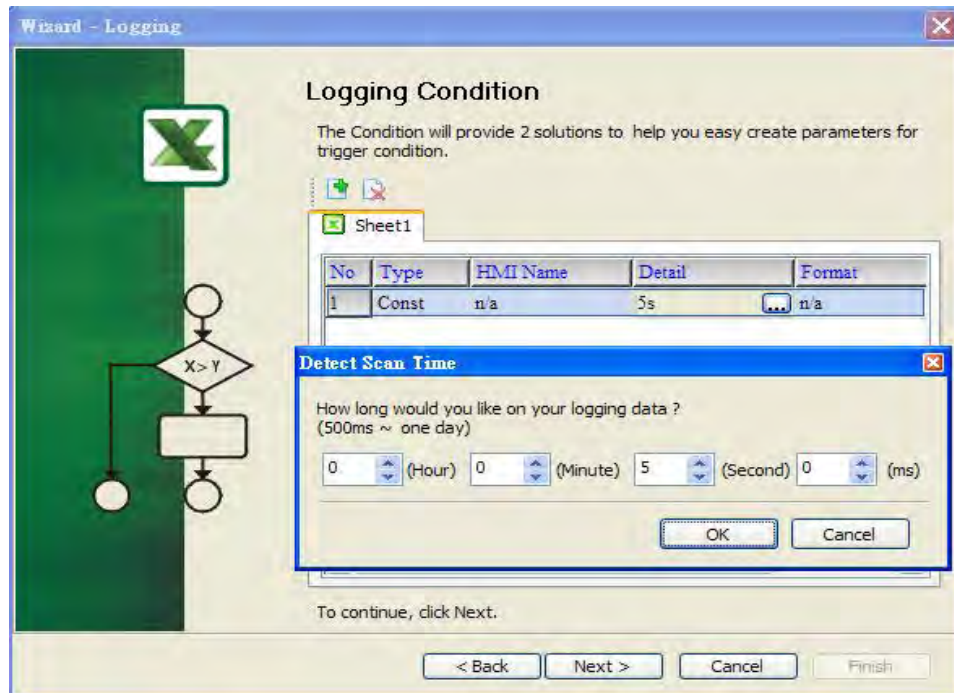
Setting Item	Description	Remark
Format	<ol style="list-style-type: none"> When the register address is set to Bit, this data format setting will be disabled. When the register address is set to Word, this data format setting will be enabled and the available settings include: BCD, Signed, Unsigned, Hex, Floating, Char (Character) 	
Unit	Unit of the data length of the register	Unchangeable
Read Count	<ol style="list-style-type: none"> When the register address is set to Bit, this setting will be 1(one) always. When the register address is set to Word, if the data format is set to BCD, Signed, Unsigned, Hex, and Floating, the setting value of this field could not exceed 2(two). When the register address is set to Word, if the data format is set to Char (Character), the setting value of this field could be user-defined and the max. setting value could be set to 100(hundred). 	
Integer	<ol style="list-style-type: none"> If the register address is set to Bit, this integer setting cannot be set. If the register address is set to Word, except Floating and Char(Character), when the other format is selected, this integer setting can be set. 	
Fraction	<ol style="list-style-type: none"> If the register address is set to Bit, this fraction setting cannot be set. If the register address is set to Word, except Floating and Char(Character), when the other format is selected, this fraction setting can be set. 	
Controller	Connecting controller	Unchangeable

4.1.5 Sampling Conditions

This step is used to set the sampling conditions. There are two kinds of options for selection:

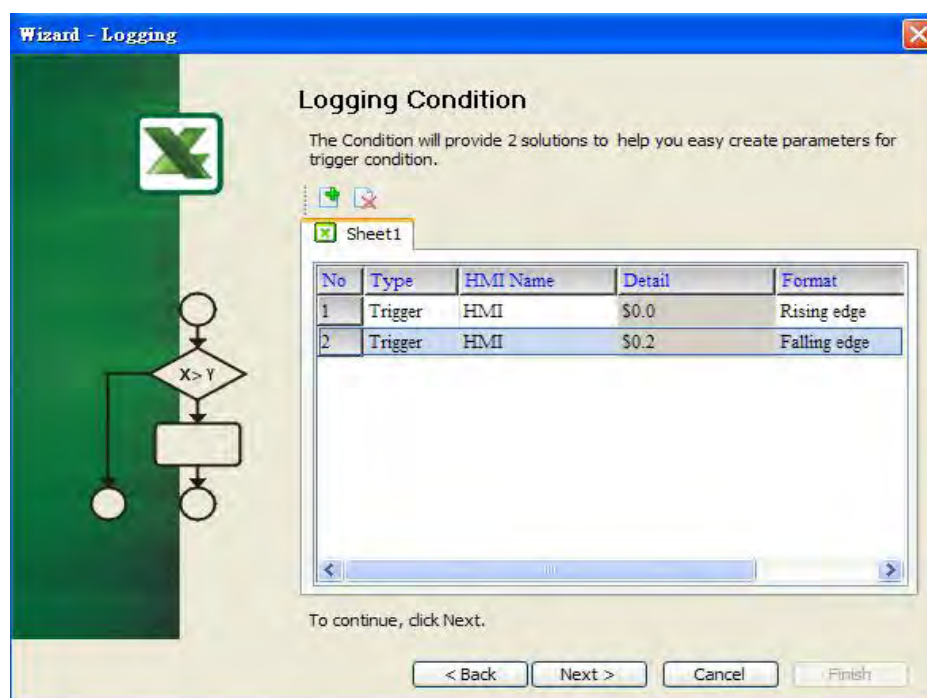
1. Const (execute sampling repeatedly in a certain span of time)

This option is used to determine how long the sampling process is repeated. The time unit can be defined as ms, second, minute or hour.



2. Trigger (Execute sampling when the trigger conditions are satisfied)

This option is used to determine how long the sampling process is repeated when the trigger conditions are met. The detailed settings are described as follows:



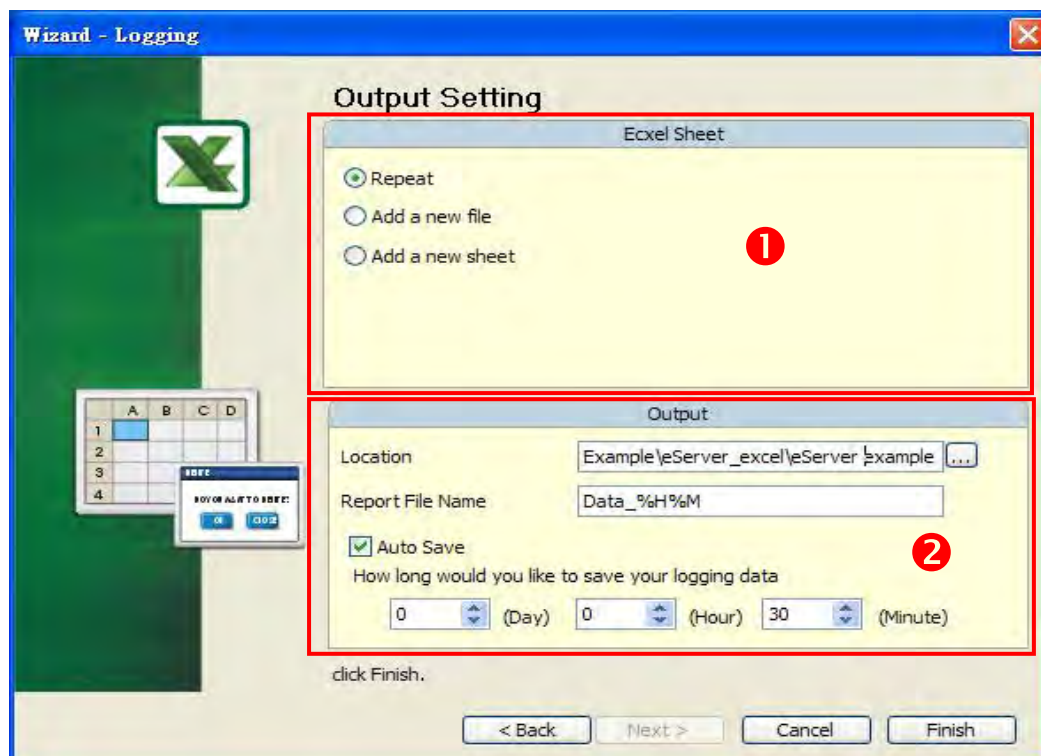
Polling Cycle (Sampling Cycle): It is used to determine how long the sampling process is repeated. The time unit is ms.

Logging Condition:

Setting Item	Description	Remark
No.	Condition number	Unchangeable
Type	Sampling type. There are two kinds of options for selection: Const and Trigger. Const: Execute sampling repeatedly in a certain span of time. Trigger: Execute sampling when the trigger conditions are satisfied.	
HMI Name	Name of connecting HMI	
Detail	Register Address	
Format	1. When the register address is set to Bit, the selectable options are: A. Rising edge: Triggered by rising-edge B. Falling edge Triggered by falling-edge	
Controller	Connecting controller	Unchangeable

4.1.6 Output Setting

This step is used to set how to output and save the sampling data.



There are two parts in this dialog box:

1. Excel Sheet
 - A. Repeat

When the sampling data has been filled in the selection range to the full, the system will write the data into the selection range from the first column or row repeatedly.

Microsoft Excel - Tem2E1				
G10				
A	B	C	D	E
1	Daily Report			
2	Time	DATA 1	DATA 2	Data Average
3	08/24/2009 17:18:16	35	35	35
4	08/24/2009 17:18:17	45	46	45.5
5	08/24/2009 17:18:18	54	54	54
6	08/24/2009 17:18:19	64	64	64
7	08/24/2009 17:18:20	74	74	74
8	08/24/2009 17:18:21	84	84	84
9	08/24/2009 17:18:22	93	93	93
10	08/24/2009 17:18:23	65439	3	32721
11	08/24/2009 17:18:24	65449	13	32731
12	08/24/2009 17:18:25	65459	23	32741
13	08/24/2009 17:18:26	65468	32	32750
14	08/24/2009 17:18:27	65478	42	32760
15	08/24/2009 17:18:28	65488	52	32770
16	08/24/2009 17:18:29	65498	62	32780
17	08/24/2009 17:18:30	65508	72	32790
18	08/24/2009 17:18:31	65517	81	32799
19	08/24/2009 17:18:32	65527	91	32809
20	08/24/2009 17:18:33	1	1	1
21				
22				
23				

B. Add a new file

When the sampling data has been filled in the selection range to the full, the system will open a new Excel file automatically and write the data into the new Excel file.

C. Add a new sheet

When the sampling data has been filled in the selection range to the full, the system will open a new Excel sheet automatically and write the data into the new Excel sheet.

Excel Sheet

☒ Repeat

☐ Add a new file

☐ Add a new sheet

2. Output Setting

Output

Location: Example\eServer_excel\eServer Example ...

Report File Name: Data_ %H%M

☒ Auto Save

How long would you like to save your logging data

0 (Day) 0 (Hour) 30 (Minute)

- A. Location: Choose file destination location.
- B. Report File Name: Specify the name of the report file. The users can add the date and time in the end of the file name. The format of the date and time is specified by a string of characters which can be user-defined and changed freely. Please refer to the table below for the string representation.

String Format	Representation
%m	Month
%d	Date
%y	Year
%H	Hour
%M	Minute
%S	Second

- C. Auto Save: When this option is enabled, the system will back up the data in a period of specified time automatically in case the data will be lost due to abnormal operation when the power source is cut off unexpectedly or other accident occurs.

Chapter 5 Writing Data in Microsoft Excel

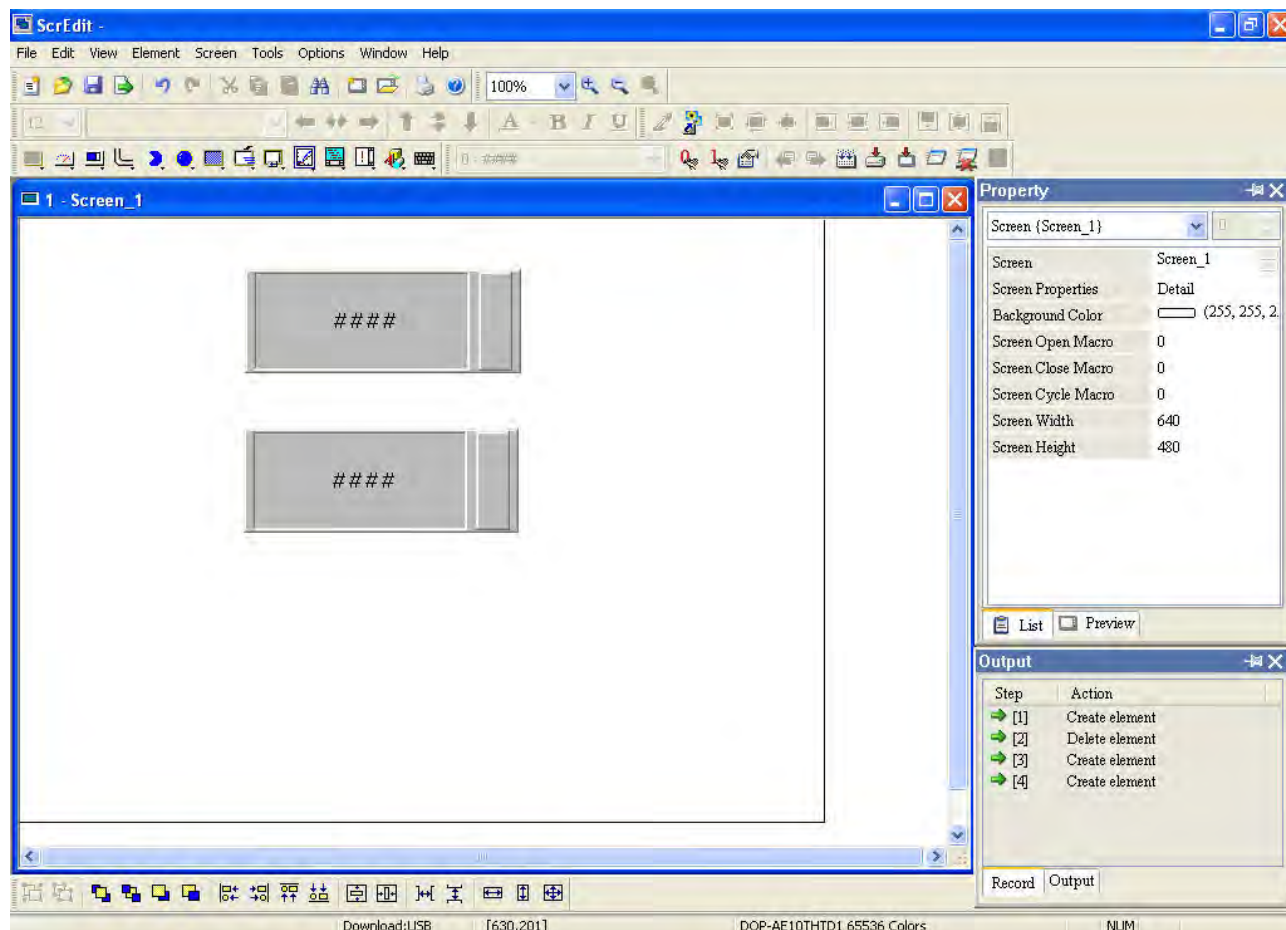
Before creating testing example, make sure to change the upload and download option (**Options > Configuration**) on Screen Editor first. The default setting of upload and download is via **USB**. If the users need to use **Ethernet**, please change the default setting by referring to **Appendix A**.

5.1 Example

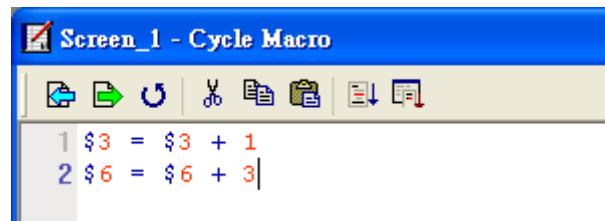
This example is used to help the users to understand how to use eServer to read the data of the register addresses \$3 and \$6 every second, record the data in Excel report file; meanwhile, calculate the average value of the register addresses \$3 and \$6 by using Excel formula and save the collected data in the specified folder (C:\Data).

5.1.1 Create HMI Project File

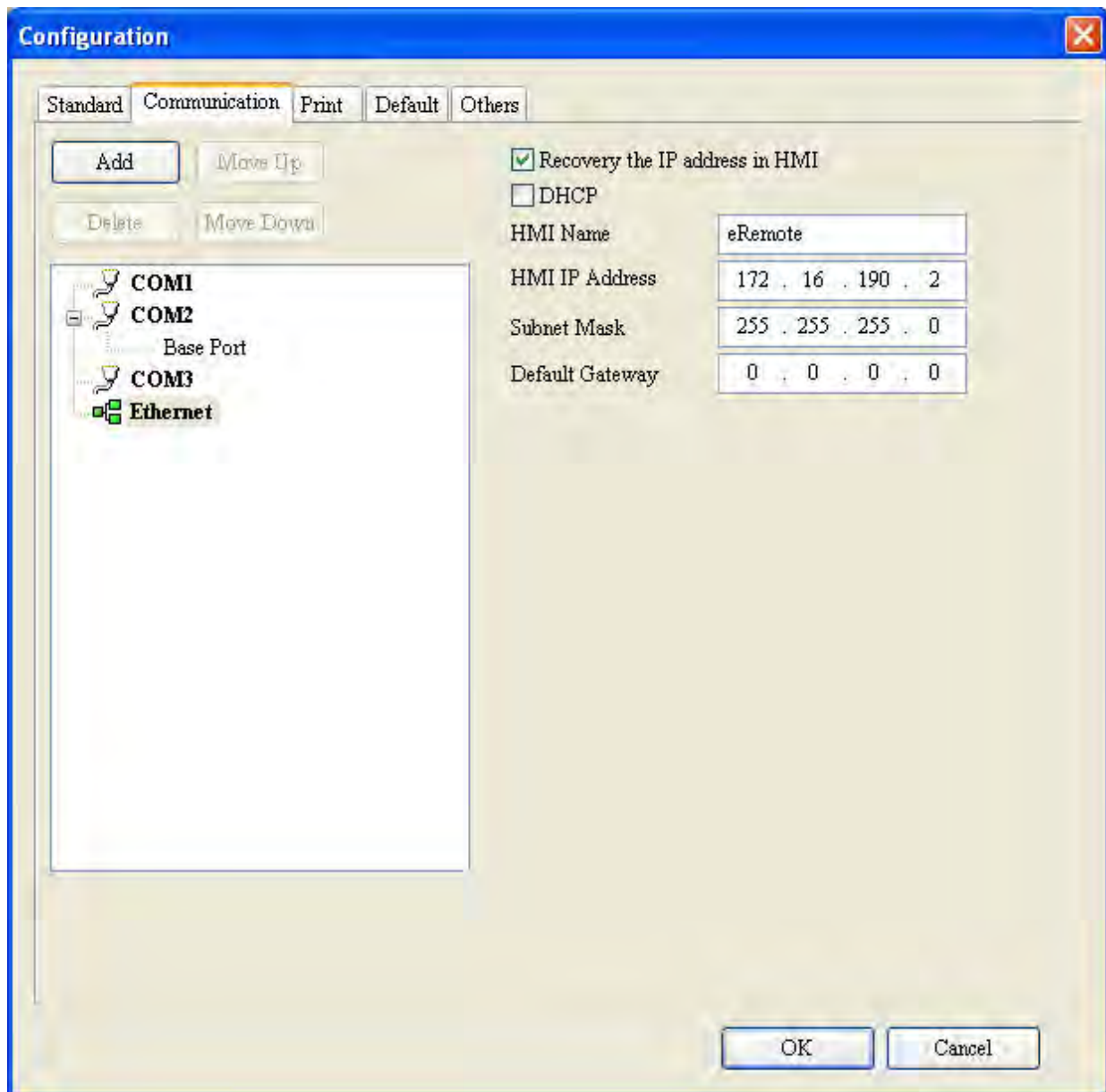
Start Screen Editor software program and click **File > New** or click **New** icon to create a new project. Then, click **Element > Input > Numeric Entry** to create two numeric entry elements (\$3 and \$6) on the screen. In this case, 10 inches color AE type DOP series HMI is used.



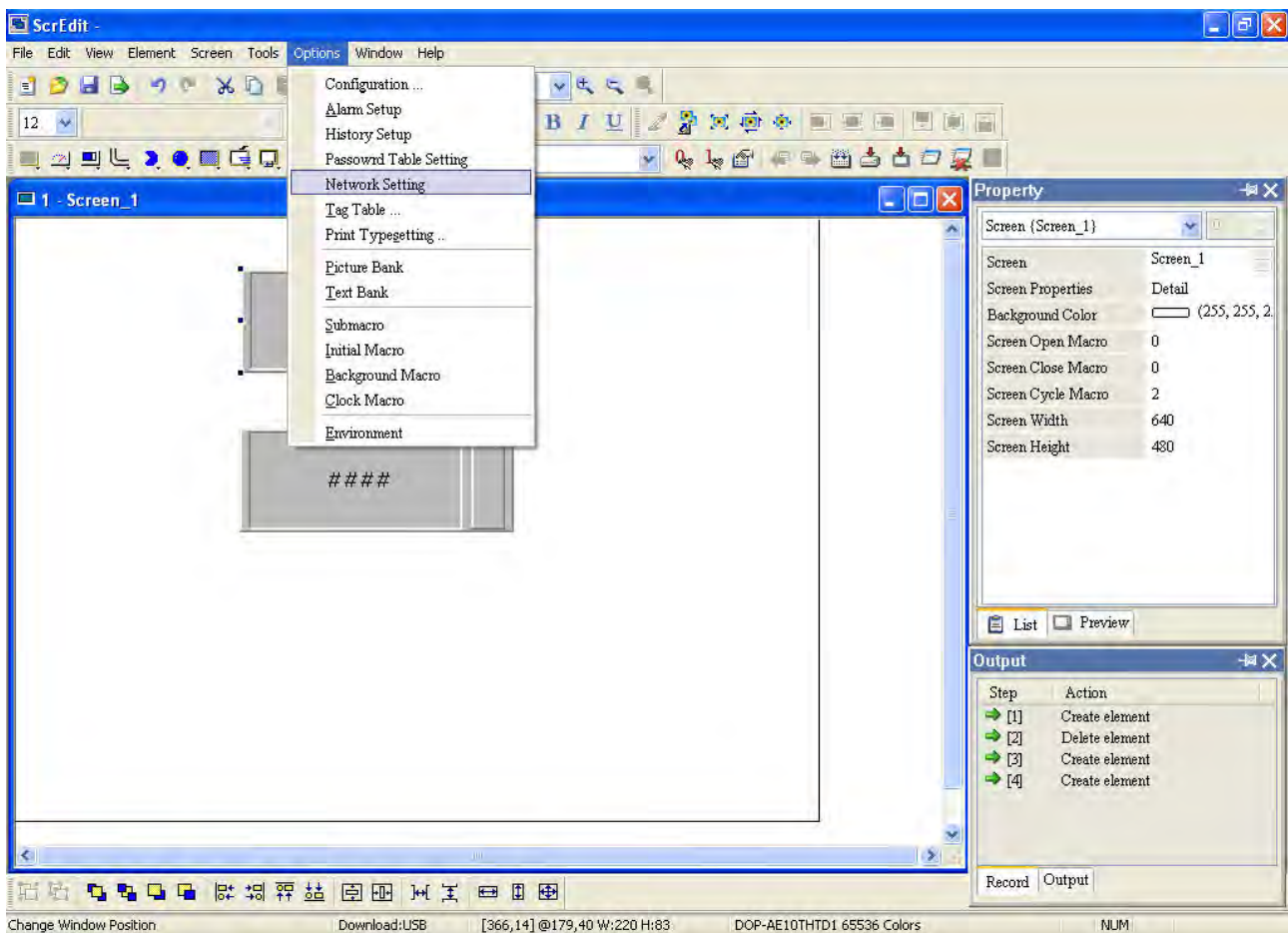
Use Screen Cycle Macro and enter the following commands in macro command window.



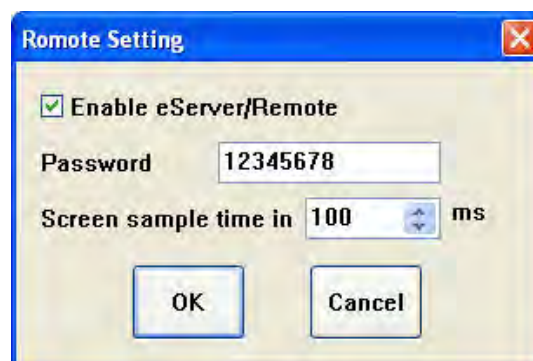
Click **Options > Configuration** and use **Communication** tab to select **Ethernet** and complete HMI networking settings shown as the figure below. Then, press **OK** button to finish the settings.




Next, click **Options > Network Setting**.



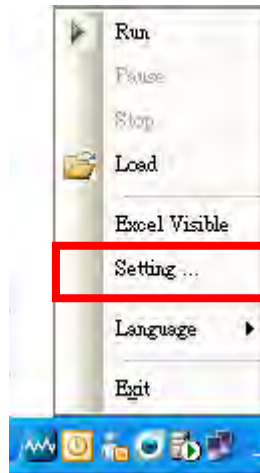
The following **Remote Setting** dialog box will appear. Check the check box before **Enable eServer/Remote** and set a password for network communication. After **OK** button is pressed, HMI networking is completed. Compile the edited project file at the end of the programming and the edited project file could be transferred to HMI.



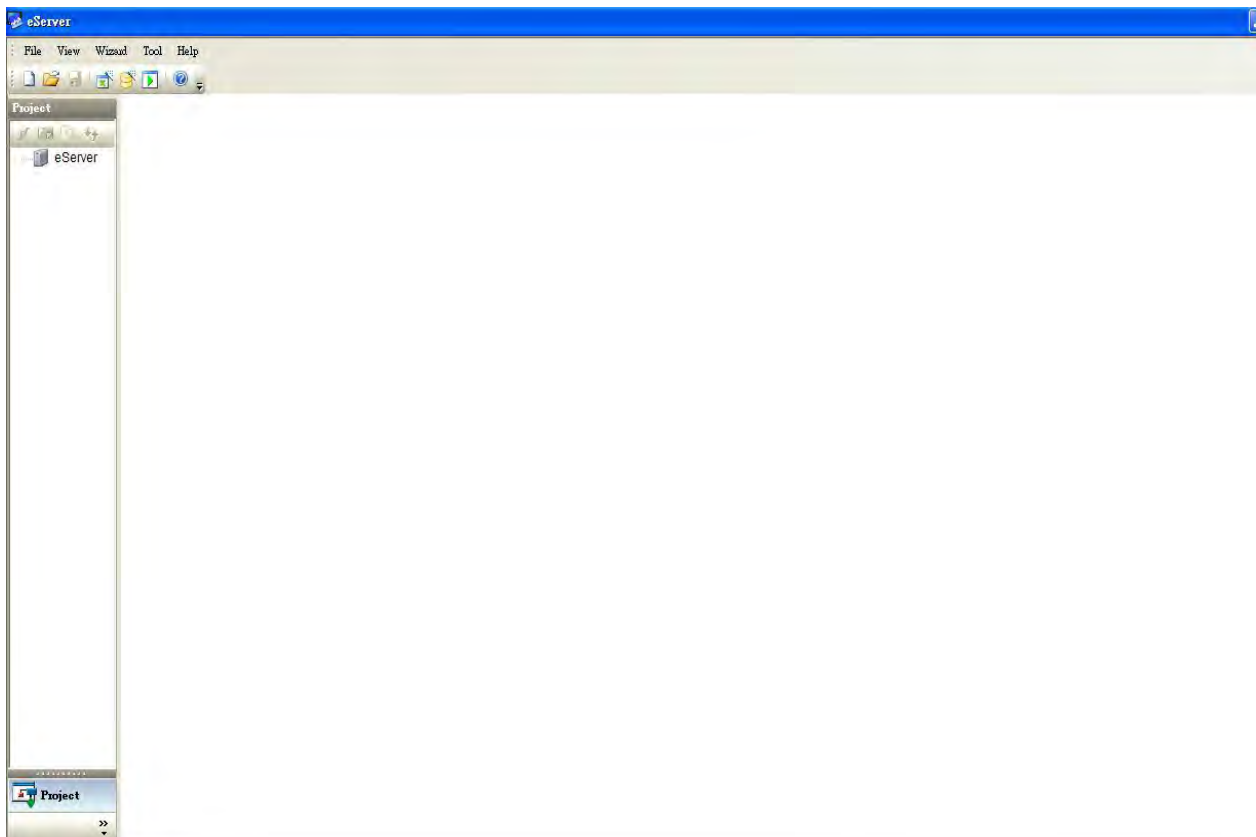
5.1.2 eServer Setting

1. After eServer is enabled, eServer  icon will appear at the bottom right of Windows screen.

Right-click this  icon and select **Setting** option from the pop-up menu.



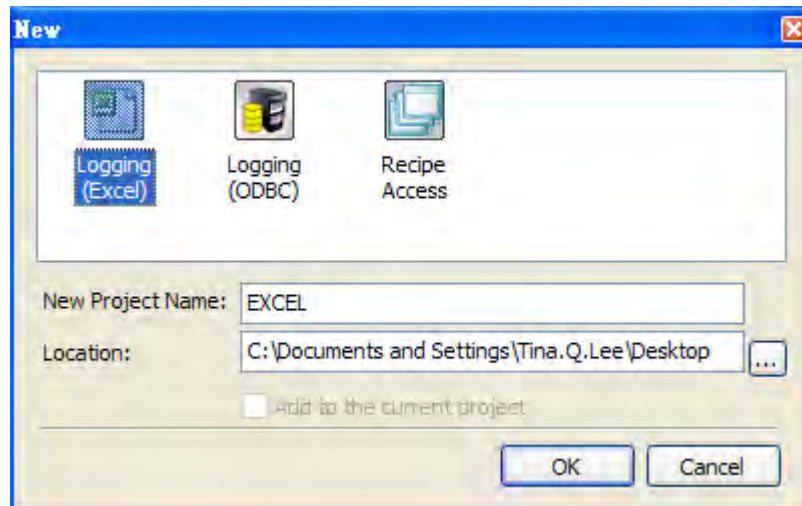
2. Then, eServer window will open.



3. Click **File** > **New** or click  icon to create a new project file.



4. Select  icon to enable Excel Logging (Sampling) Wizard.

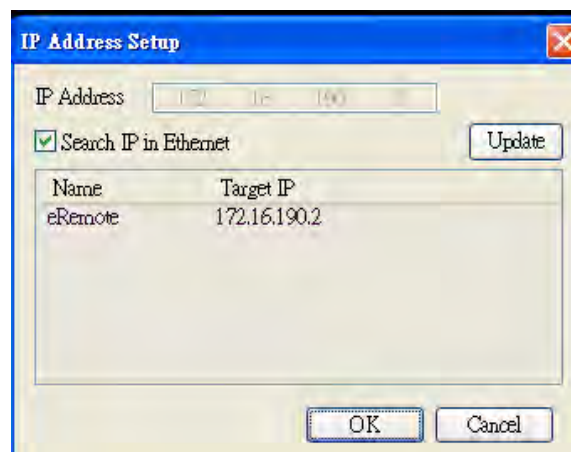
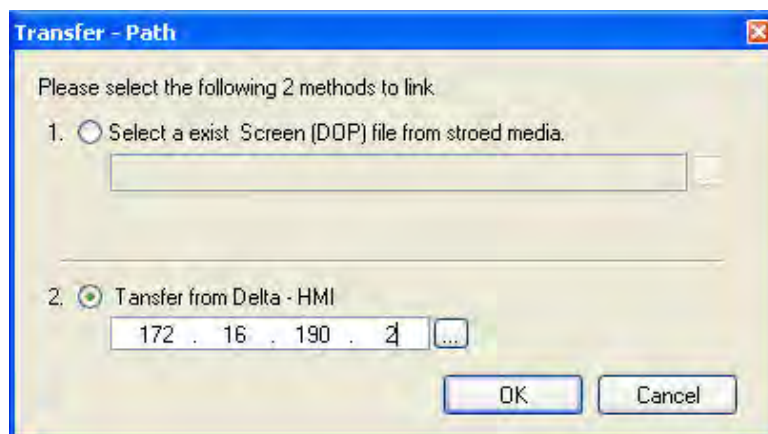


Press **Next** button to go to next step.

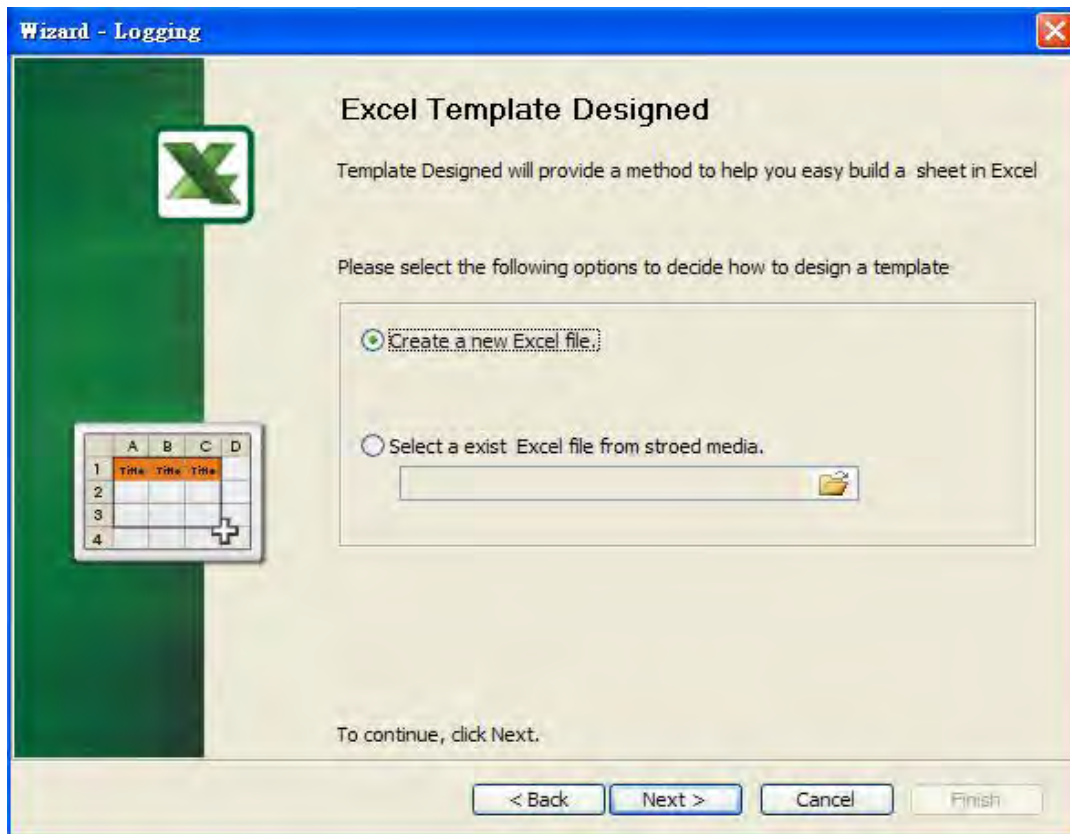
5. Click **New** icon to access nodes (link to HMI).



Choose **Transfer from Delta - HMI** option to transfer the HMI screen project file via network communication directly. Press **OK** button to go to next step.

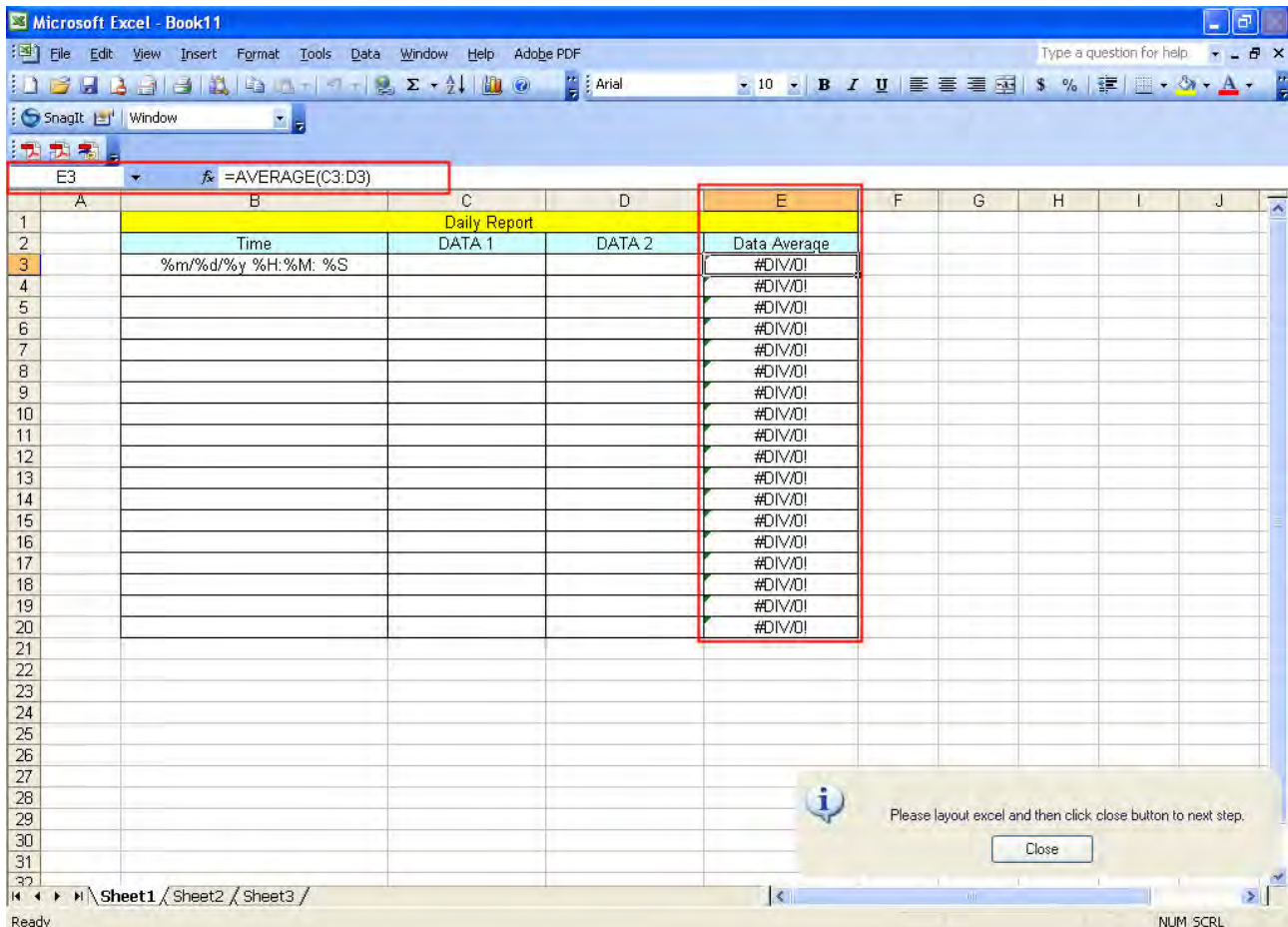


6. Design Excel template sheet. Select **Create a new Excel file** option and press **Next** button to go to next step.



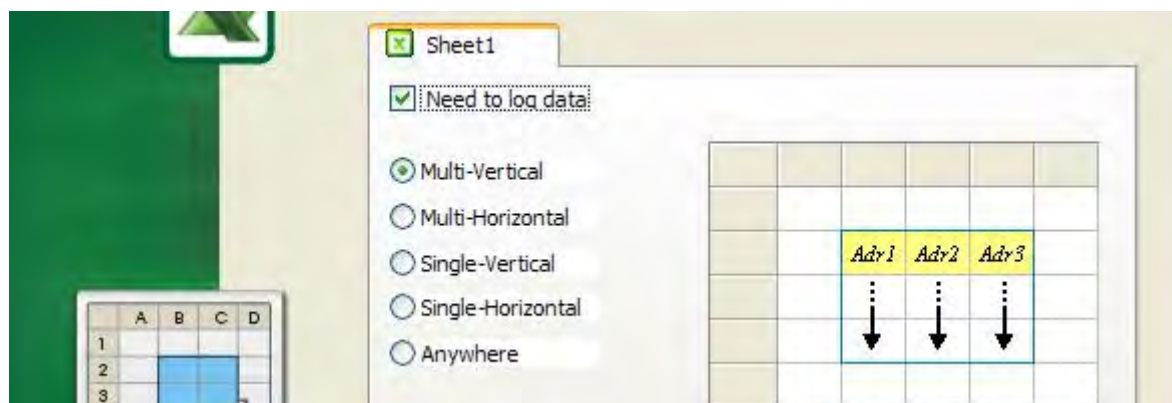
The system will enable Excel automatically. Create a Excel template sheet as the figure below and enter the following formulas into the cells of E3 ~ E22 in order. Then, press Close button in the dialog box which appears at the bottom right of Windows screen to go to next step.

Column	Formula	Column	Formula
E3	=AVERAGE(C3:D3)	E12	=AVERAGE(C12:D12)
E4	=AVERAGE(C4:D4)	E13	=AVERAGE(C13:D13)
E5	=AVERAGE(C5:D5)	E14	=AVERAGE(C14:D14)
E6	=AVERAGE(C6:D6)	E15	=AVERAGE(C15:D15)
E7	=AVERAGE(C7:D7)	E16	=AVERAGE(C16:D16)
E8	=AVERAGE(C8:D8)	E17	=AVERAGE(C17:D17)
E9	=AVERAGE(C9:D9)	E18	=AVERAGE(C18:D18)
E10	=AVERAGE(C10:D10)	E19	=AVERAGE(C19:D19)
E11	=AVERAGE(C11:D11)	E20	=AVERAGE(C20:D20)

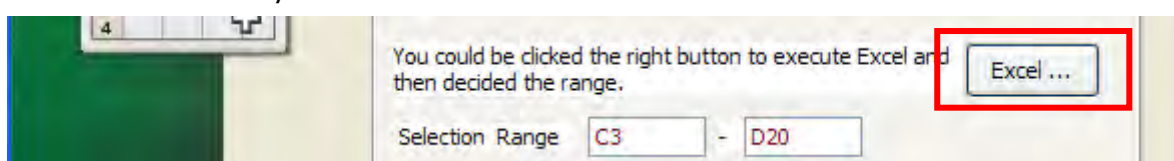


7. Excel Logging Range Setting

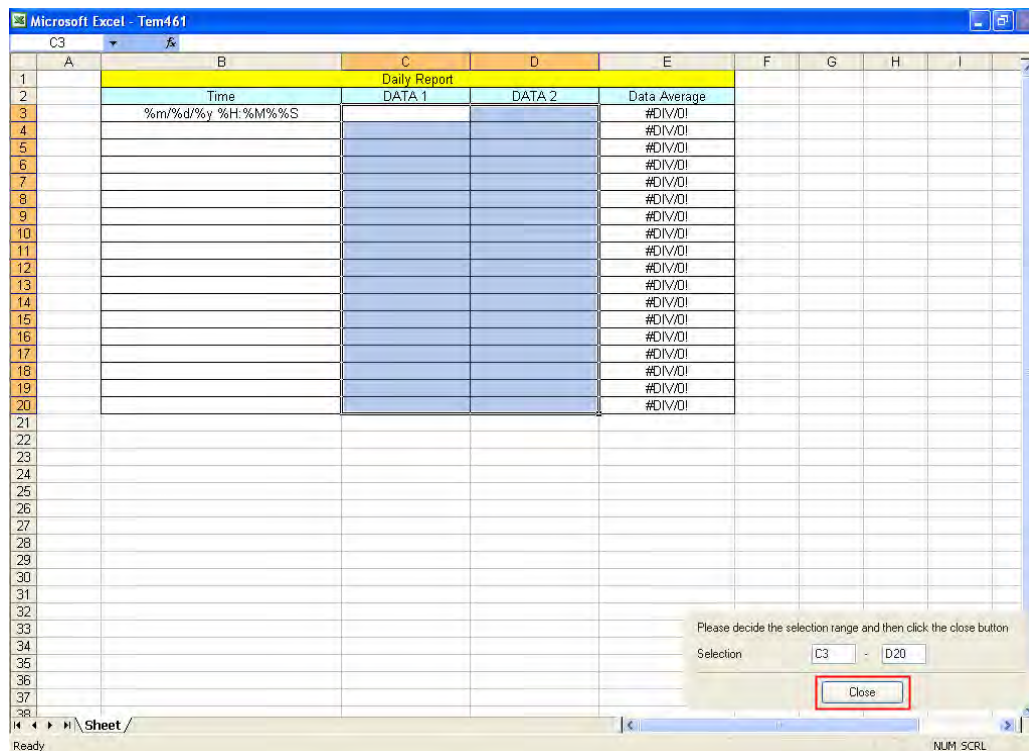
7.1 Set the sampling direction as **Multi-Vertical**.



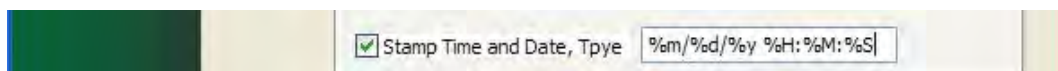
7.2 Press **Excel** button and the system will open the editing Excel template sheet immediately.



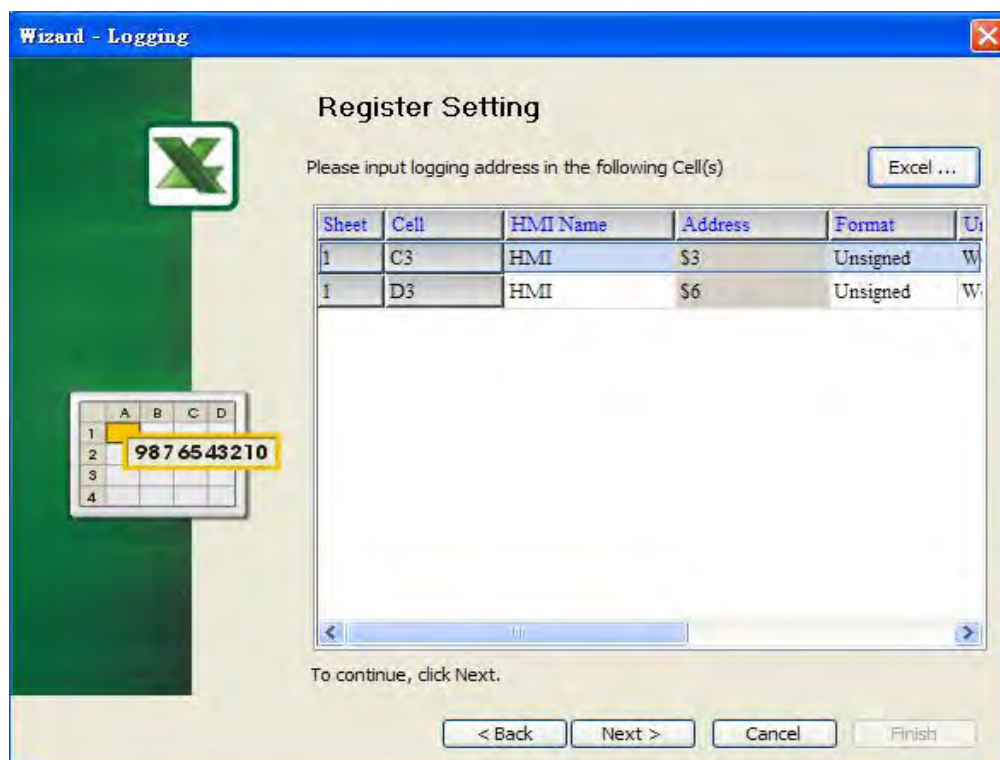
7.3 In Excel template sheet, the users can drag the mouse to select the selection range. In this case, C3 ~ D20 is selected. Then, press **Close** button to finish.



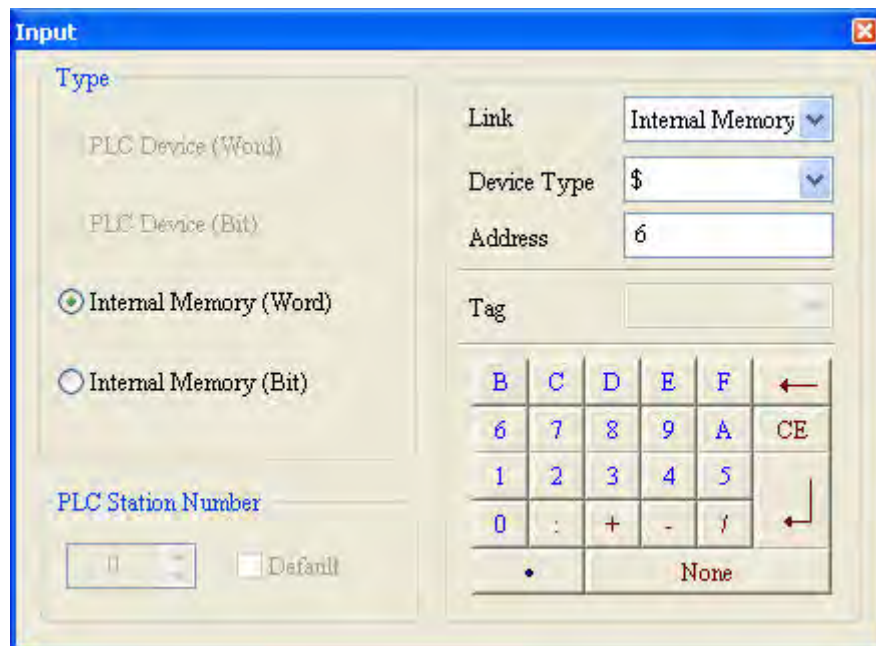
7.4 Check the check box before **Enable Stamp Time and Date** function and change the format to **%m/%d/%y %H:%M:%S**. Once the sampling operation is enabled, the sampling date and time will be recorded into the cells of B3 ~B20.



8. Set the register addresses.



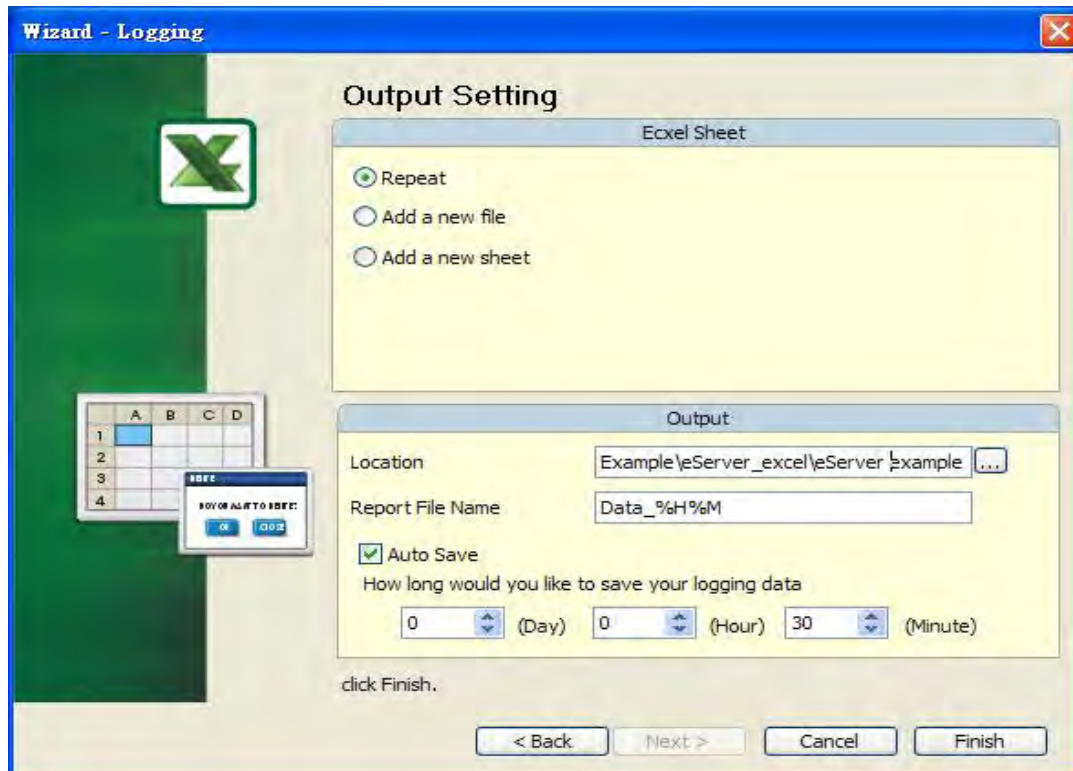
Use the following dialog box to set the sampling register addresses.




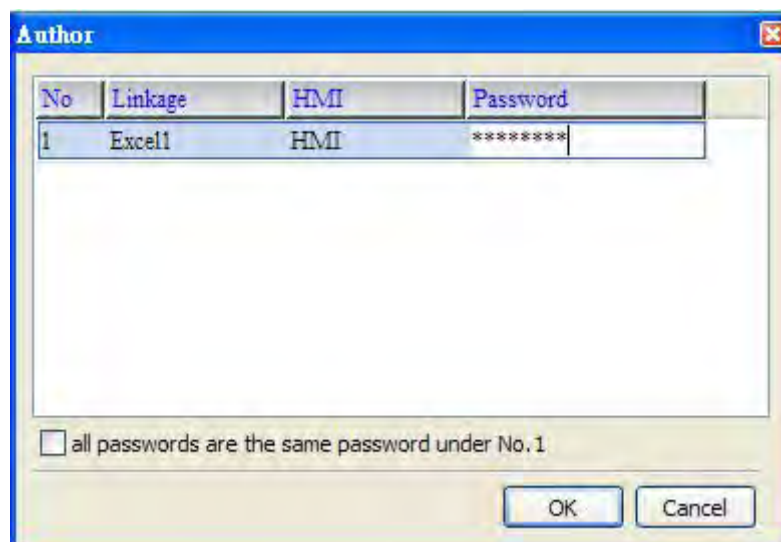
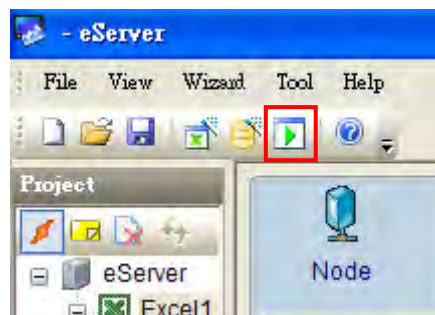
9. Set Logging Condition (Sampling Time) to 5s.

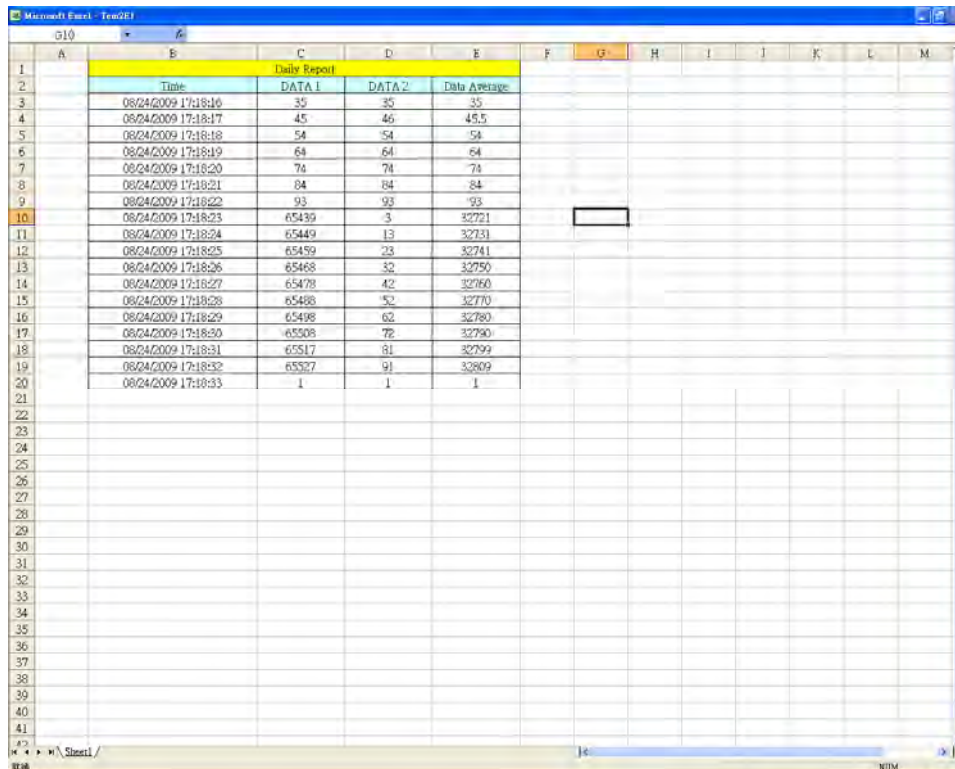


10. Choose **Add a new file** in Excel Sheet and define the file location and file name shown as the figure below. After enabling the function of **Auto Save**, press **Finish** button to complete the settings.




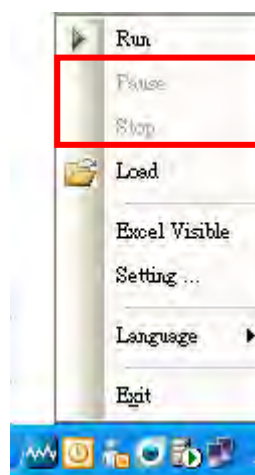
11. Press  icon and enter the password. Then, the system will start sampling operation, i.e. writing data in Excel file.





Daily Report			
Time	DATA 1	DATA 2	Data Average
08/24/2009 17:18:16	35	35	35
08/24/2009 17:18:17	45	46	45.5
08/24/2009 17:18:18	54	54	54
08/24/2009 17:18:19	64	64	64
08/24/2009 17:18:20	74	74	74
08/24/2009 17:18:21	84	84	84
08/24/2009 17:18:22	93	93	93
08/24/2009 17:18:23	65439	3	32721
08/24/2009 17:18:24	65449	13	32731
08/24/2009 17:18:25	65459	23	32741
08/24/2009 17:18:26	65468	32	32750
08/24/2009 17:18:27	65478	42	32760
08/24/2009 17:18:28	65488	52	32770
08/24/2009 17:18:29	65498	62	32780
08/24/2009 17:18:30	65508	72	32790
08/24/2009 17:18:31	65517	81	32799
08/24/2009 17:18:32	65527	91	32809
08/24/2009 17:18:33	1	1	1

12. If the users want to pause or stop the sampling operation, only right-click eServer  icon at the bottom right of Windows screen and select **Pause** or **Stop** option from the pop-up menu, the sampling operation will pause and stop immediately. The users also can use **Excel Visible** option to decide whether the Excel window displays on the screen or not.



Chapter 6 ODBC Sampling Setting

6.1 Detailed Settings

Please refer to the following steps to complete ODBC sampling setting, i.e. how to log data from HMI to a database.

6.1.1 Linkage

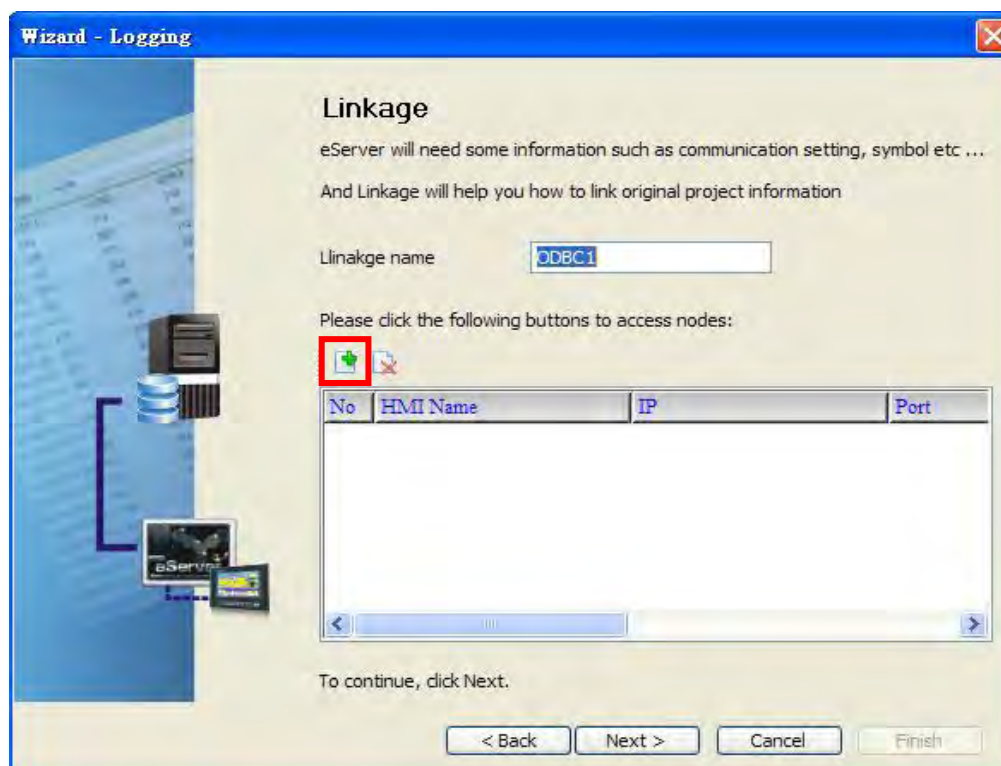
Start eServer, and click **File > New** or click **New** icon After the **New** dialog box is opened, select **Logging (ODBC)** icon and press **OK** button.


Then, the **ODBC Logging Wizard** will be activated and the following dialog box will appear.

Press **Next** button to continue.

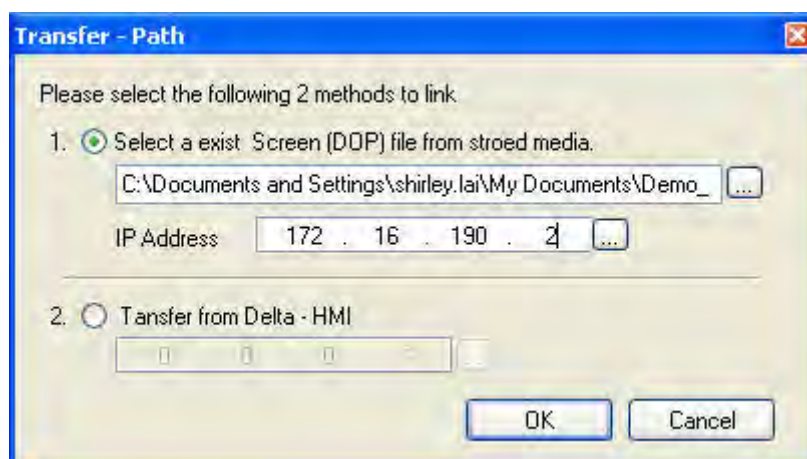


Click **New** icon to access nodes (link to HMI).

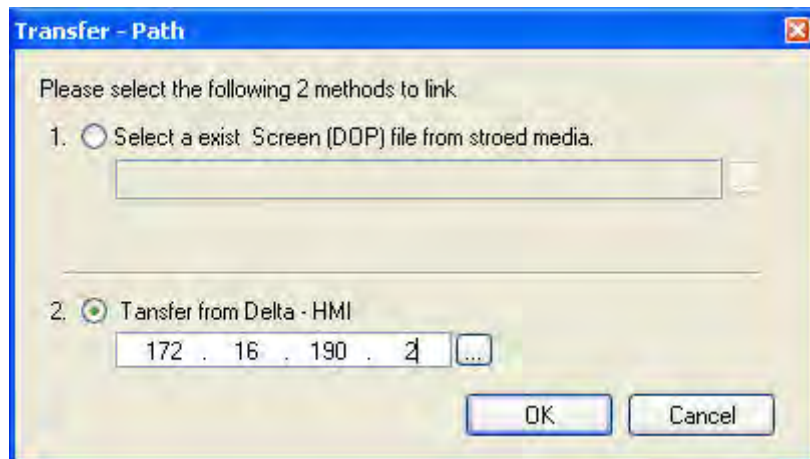


Click  icon to link HMI screen project file. There are two methods available for selection:

1. Select an existing Screen (DOP) file from stored media: Open an existing screen project file and set the IP address of the connecting HMI.



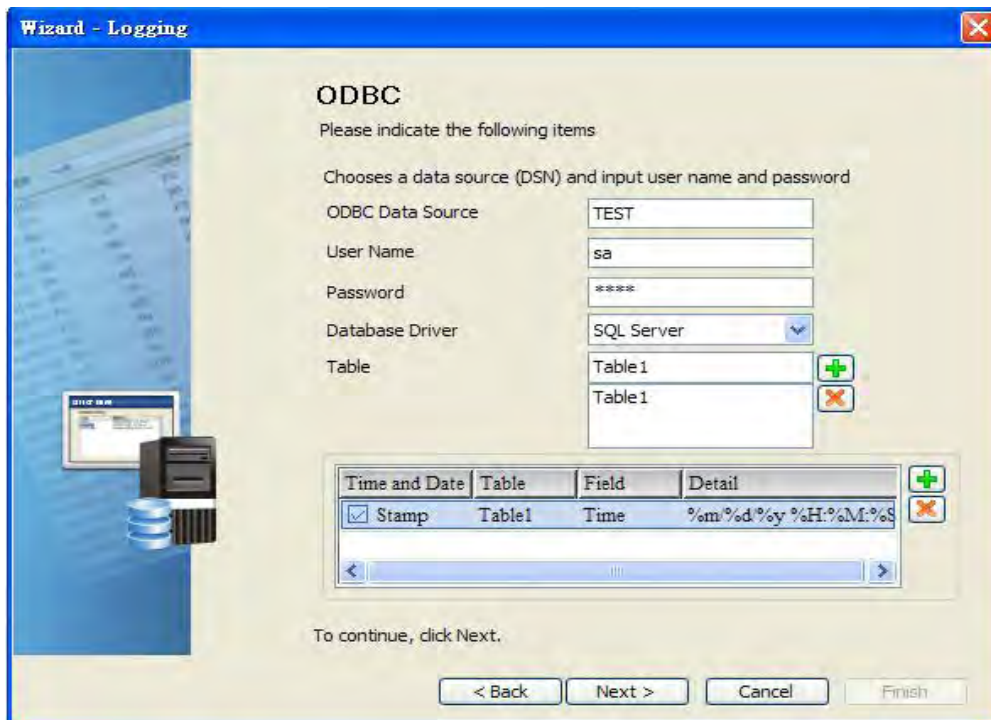
2. Transfer from Delta - HMI: Transfer the HMI screen project file via network communication directly.



Press **OK** button to go to next step.

6.1.2 ODBC (Open Data Base Connectivity)

This step is used to create an ODBC Data Source pointing to your database.



Item	Explanation
ODBC Data Source	Name of ODBC Data Source
User Name	Login Username
Password	Login Password
Table	Name of Sampling Data Table

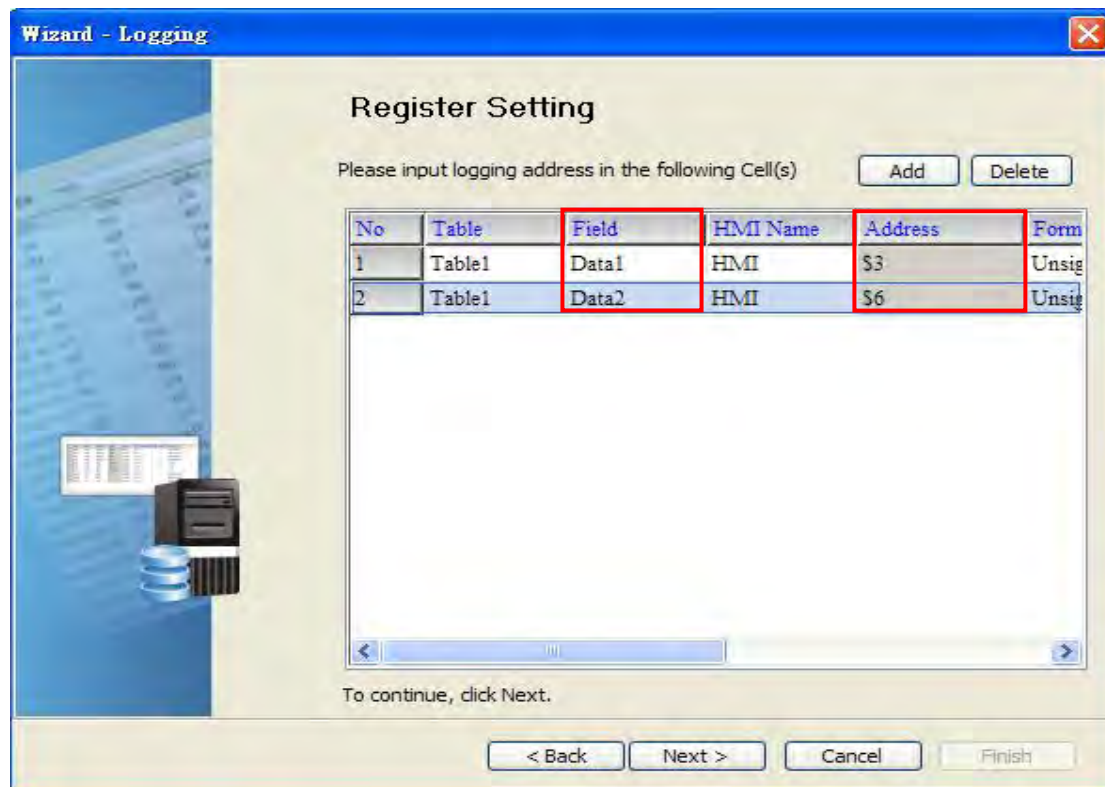
Time and Data Stamp Function:

Time and Date	Table	Field	Detail
<input checked="" type="checkbox"/> Stamp	Table1	Time	%m/%d/%y %H:%M:%S
		Time Data1 Data2	

Item	Explanation														
Time and Date	Choose if Time and Date Stamp function is enabled.														
Table	Table which the time and date will be written.														
Field	Field which the time and date will be written.														
Detail	<p>The format of the date and time is specified by a string of characters which can be user-defined and changed freely. Please refer to the table below for the string representation.</p> <table> <tr> <th>String Format</th><th>Representation</th></tr> <tr> <td>%m</td><td>Month</td></tr> <tr> <td>%d</td><td>Date</td></tr> <tr> <td>%y</td><td>Year</td></tr> <tr> <td>%H</td><td>Hour</td></tr> <tr> <td>%M</td><td>Minute</td></tr> <tr> <td>%S</td><td>Second</td></tr> </table>	String Format	Representation	%m	Month	%d	Date	%y	Year	%H	Hour	%M	Minute	%S	Second
String Format	Representation														
%m	Month														
%d	Date														
%y	Year														
%H	Hour														
%M	Minute														
%S	Second														

6.1.3 Register Setting

This step is used to set the register address of the sampling data.



Setting Item	Description	Remark
Table	Table which the sampling data will be written	
Field	Field which the sampling data will be written	
HMI Name	Name of connecting HMI	
Address	Register Address	
Format	<ol style="list-style-type: none"> When the register address is set to Bit, this data format setting will be disabled. When the register address is set to Word, this data format setting will be enabled and the available settings include: BCD, Signed, Unsigned, Hex, Floating, Char (Character) 	
Unit	Unit of the data length of the register	Unchangeable
Read Count	<ol style="list-style-type: none"> When the register address is set to Bit, this setting will be 1(one) always. When the register address is set to Word, if the data format is set to BCD, Signed, Unsigned, Hex, and Floating, the setting value of this field could not exceed 2(two). When the register address is set to Word, if the data format is set to Char (Character), the setting value of this field could be user-defined and the max. setting value could be set to 100(hundred). 	

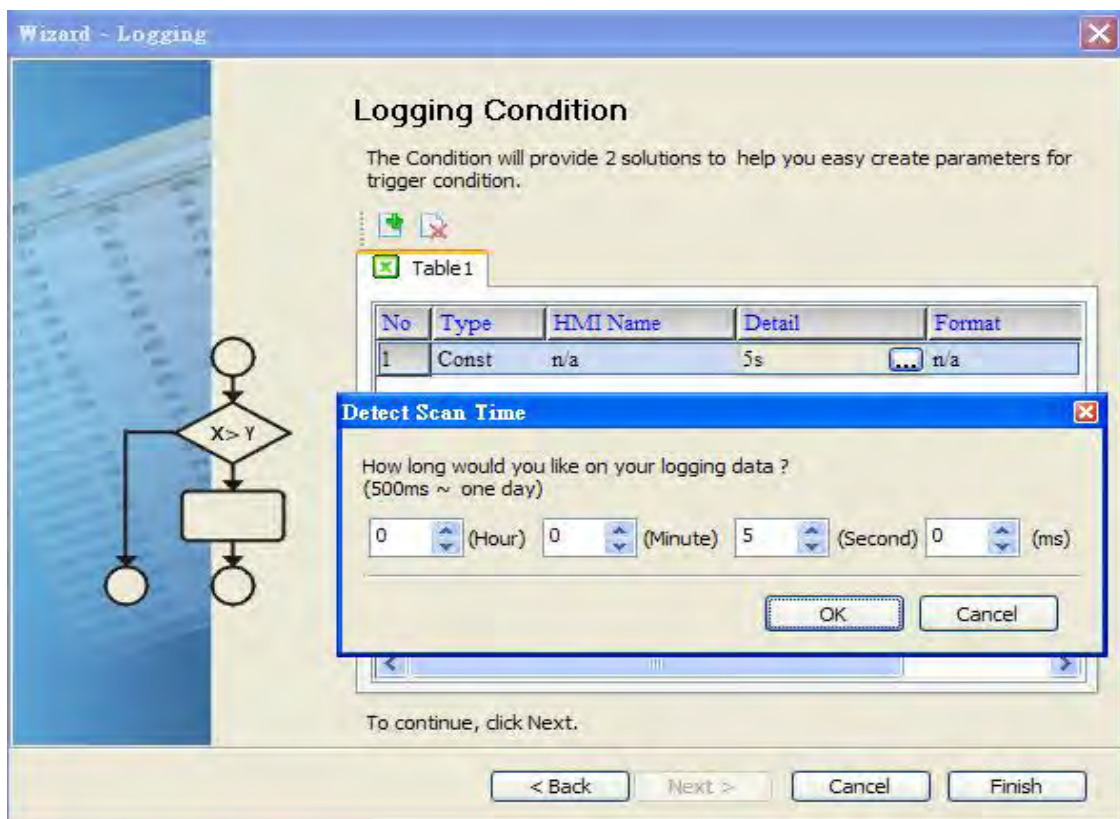
Setting Item	Description	Remark
Integer	<ol style="list-style-type: none"> 1. If the register address is set to Bit, this integer setting cannot be set. 2. If the register address is set to Word, except Floating and Char(Character), when the other format is selected, this integer setting can be set. 	
Fraction	<ol style="list-style-type: none"> 1. If the register address is set to Bit, this fraction setting cannot be set. 2. If the register address is set to Word, except Floating and Char(Character), when the other format is selected, this fraction setting can be set. 	
Controller	Connecting controller	Unchangeable

6.1.4 Sampling Conditions

This step is used to set the sampling conditions. There are two kinds of options for selection:

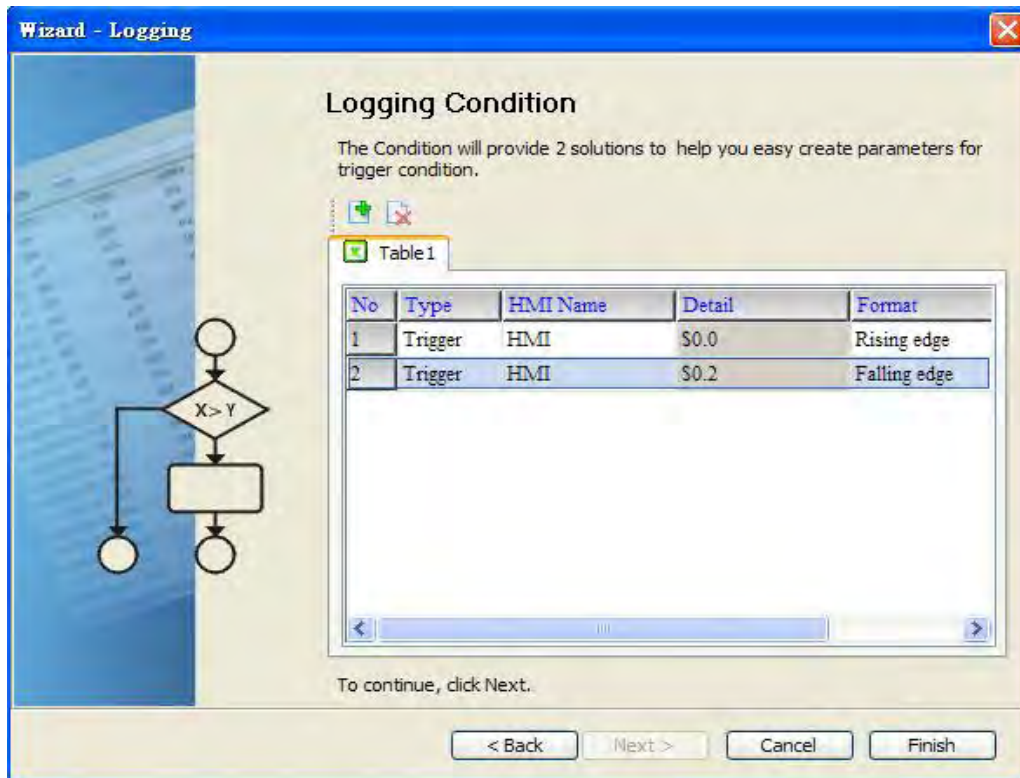
1. Const (execute sampling repeatedly in a certain span of time)

This option is used to determine how long the sampling process is repeated. The time unit can be defined as ms, second, minute or hour.



2. Trigger (Execute sampling when the trigger conditions are satisfied)

This option is used to determine how long the sampling process is repeated when the trigger conditions are met. The detailed settings are described as follows:



Polling Cycle (Sampling Cycle): It is used to determine how long the sampling process is repeated. The time unit is ms.

Logging Condition:

Setting Item	Description	Remark
No.	Condition number	Unchangeable
Type	Sampling type. There are two kinds of options for selection: Const and Trigger. Const: Execute sampling repeatedly in a certain span of time. Trigger: Execute sampling when the trigger conditions are satisfied.	
HMI Name	Name of connecting HMI	
Detail	Register Address	
Format	1. When the register address is set to Bit, the selectable options are: A. Rising edge: Triggered by rising-edge B. Falling edge Triggered by falling-edge	
Controller	Connecting controller	Unchangeable

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Chapter 7 Writing Data in Microsoft Access

Before creating testing example, make sure to change the upload and download option (**Options > Configuration**) on Screen Editor first. The default setting of upload and download is via **USB**. If the users need to use **Ethernet**, please change the default setting by referring to **Appendix A**.

7.1 Example

This example is used to help the users to understand how to use eServer to read the data of the register addresses \$3 and \$6 every second, record the data in Microsoft Access database via ODBC interface, and save the collected data into the specified folder (C:\Data).

7.1.1 Database Setting

1. Installing MSDE

First download the free software MSDE from the Microsoft web site. To download it, go to <http://www.microsoft.com/downloads/details.aspx?familyid=413744d1-a0bc-479f-bafa-e4b278eb9147&displaylang=zh-tw#filelist> and a download link will redirect the users to download it.

After running the self-extracting file, open **setup.ini** file within MSDE subdirectory for editing.


In the **setup.ini** file under the **[Options]** tag insert:

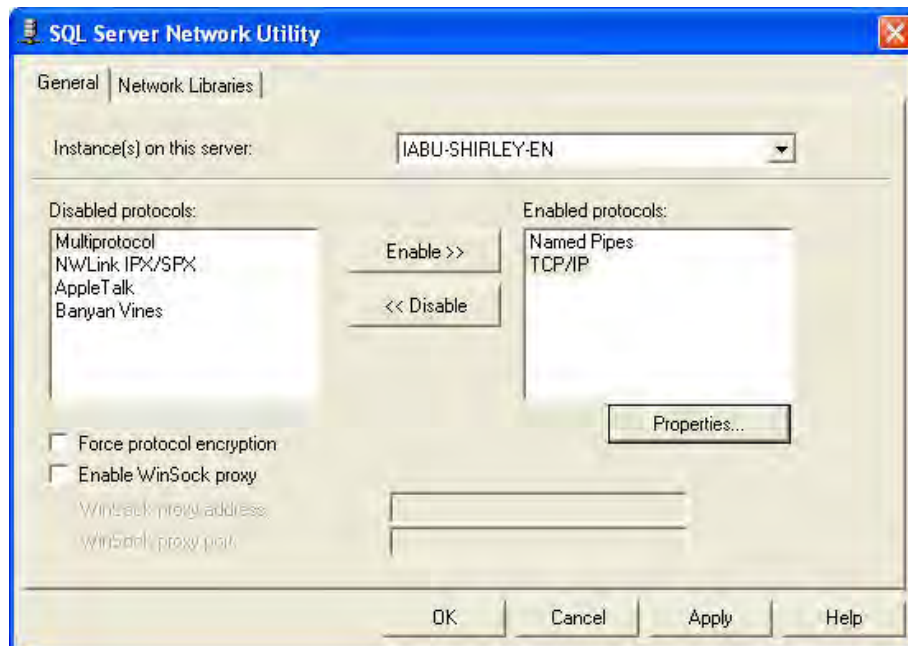
SAPWD="0000"

SECURITYMODE="SQL"

The SAPWD is the password required for the system administrator (SA) login account. In this case, the SA login password is set to **0000**. The users can set the desired password freely. Once the setup.ini file is saved, double-click setup.exe to complete MSDE installation.

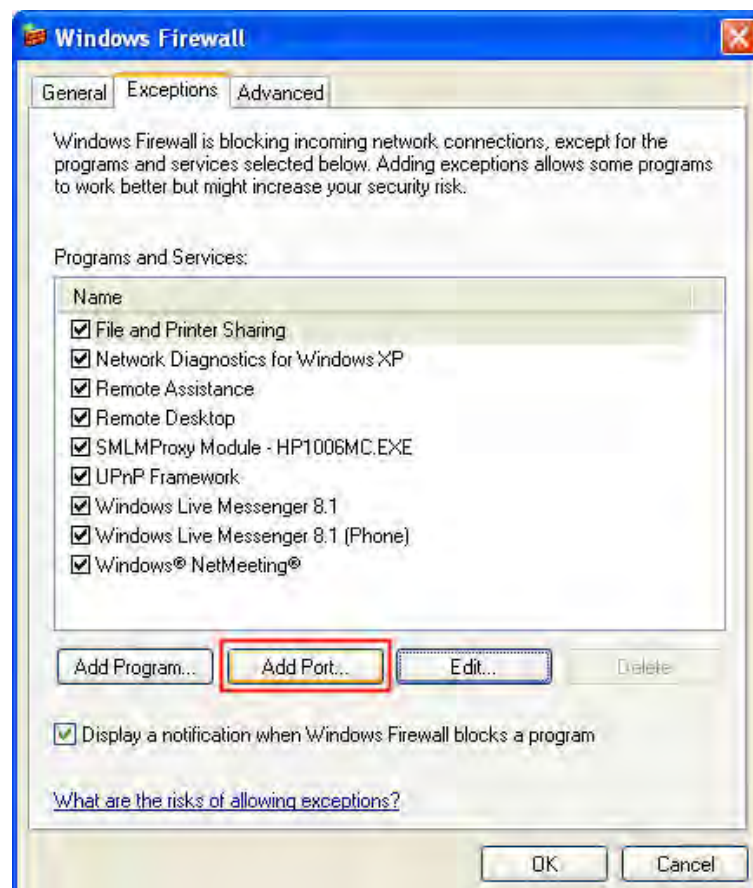
2. Enabling MSDE

Execute **SVRNETCN.exe** () within C:\Program Files\Microsoft SQL Server\80\Tools\Binn subdirectory and enable **Named Pipes** and **TCP/IP** options.

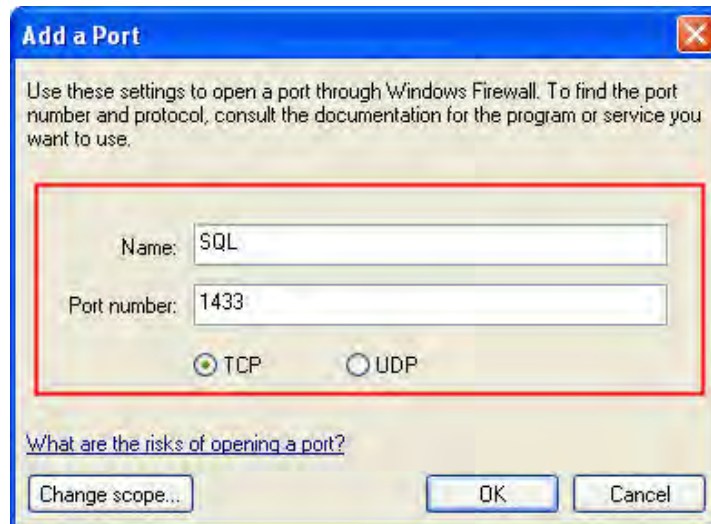


3. Setting Windows Firewall

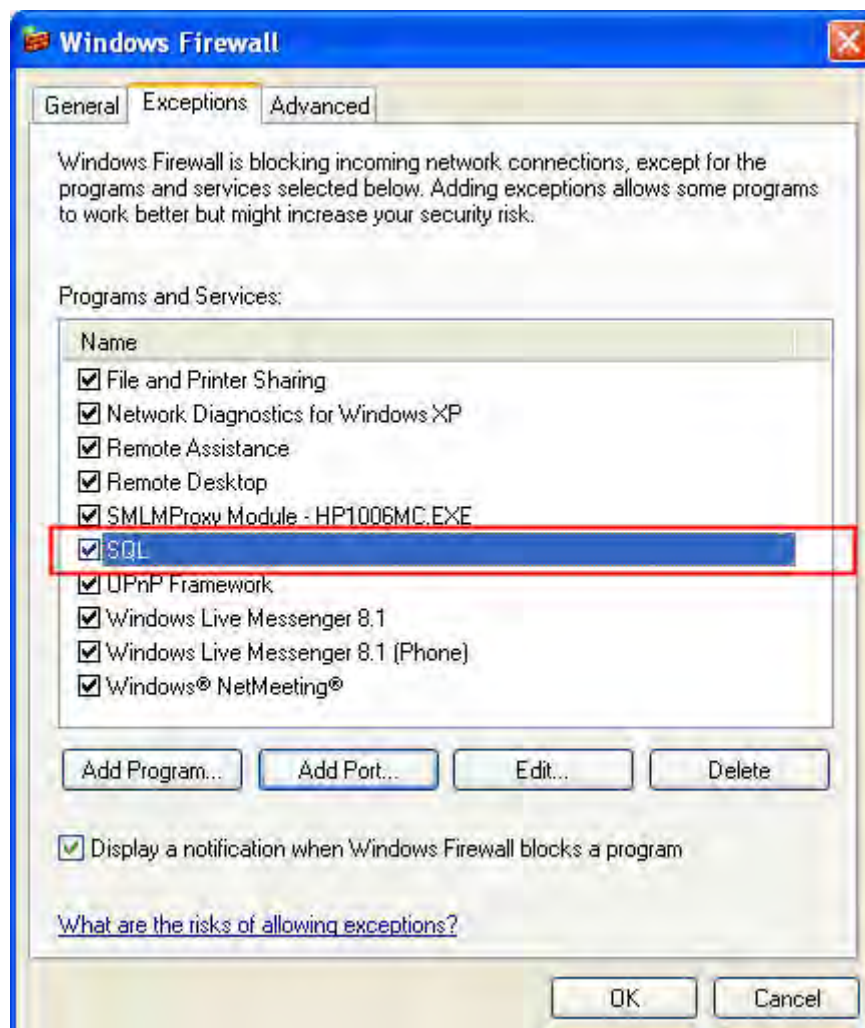
Click **Start** and then click **Control Panel**. In the **Control Panel**, click **Windows Security Center > Windows Firewall**. Then, click on the **Exceptions** tab.




Click **Add Port** button and the following **Add a Port** dialog box will appear.

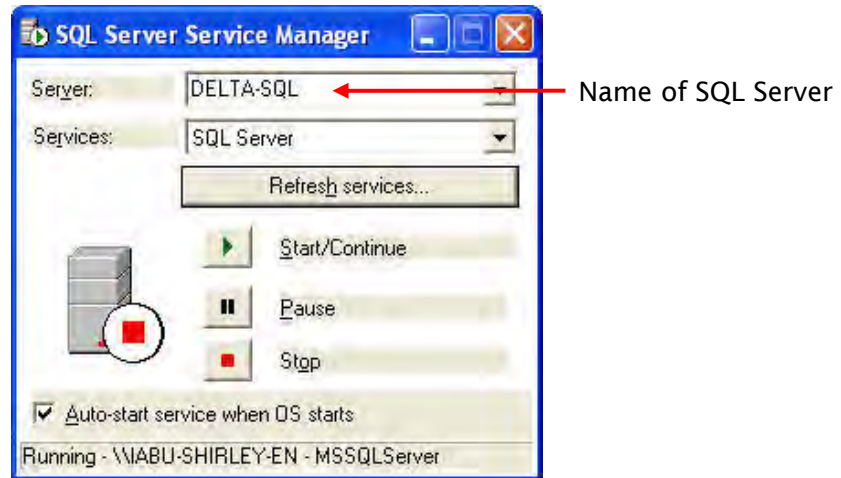


In the Add a Port dialog box, type SQL in the Name text field and type the port number of the instance of the Database Engine, such as 1433 for the default instance in the Port number text field. Ensure that TCP is selected and click OK to complete the settings. When SQL port is shown and selected in Windows Firewall dialog box, it indicates that SQL Server port will not be blocked and the incoming connections to SQL Server will be allowed.



4. Activating SQL Server

Double-click the  located at the bottom right of Windows screen to open the following **SQL Server Service Manager** dialog box and click **Start/Continue** button.

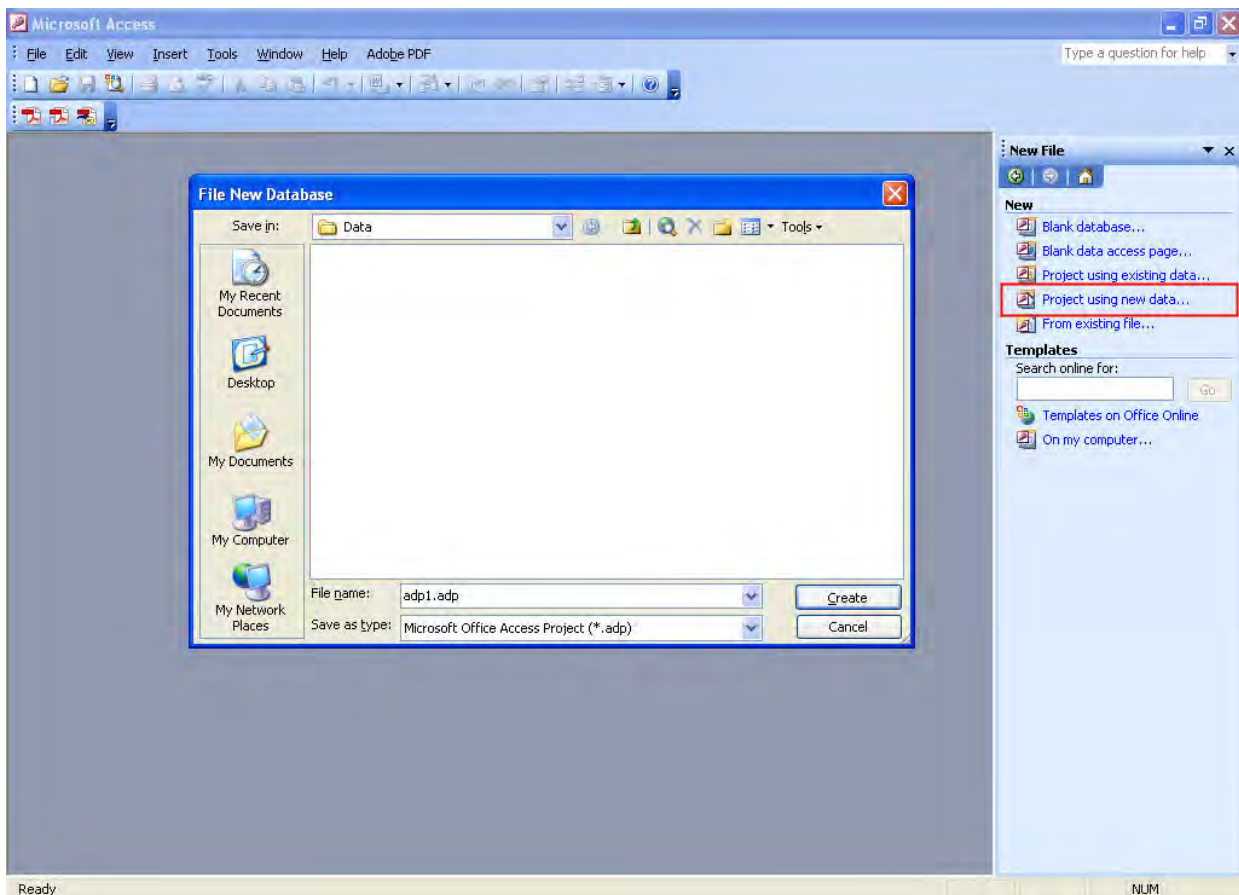


5. Starting Microsoft Access

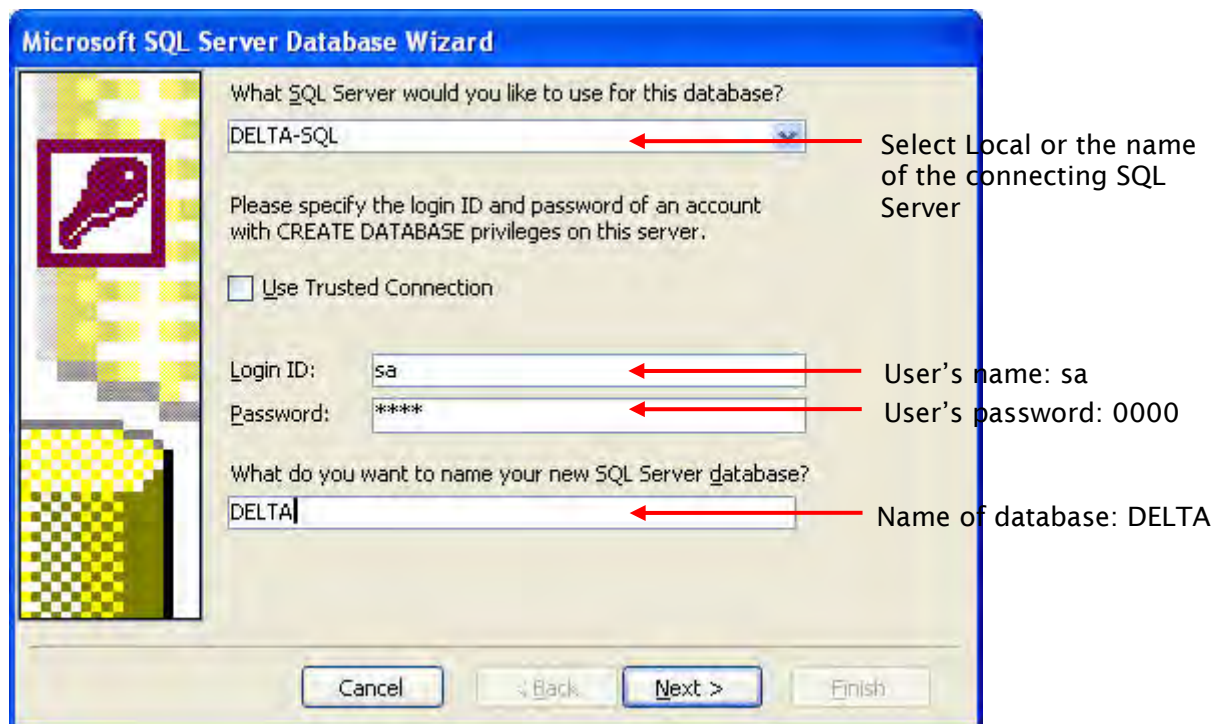
Start Microsoft Access by clicking **Start > Programs > Microsoft Office > Microsoft Office Access**.



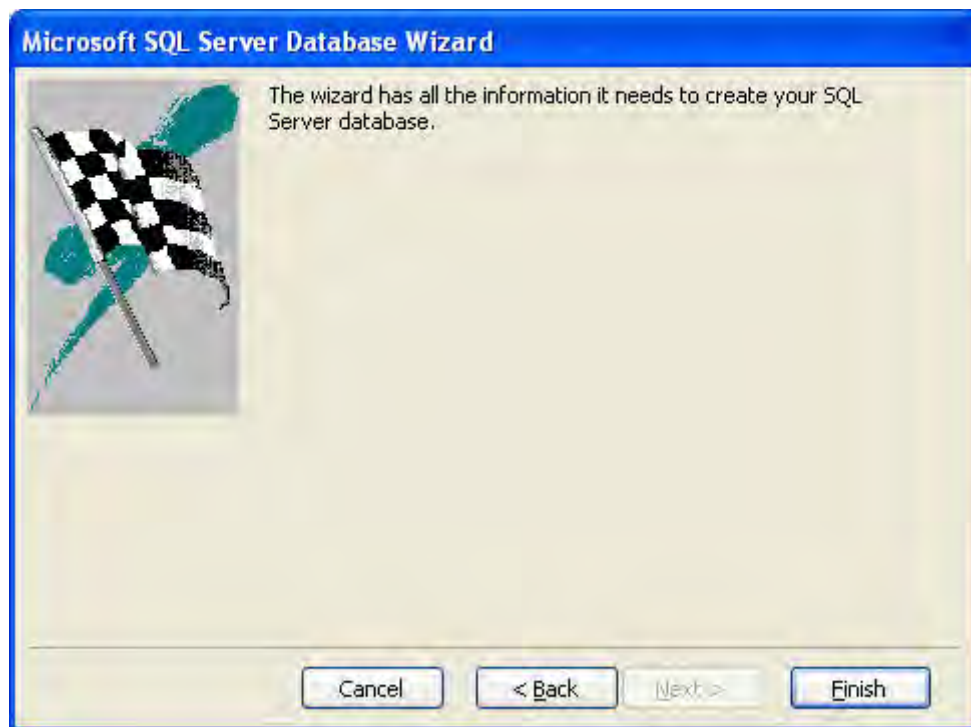
Then, click **New** icon and choose **Project using new data** to open a new database file and set the directory to C:\Data.



Press **Create** button to enable Microsoft SQL Server Database Wizard.

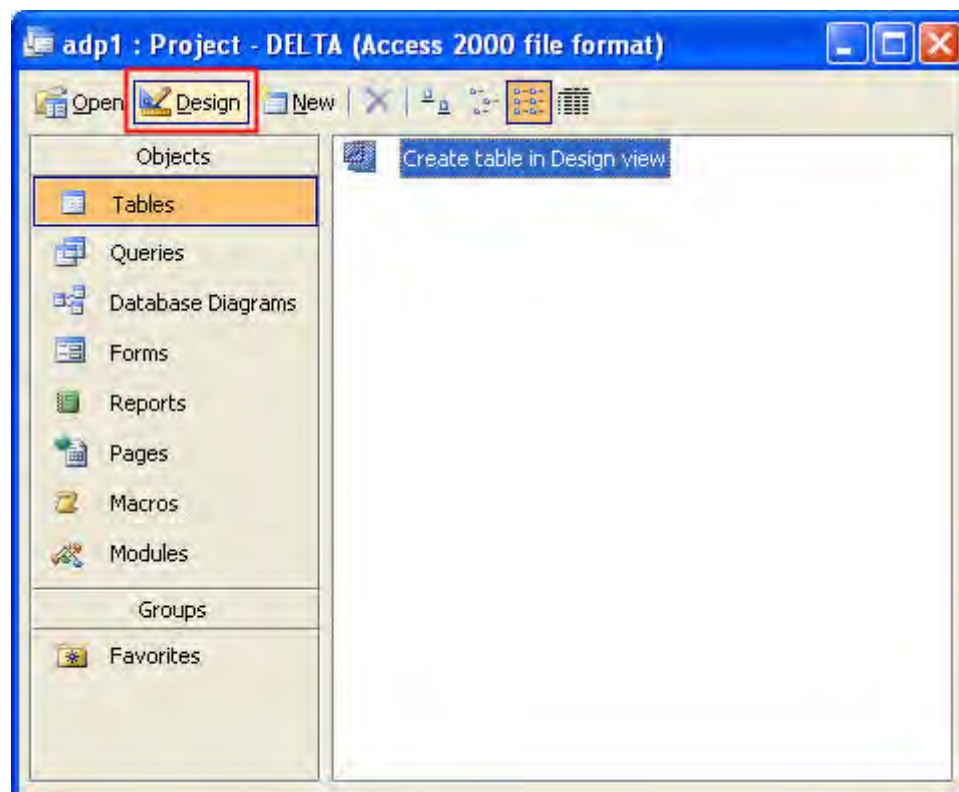


Press **Next** button to continue.



Press **Finish** button to complete the settings.

Then, click **Design** in the following pop-up window to create a database table in Design view.



In the Table dialog box, create a database like the following figure shown below.

Column Name	Data Type	Length	Allow Nulls	Description
Time	char	50	✓	
Data1	char	50	✓	
Data2	char	50	✓	

Columns | Lookup

Default Value

Precision: 0

Scale: 0

Identity: No

Identity Seed: 1

Identity Increment: 1

Is Rowid: No

Formula: <database default>

Collation: <database default>

Format: <database default>

Decimal Places: 0

Input Mask: <database default>

After editing the table, close the window to give a name for this table such as Table 1.

Choose Name

Enter a name for the table:

Table1

OK Cancel Help

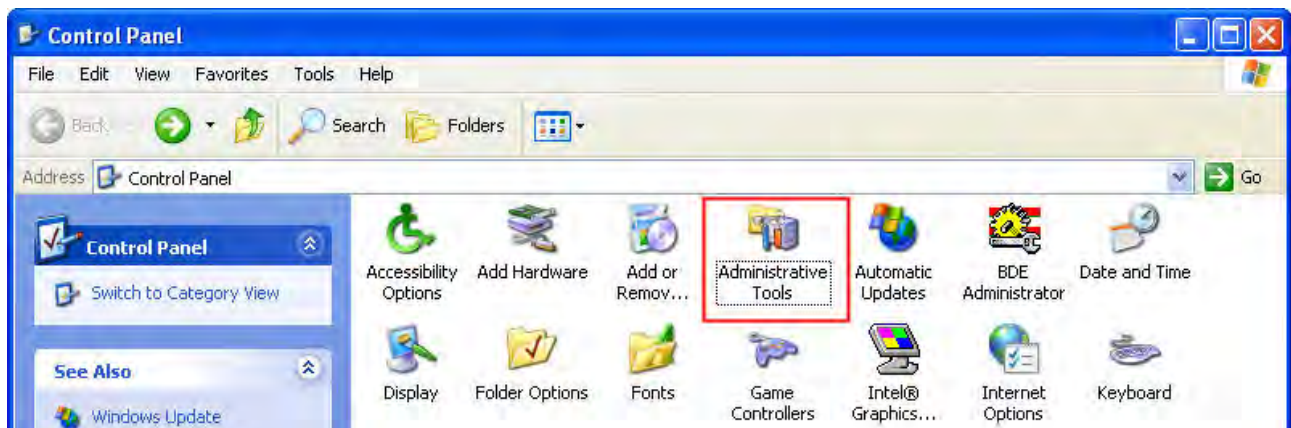
Click **OK** button, and the following warning dialog will pop-up.

Please press **No** button to complete the settings.

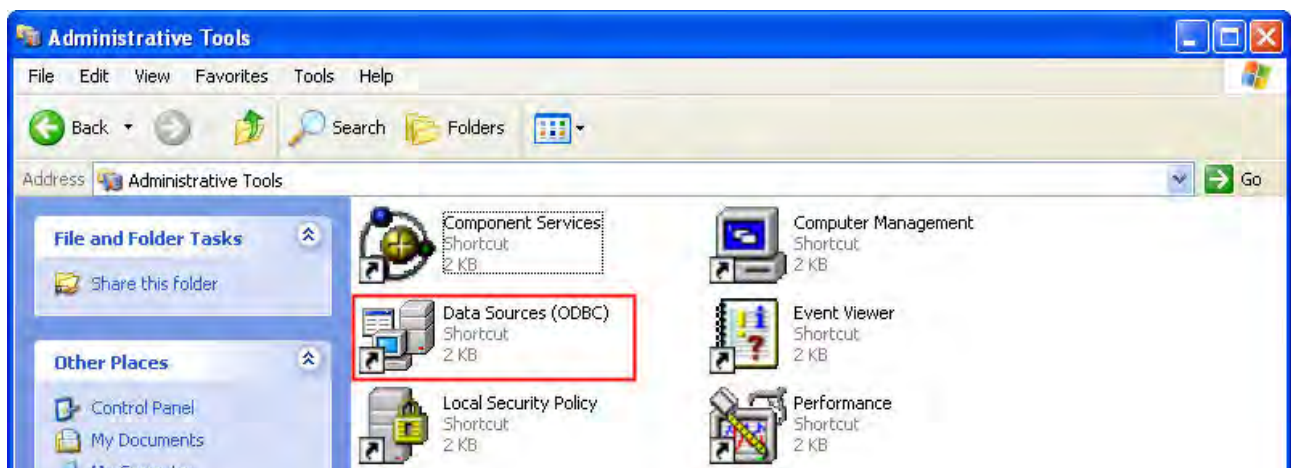


6. ODBC Setup

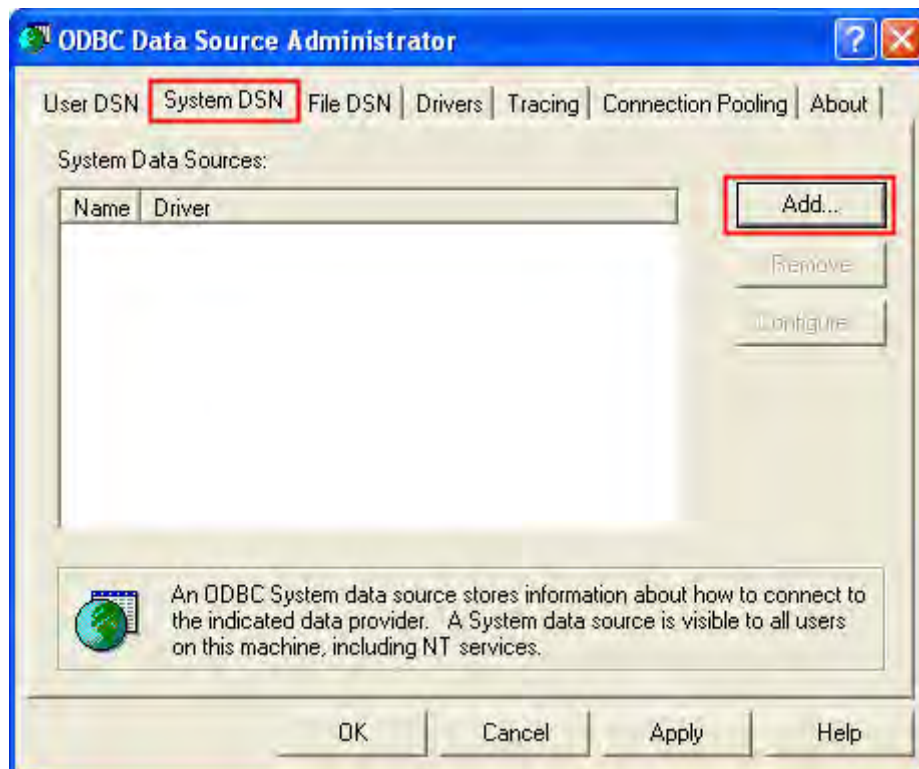
In the **Control Panel**, double-click **Administrative Tools**.



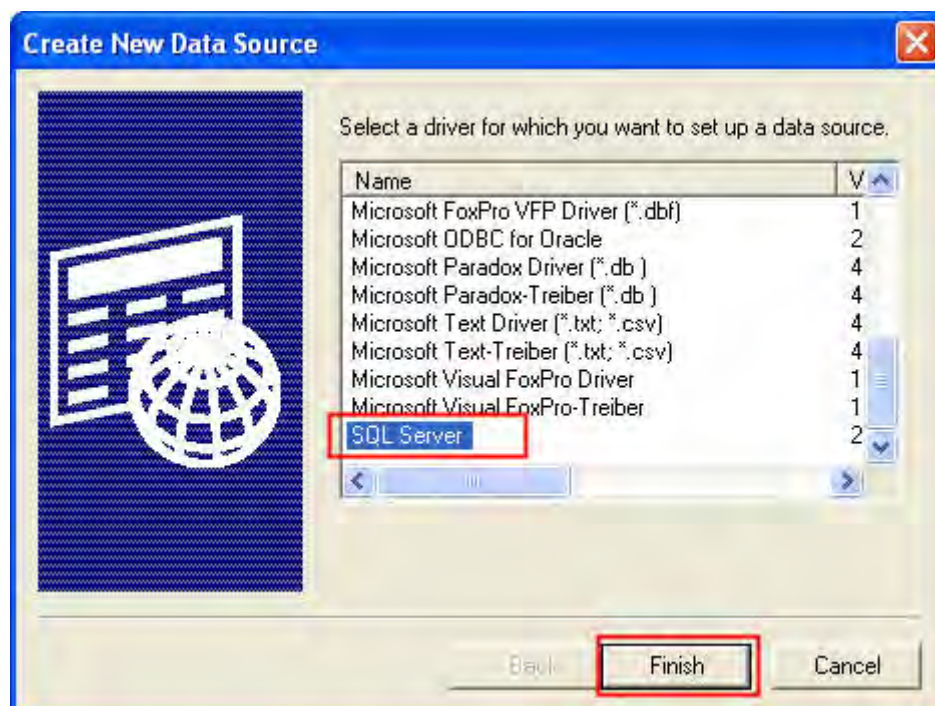
In the **Administrative Tools**, double-click **Data Sources (ODBC)**.



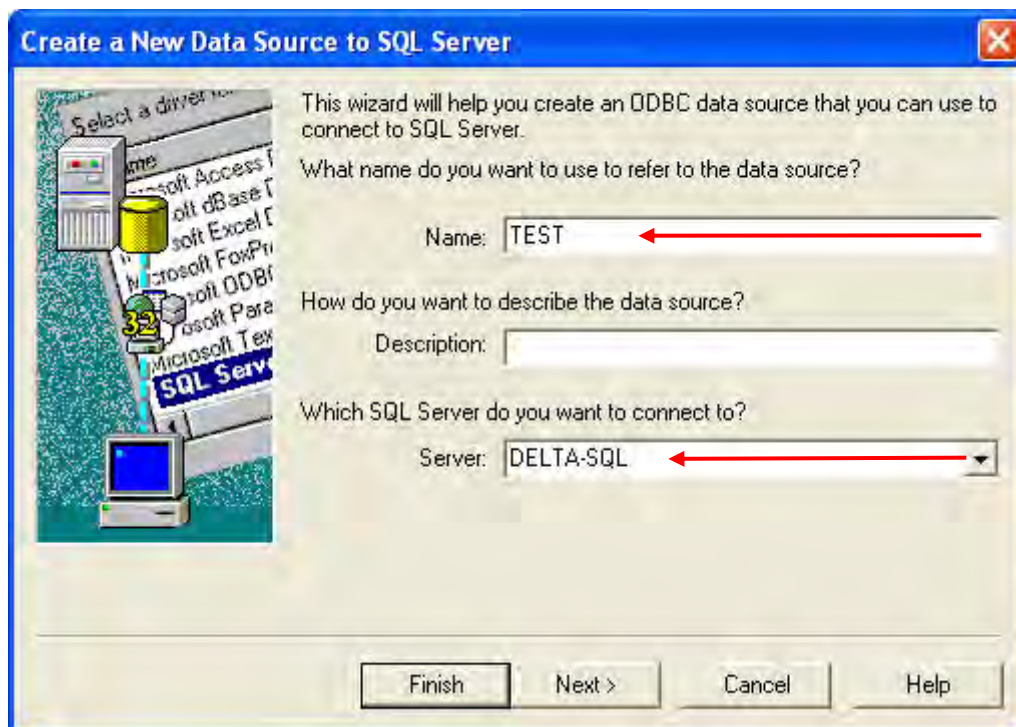
In the **ODBC Data Source Administrator** dialog box, select **System DSN** tab and click on **Add** button to add system data source.



Select **SQL Server** and then click on **Finish** button.



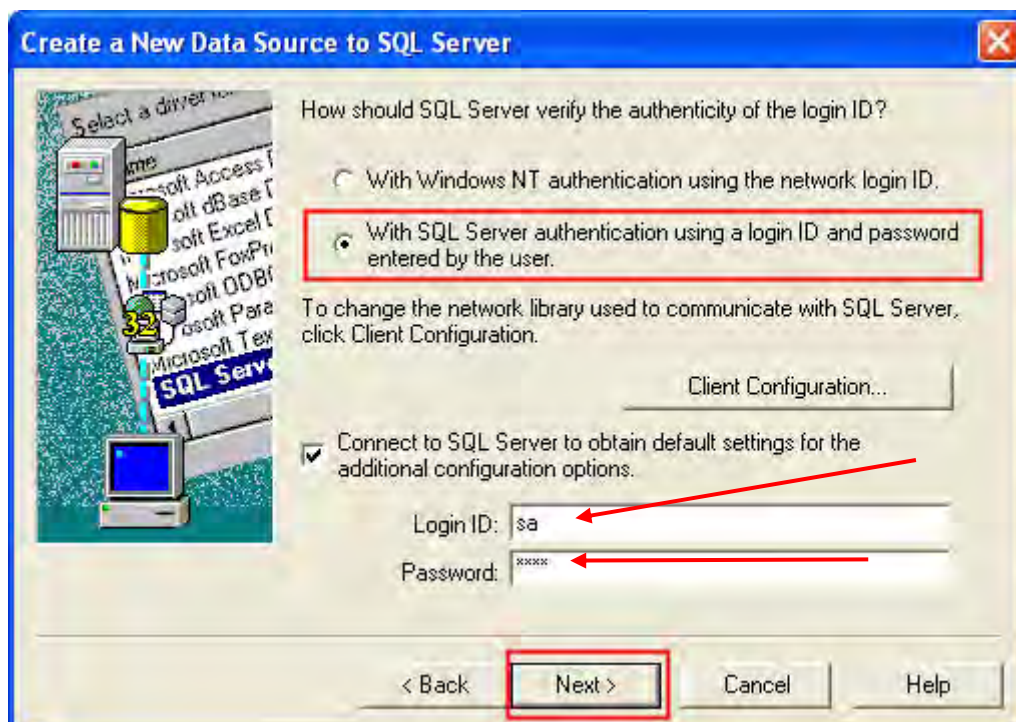
In the Create a New Data Source to SQL Server dialog box, do the following:
Enter the name of the data source and select the SQL Server that the users want to access.



Press **Next** button to continue.

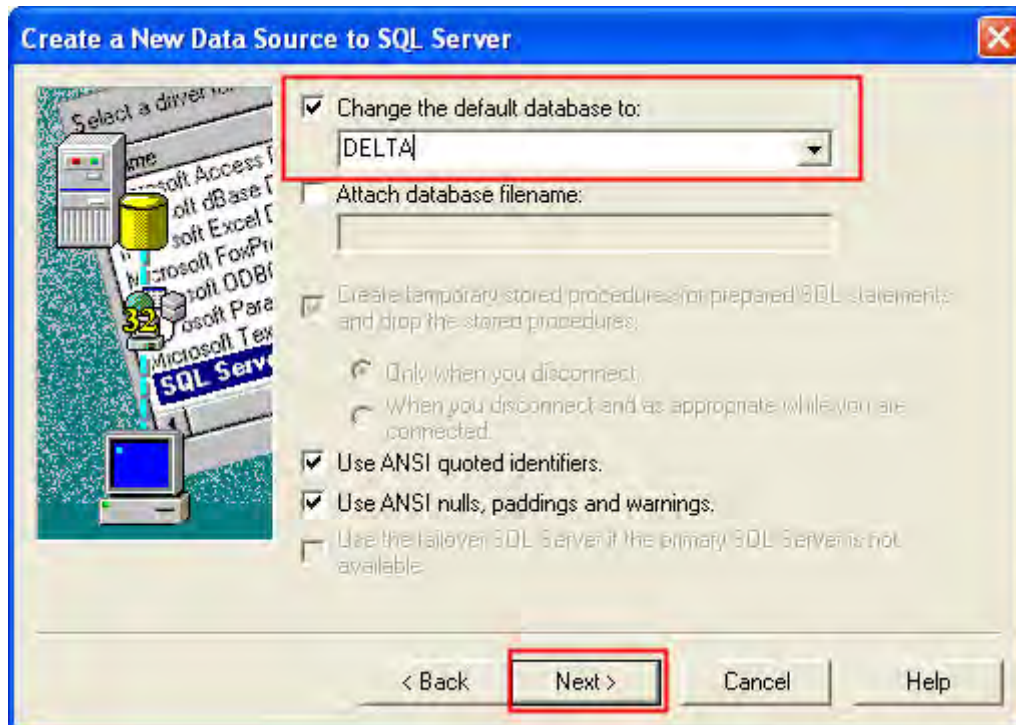
Choose how SQL Server should verify the authenticity of the login ID. Enter the user's name and the password. In this case, the user's name is **sa** and the password is **0000**.

Press **Next** button to continue.



Change the default database to **DELTA**.

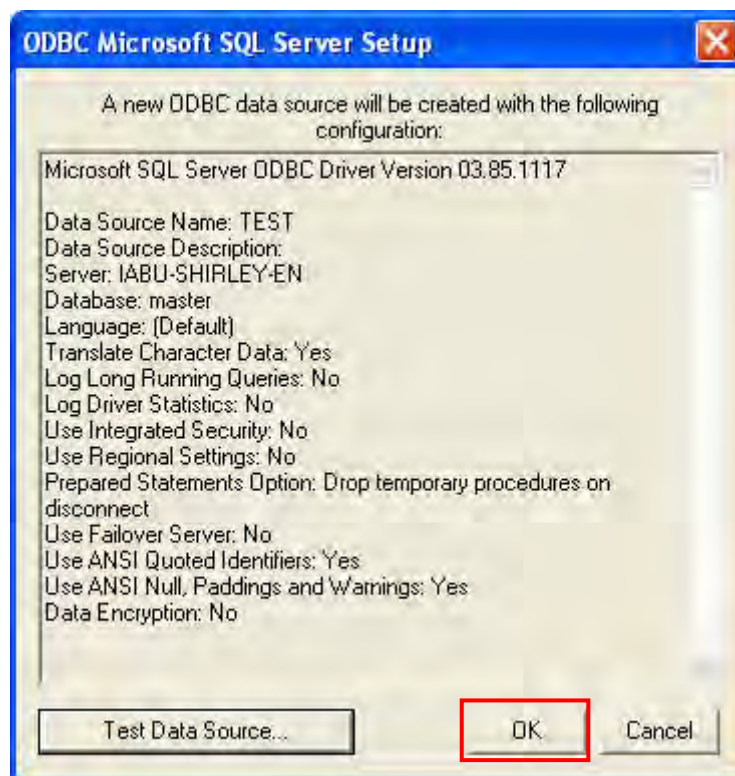
Press **Next** button to continue.



Press **Finish** button.

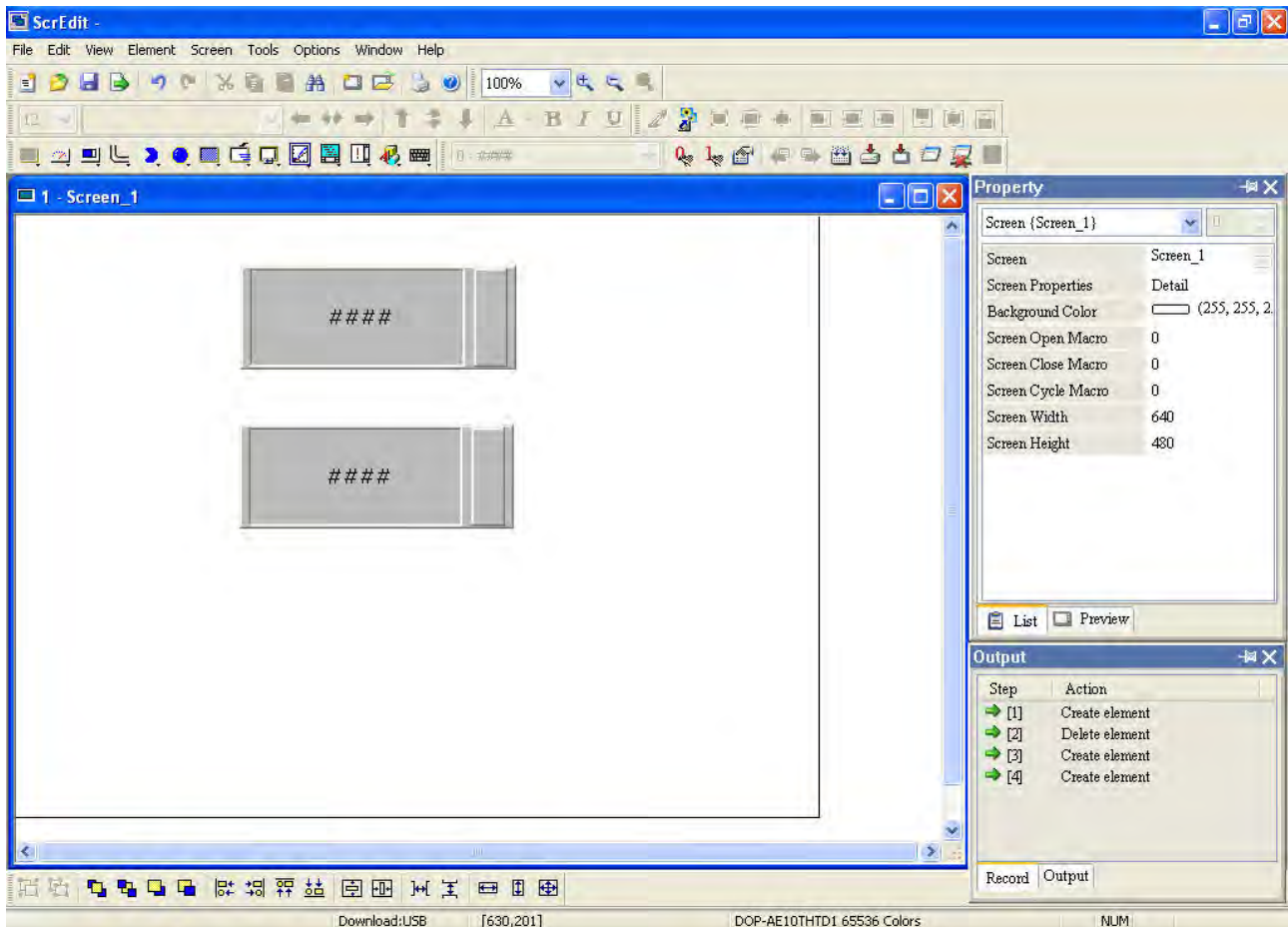


Press **OK** button to complete ODBC setup.

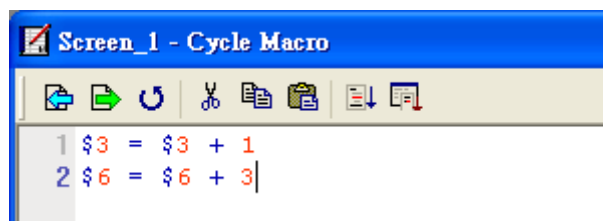


7.1.2 Create HMI Project File

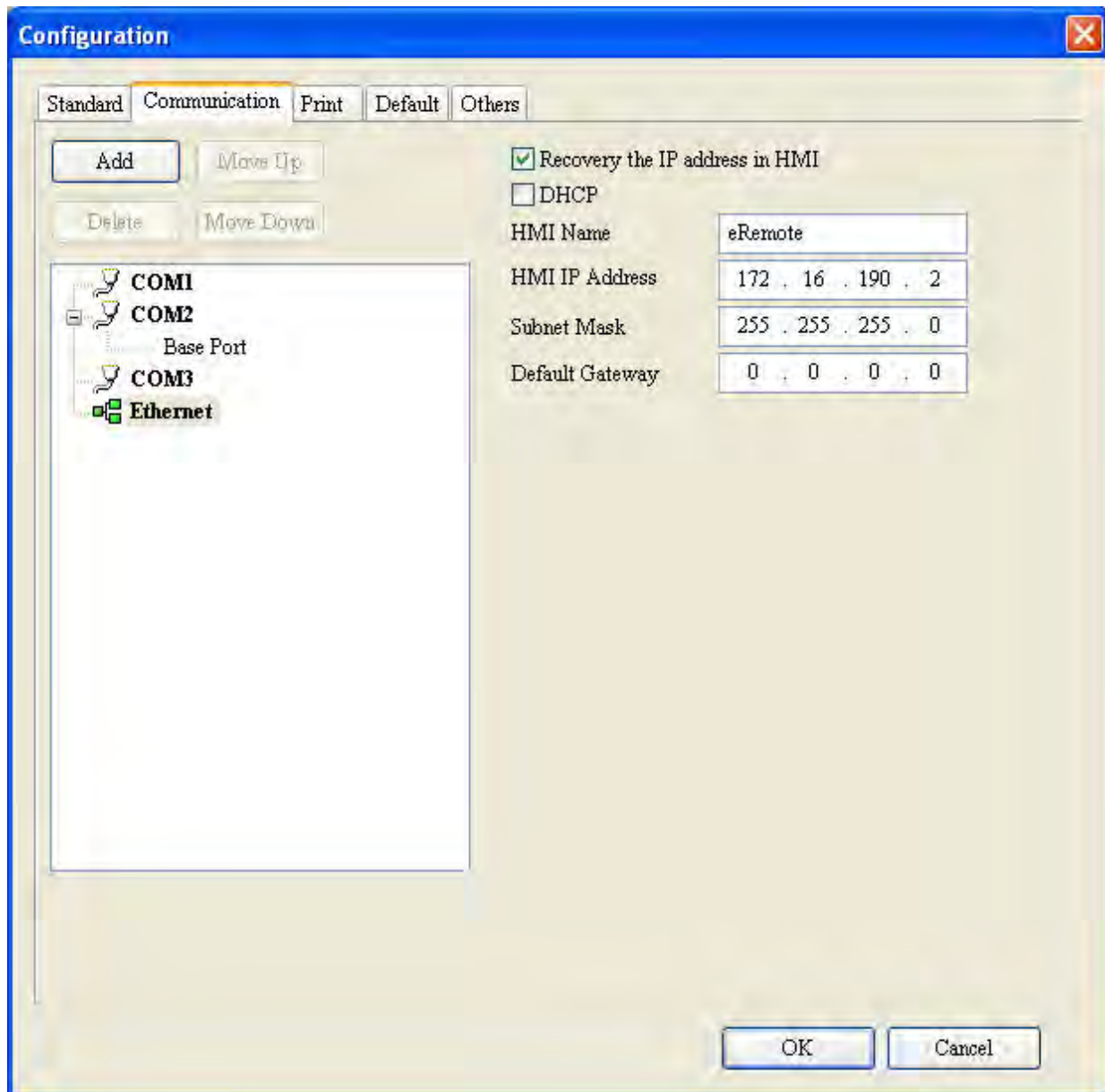
Start Screen Editor software program and click **File > New** or click **New** icon to create a new project. Then, click **Element > Input > Numeric Entry** to create two numeric entry elements (\$3 and \$6) on the screen. In this case, 10 inches color AE type DOP series HMI is used.



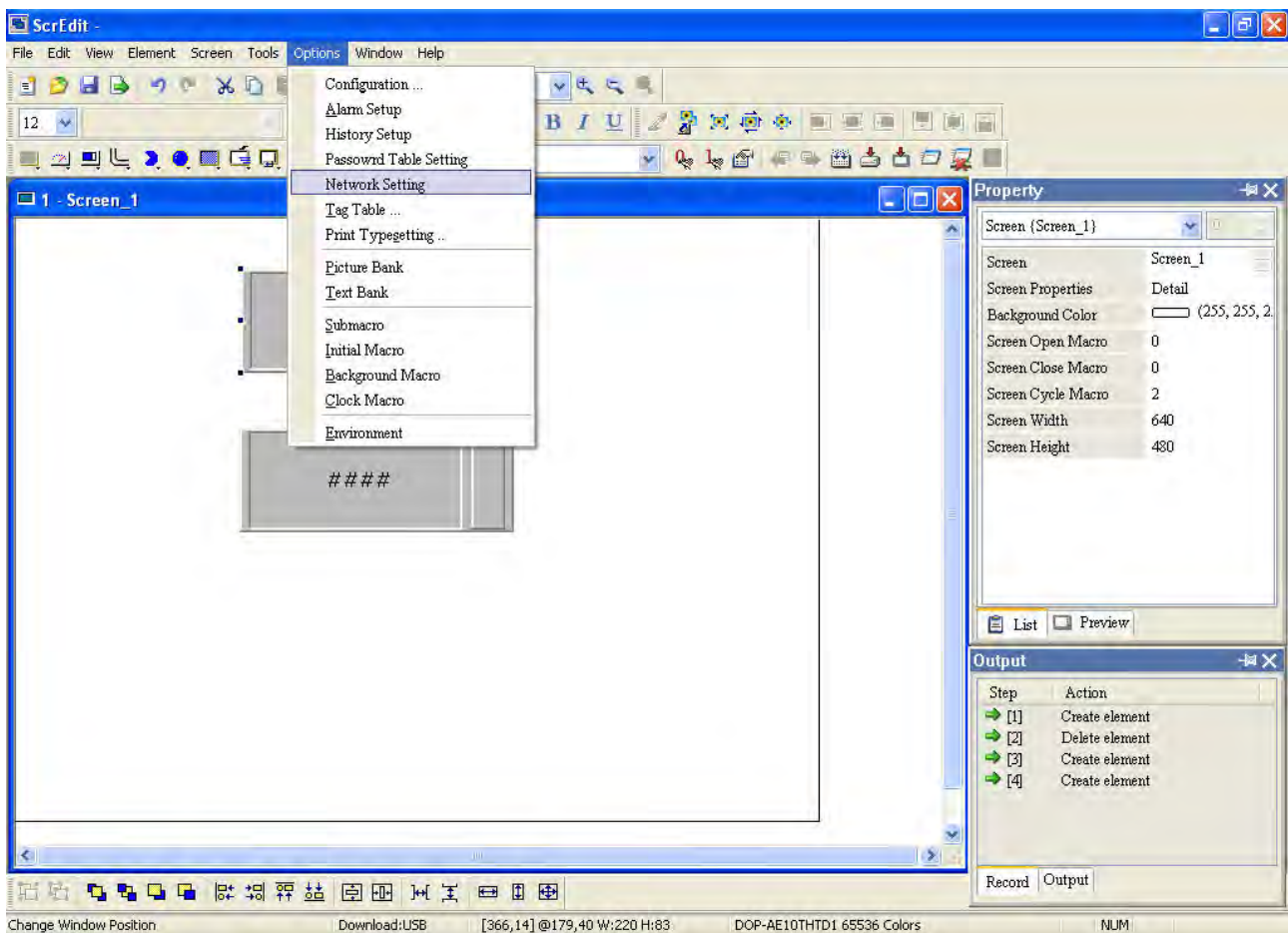
Use Screen Cycle Macro and enter the following commands in macro command window.



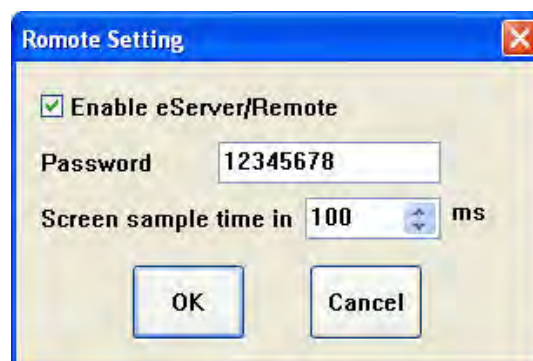
Click **Options > Configuration** and use **Communication** tab to select **Ethernet** and complete HMI networking settings shown as the figure below. Then, press **OK** button to finish the settings.




Next, click **Options > Network Setting**.



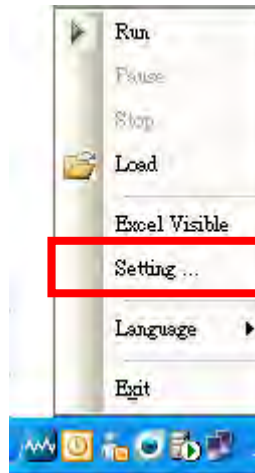
The following **Remote Setting** dialog box will appear. Check the check box before **Enable eServer/Remote** and set a password for network communication. After **OK** button is pressed, HMI networking is completed. Compile the edited project file at the end of the programming and the edited project file could be transferred to HMI.



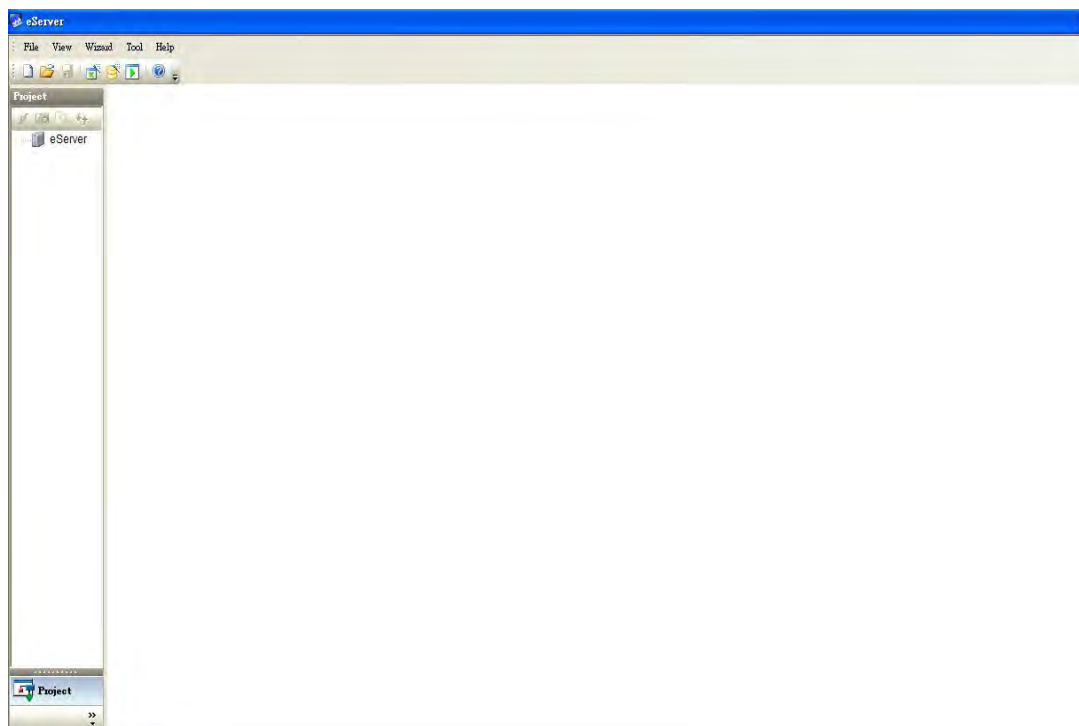
7.1.3 eServer Setting

1. After eServer is enabled, eServer  icon will appear at the bottom right of Windows screen.

Right-click this icon and select **Setting** option from the pop-up menu.




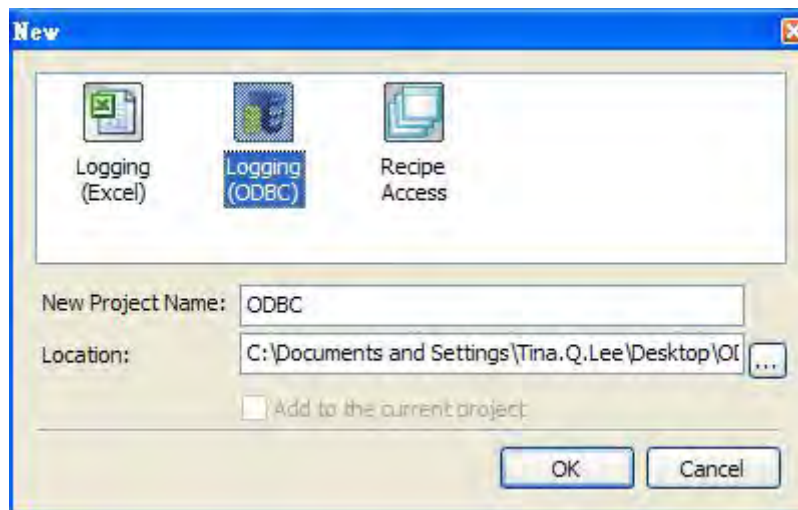
2. Then, eServer window will open.



3. Click **File > New** or click  icon to create a new project file.

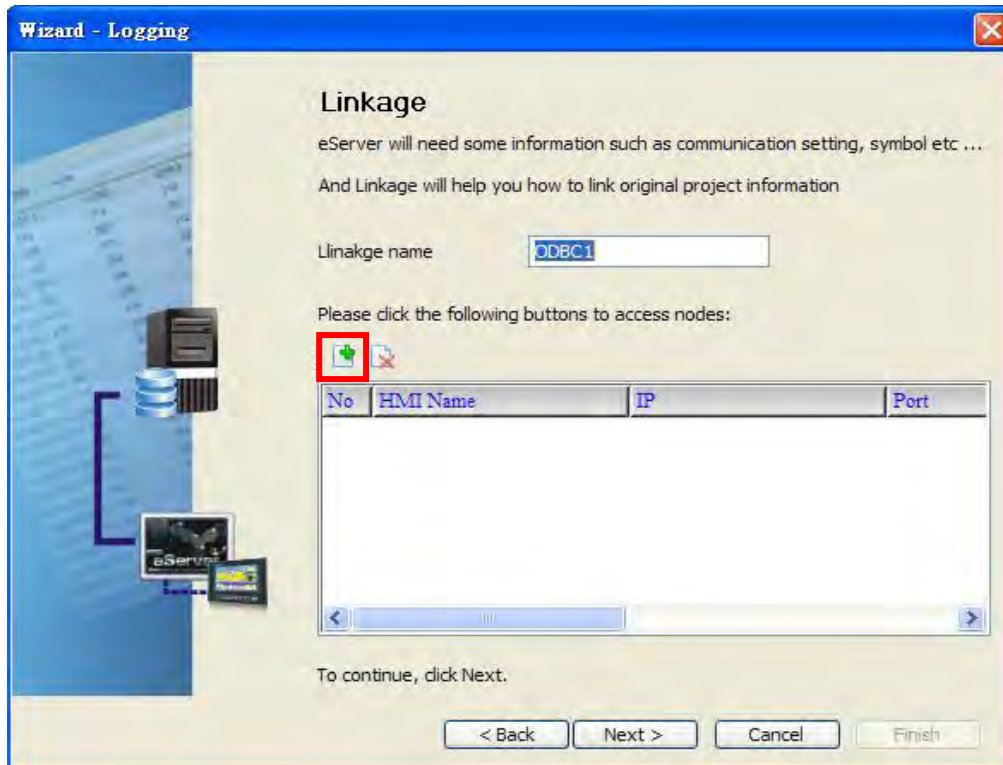


4. Select  icon to enable ODBC Logging Wizard.

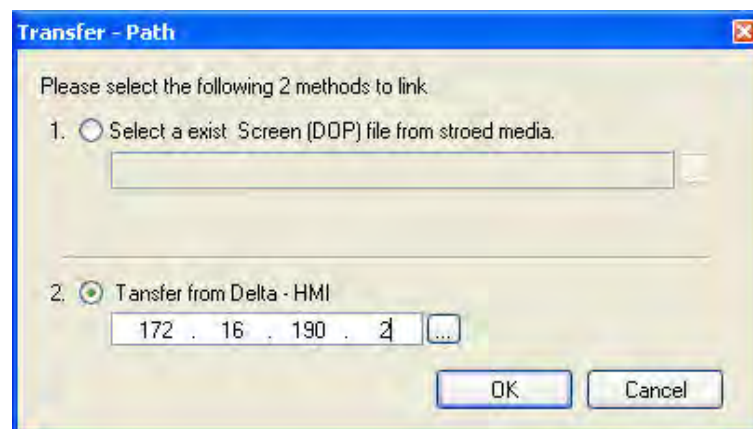


Press **Next** button to go to next step.

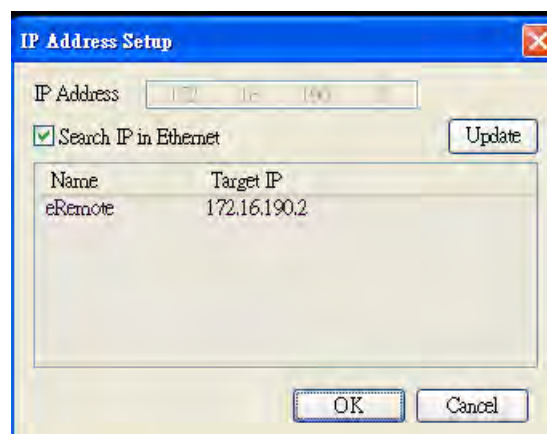
5. Click **New** icon to access nodes (link to HMI).



Choose **Transfer from Delta - HMI** option to transfer the HMI screen project file via network communication directly.



Press **OK** button to go to next step.



Press **OK** button to go to next step.

6. ODBC Data Source Setting: Create an ODBC Data Source pointing to your database.
Please refer to the following settings.

Wizard - Logging

ODBC
Please indicate the following items

Chooses a data source (DSN) and input user name and password

ODBC Data Source: TEST

User Name: sa

Password: *****

Database Driver: SQL Server

Table: Table1

Time and Date	Table	Field	Detail
<input checked="" type="checkbox"/> Stamp	Table1	Time	%m/%d/%y %H:%M:%S

To continue, click Next.

< Back Next > Cancel Finish

Press **Next** button to go to next step.

7. Register Setting: Set the register address of the sampling data.

Wizard - Logging

Register Setting
Please input logging address in the following Cell(s)

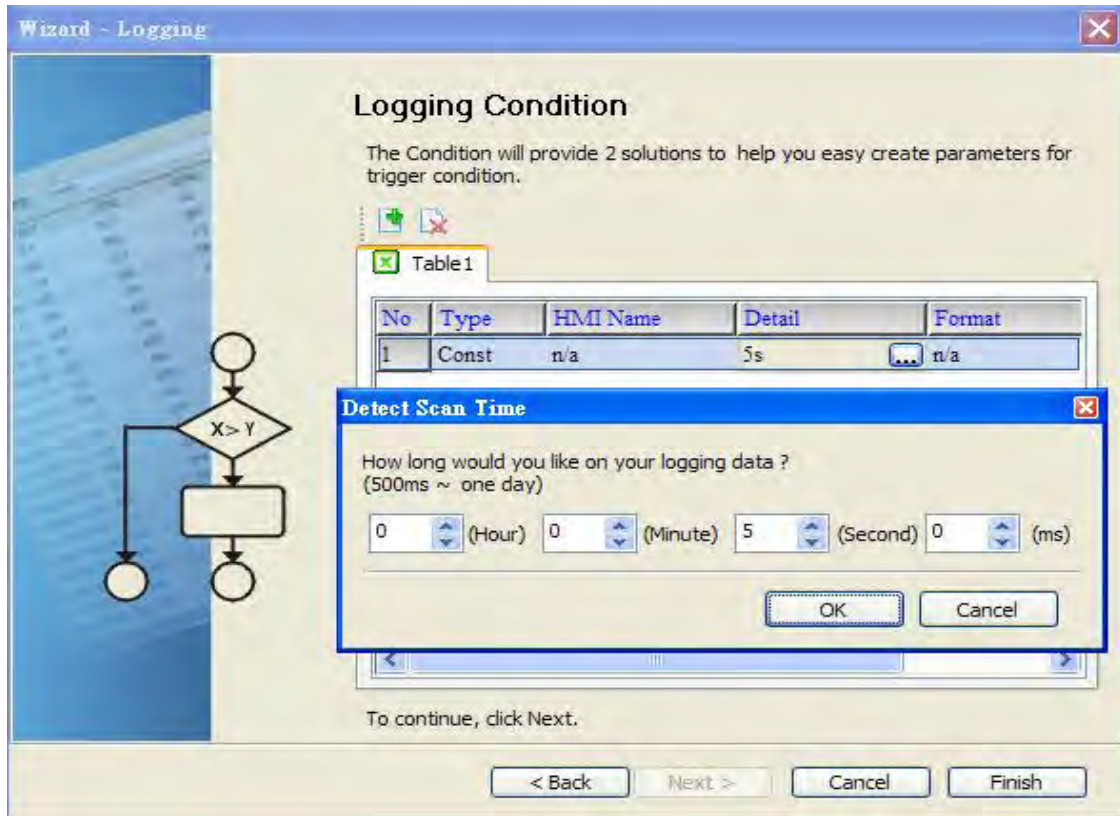
Add Delete

No	Table	Field	HMI Name	Address	Form
1	Table1	Data1	HMI	\$3	Unsig
2	Table1	Data2	HMI	\$6	Unsig


To continue, click Next.

< Back Next > Cancel Finish

8. Set the sampling conditions to constant 5s.



Press **Next** button to continue.

9. Press  icon. After the password is entered, the system will start sampling operation, i.e. writing data in Microsoft Access.

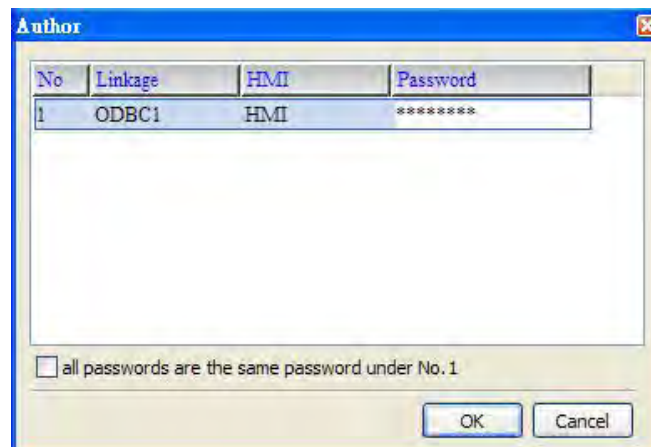
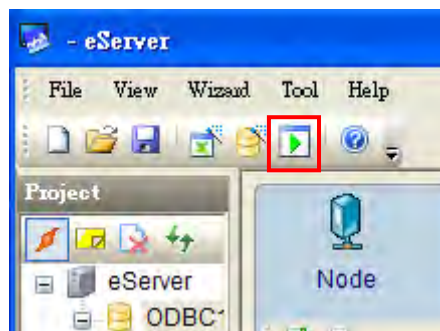


Table1 : Table

	Time	Data1	Data2
▶	08/26/2009 13:24:51	52	52
	08/26/2009 13:24:52	61	61
	08/26/2009 13:24:53	71	71
	08/26/2009 13:24:54	81	81
	08/26/2009 13:24:55	90	91
	08/26/2009 13:24:56	65436	0
	08/26/2009 13:24:57	65446	10
	08/26/2009 13:24:58	65456	20
	08/26/2009 13:24:59	65466	30
	08/26/2009 13:25:00	65475	39
	08/26/2009 13:25:01	65484	48
	08/26/2009 13:25:02	65494	58
	08/26/2009 13:25:03	65504	68
	08/26/2009 13:25:04	65513	77
	08/26/2009 13:25:05	65523	87
	08/26/2009 13:25:06	65533	97
	08/26/2009 13:25:07	7	7
	08/26/2009 13:25:08	16	16
	08/26/2009 13:25:09	26	27
	08/26/2009 13:25:10	36	36
	08/26/2009 13:25:11	46	46
	08/26/2009 13:25:12	54	54
	08/26/2009 13:25:13	64	64
	08/26/2009 13:25:14	74	74
	08/26/2009 13:25:15	84	84

Record: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1130 1131 1132 1133 1134 1135 1136 1137 1138 1139 1140 1141 1142 1143 1144 1145 1146 1147 1148 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182 1183 1184 1185 1186 1187 1188 1189 1190 1191 1192 1193 1194 1195 1196 1197 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1210 1211 1212 1213 1214 1215 1216 1217 1218 1219 1220 1221 1222 1223 1224 1225 1226 1227 1228 1229 1230 1231 1232 1233 1234 1235 1236 1237 1238 1239 1240 1241 1242 1243 1244 1245 1246 1247 1248 1249 1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260 1261 1262 1263 1264 1265 1266 1267 1268 1269 1270 1271 1272 1273 1274 1275 1276 1277 1278 1279 1280 1281 1282 1283 1284 1285 1286 1287 1288 1289 1290 1291 1292 1293 1294 1295 1296 1297 1298 1299 1300 1301 1302 1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322 1323 1324 1325 1326 1327 1328 1329 1330 1331 1332 1333 1334 1335 1336 1337 1338 1339 1340 1341 1342 1343 1344 1345 1346 1347 1348 1349 1350 1351 1352 1353 1354 1355 1356 1357 1358 1359 1360 1361 1362 1363 1364 1365 1366 1367 1368 1369 1370 1371 1372 1373 1374 1375 1376 1377 1378 1379 1380 1381 1382 1383 1384 1385 1386 1387 1388 1389 1390 1391 1392 1393 1394 1395 1396 1397 1398 1399 1400 1401 1402 1403 1404 1405 1406 1407 1408 1409 1410 1411 1412 1413 1414 1415 1416 1417 1418 1419 1420 1421 1422 1423 1424 1425 1426 1427 1428 1429 1430 1431 1432 1433 1434 1435 1436 1437 1438 1439 1440 1441 1442 1443 1444 1445 1446 1447 1448 1449 1450 1451 1452 1453 1454 1455 1456 1457 1458 1459 1460 1461 1462 1463 1464 1465 1466 1467 1468 1469 1470 1471 1472 1473 1474 1475 1476 1477 1478 1479 1480 1481 1482 1483 1484 1485 1486 1487 1488 1489 1490 1491 1492 1493 1494 1495 1496 1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511 1512 1513 1514 1515 1516 1517 1518 1519 1520 1521 1522 1523 1524 1525 1526 1527 1528 1529 1530 1531 1532 1533 1534 1535 1536 1537 1538 1539 1540 1541 1542 1543 1544 1545 1546 1547 1548 1549 1550 1551 1552 1553 1554 1555 1556 1557 1558 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1570 1571 1572 1573 1574 1575 1576 1577 1578 1579 1580 1581 1582 1583 1584 1585 1586 1587 1588 1589 1590 1591 1592 1593 1594 1595 1596 1597 1598 1599 1600 1601 1602 1603 1604 1605 1606 1607 1608 1609 1610 1611 1612 1613 1614 1615 1616 1617 1618 1619 1620 1621 1622 1623 1624 1625 1626 1627 1628 1629 1630 1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644 1645 1646 1647 1648 1649 1650 1651 1652 1653 1654 1655 1656 1657 1658 1659 1660 1661 1662 1663 1664 1665 1666 1667 1668 1669 1670 1671 1672 1673 1674 1675 1676 1677 1678 1679 1680 1681 1682 1683 1684 1685 1686 1687 1688 1689 1690 1691 1692 1693 1694 1695 1696 1697 1698 1699 1700 1701 1702 1703 1704 1705 1706 1707 1708 1709 1710 1711 1712 1713 1714 1715 1716 1717 1718 1719 1720 1721 1722 1723 1724 1725 1726 1727 1728 1729 1730 1731 1732 1733 1734 1735 1736 1737 1738 1739 1740 1741 1742 1743 1744 1745 1746 1747 1748 1749 1750 1751 1752 1753 1754 1755 1756 1757 1758 1759 1760 1761 1762 1763 1764 1765 1766 1767 1768 1769 1770 1771 1772 1773 1774 1775 1776 1777 1778 1779 1780 1781 1782 1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801 1802 1803 1804 1805 1806 1807 1808 1809 1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425

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Chapter 8 Writing Data in MySQL

Before creating testing example, make sure to change the upload and download option (**Options > Configuration**) on Screen Editor first. The default setting of upload and download is via **USB**. If the users need to use **Ethernet**, please change the default setting by referring to **Appendix A**.

8.1 Example

This example is used to help the users to understand how to use eServer to read the data of the register addresses \$3 and \$6 every second, record the data in MySQL via ODBC interface, and save the collected data into the specified folder (C:\Data).

8.1.1 Software Installation

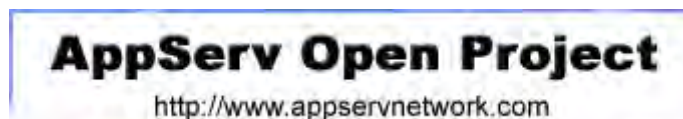
1. AppServ Introduction

AppServ is a free and full-featured software of Apache HTTP Server, MySQL, PHP, and phpMyAdmin. To download it, go to <http://www.appservnetwork.com>.

Package of AppServ

- Apache HTTP Server: It is a free and open source HTTP Server.
- MySQL: It is a relational database management system.
- PHP: It is a free and general-purpose scripting language designed for web development.
- phpMyAdmin: It is web-based open source tool written in PHP for MySQL database management.

After double clicking the appserv-win32-2.5.10.exe file downloaded from the website exe file, the following dialog box will appear.

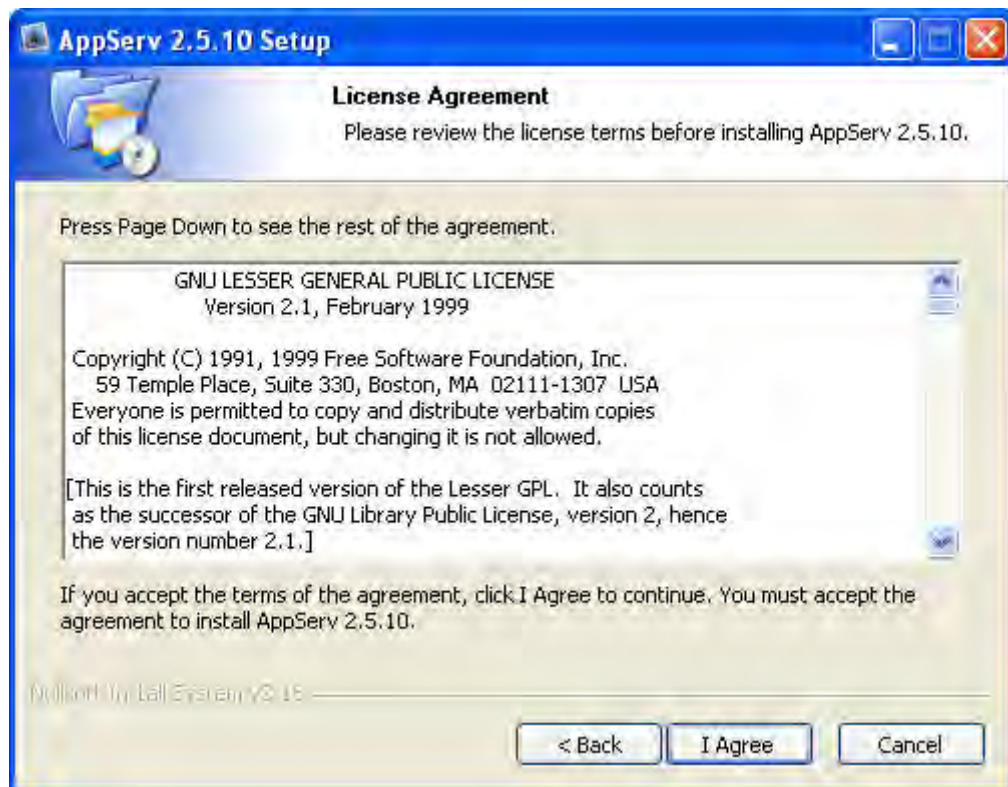




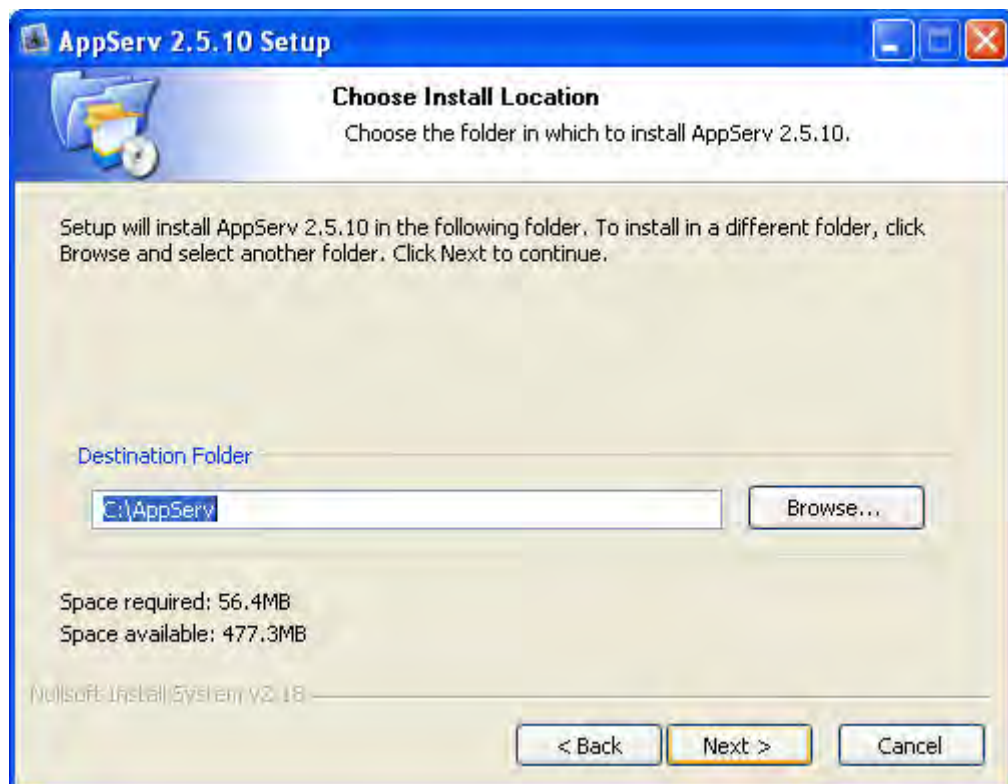
Click on **Run** button to install AppServ.



Click on **Next** button to go to the next step.



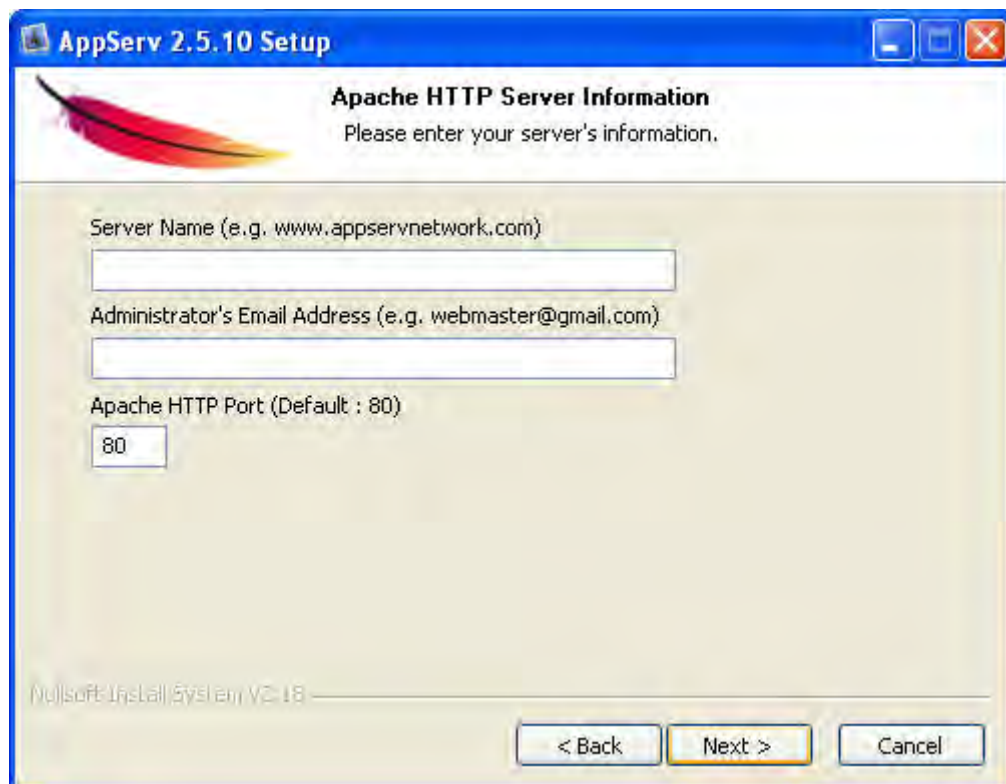
The users must read license agreement before installation. Click on **I Agree** button to continue.



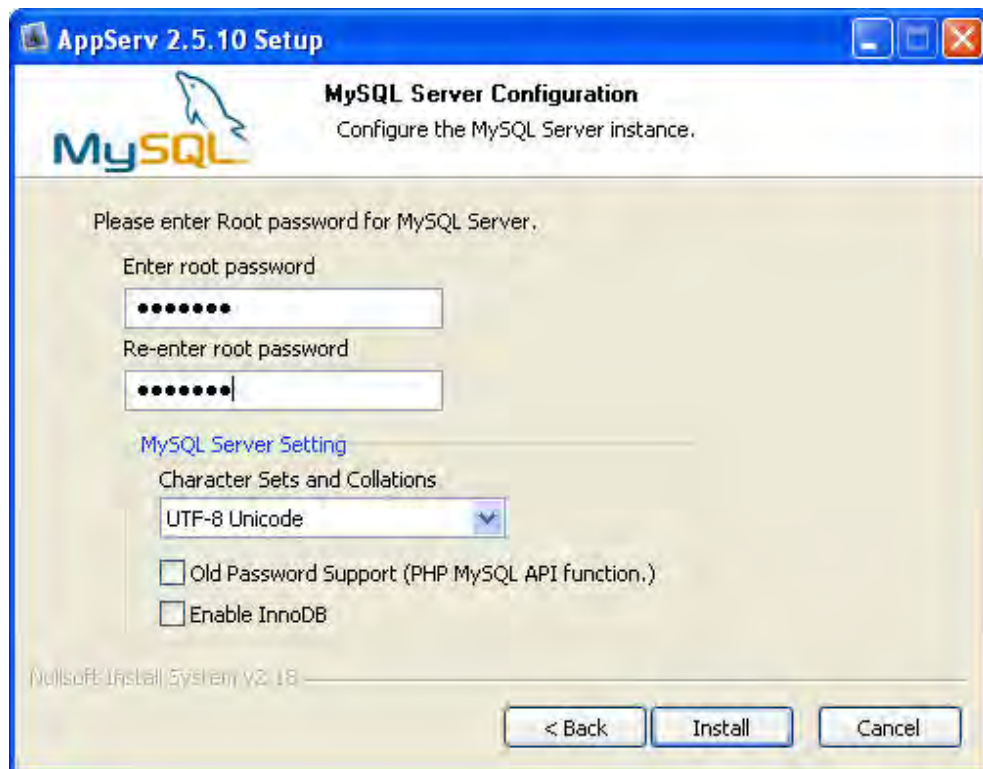
Select the default directory C:\AppServ, and click on **Next** button for the next step.
To select a directory other than the default directory, click **Browse**.



Then, select the AppServ Package Components to install, and click on **Next** button for the next step.



Specify Server Name, Administrator's Email Address and Apache HTTP port for Apache Web Server. When perform testing, the Servo Name can be specified as **localhost** directly. Click on **Next** button for MySQL Server Configuration settings



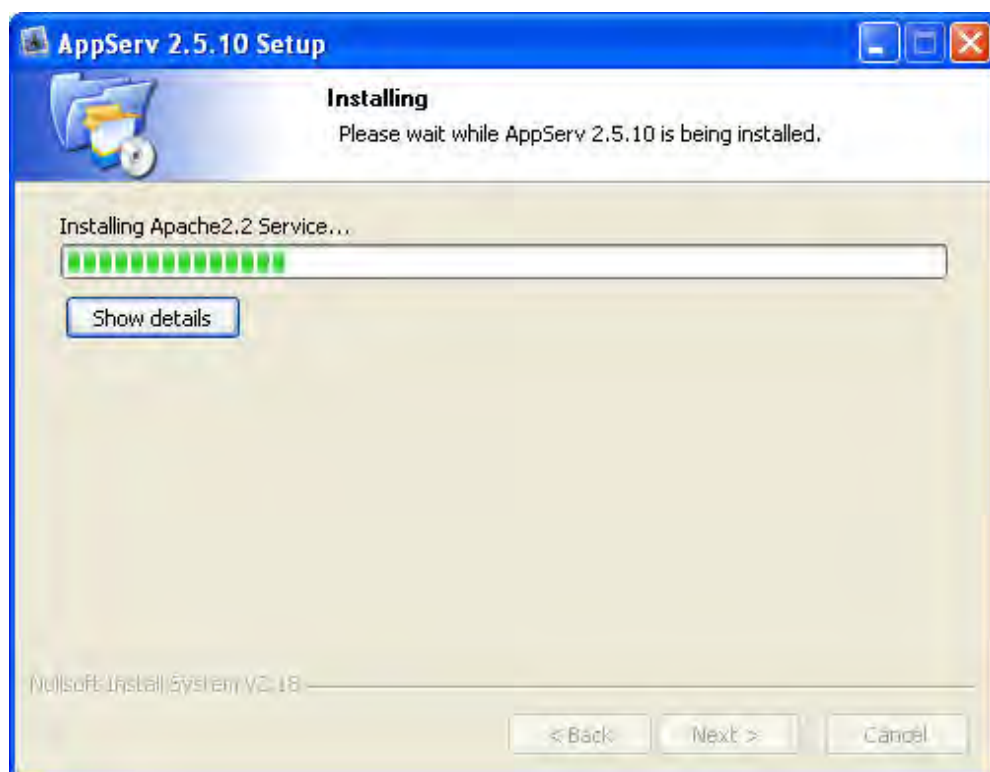
Enter root password for MySQL database and complete the settings for MySQL Server.

Character Sets and Collations: The users can select data storage language and collations from the drop-down menu.

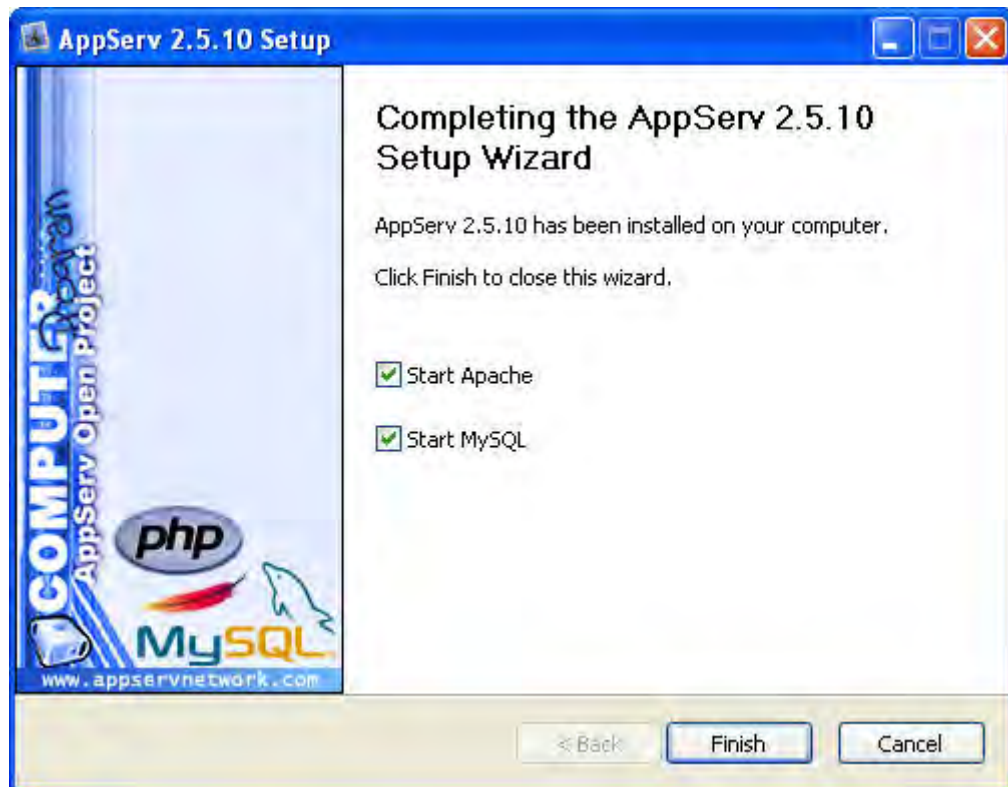
Old Password Support (PHP MySQL API function): When this option is selected, the users can code PHP code with old MySQL API.

Enable InnoDB: When InnoDB is used, ensure to select this option.

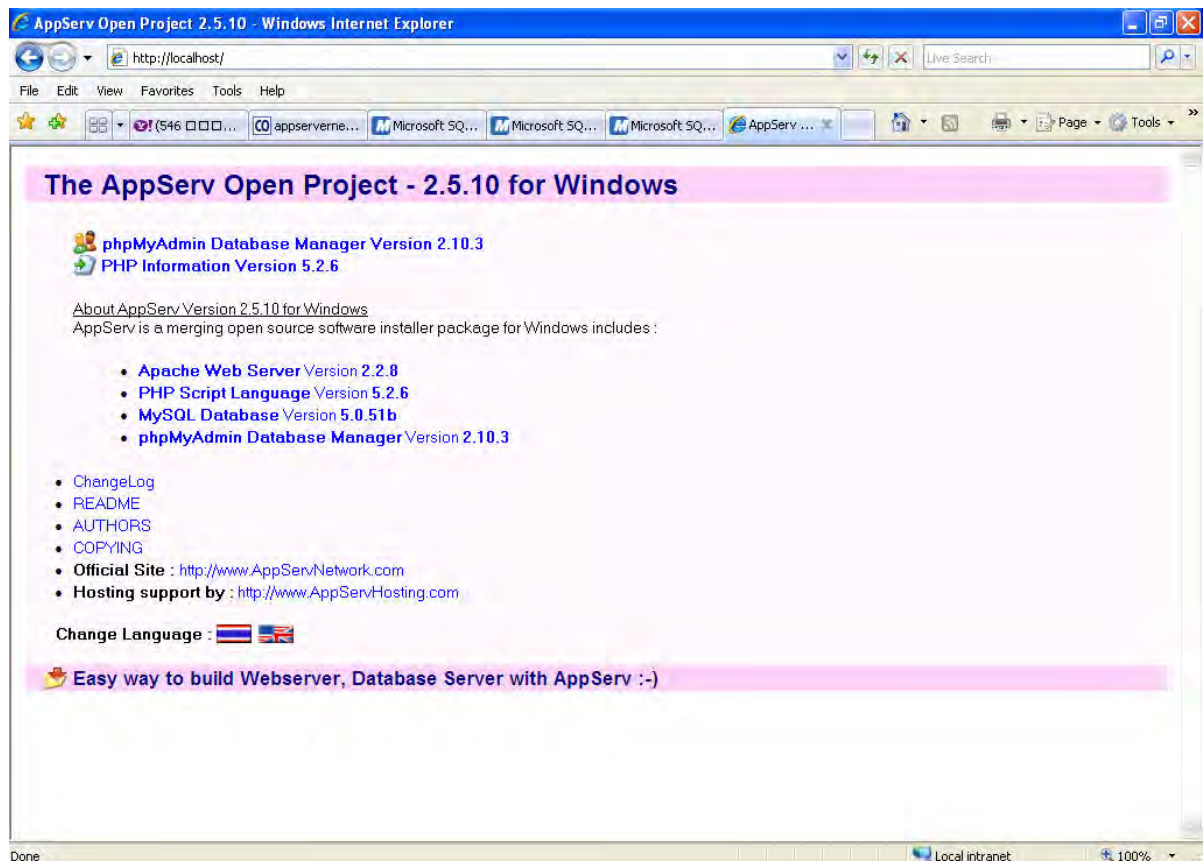
Click on **Install** button to installing Apache.



Click on **Finish** button to complete AppServ setup.



After installing AppServ, the users can view the web site by pointing a web browser to <http://localhost/>. If the following screen displays, it indicates that Apache has been installed successfully.

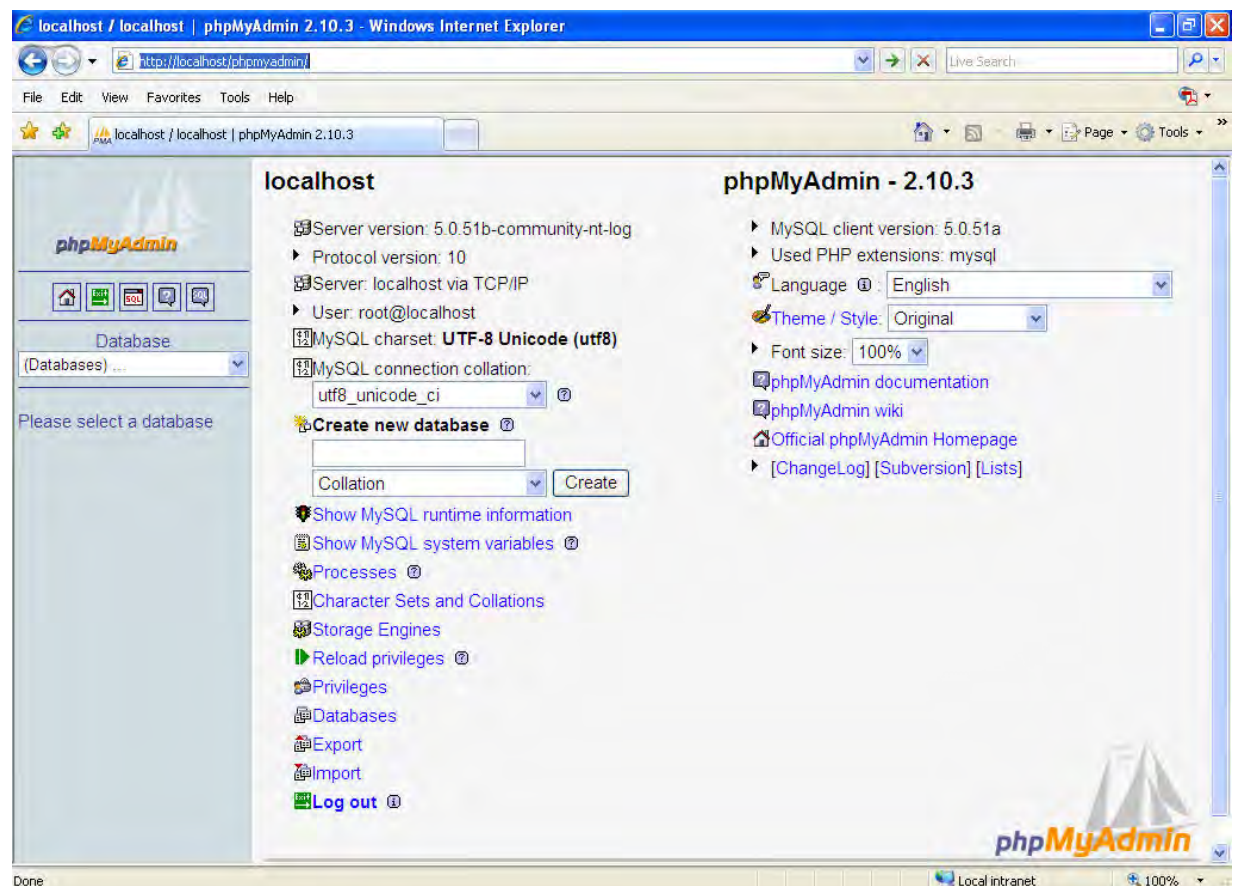


2. MySQL Settings

Use phpMyAdmin built-in AppServ to perform the relevant MySQL settings. Open the browser, type: <http://localhost/phpMyAdmin/>, a **Connect to localhost** dialog box will display. Enter **root** for username and your password for password (The default administrator account is root, but depending on your setup it may be a different user name.)

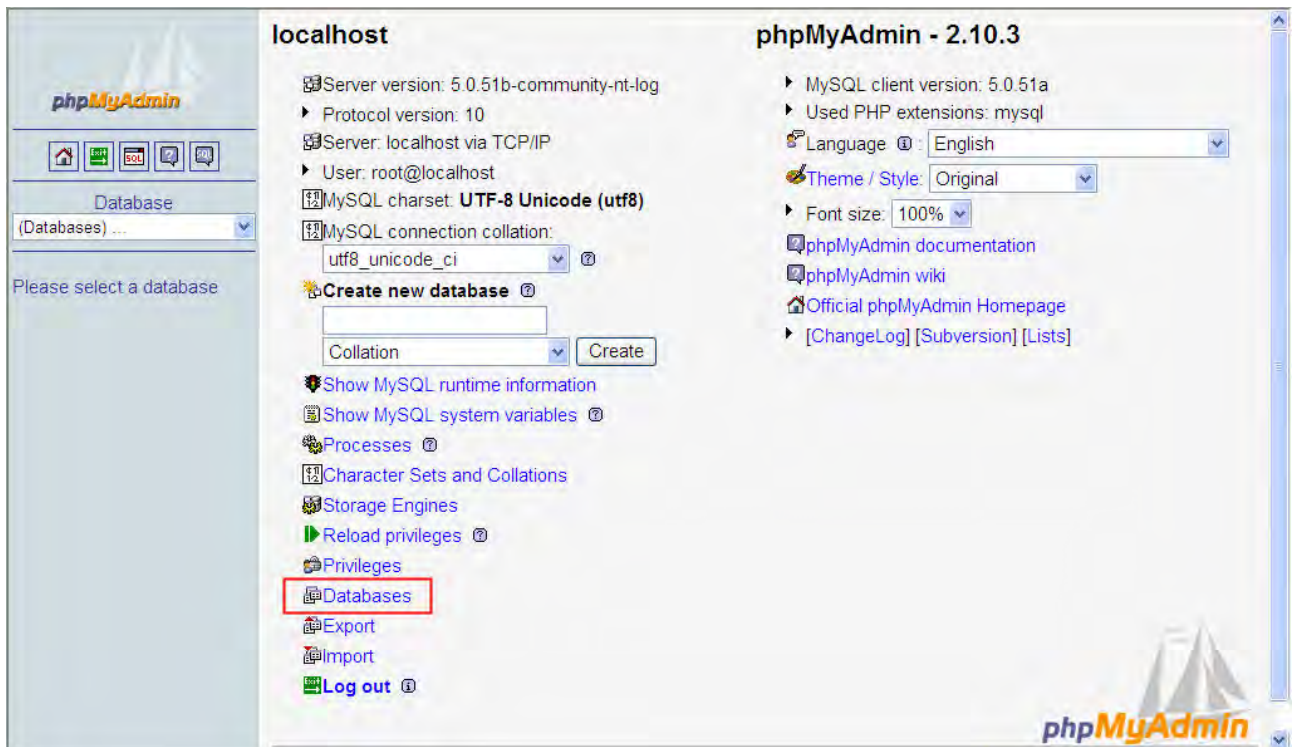


Then, it will connect to MySQL database.

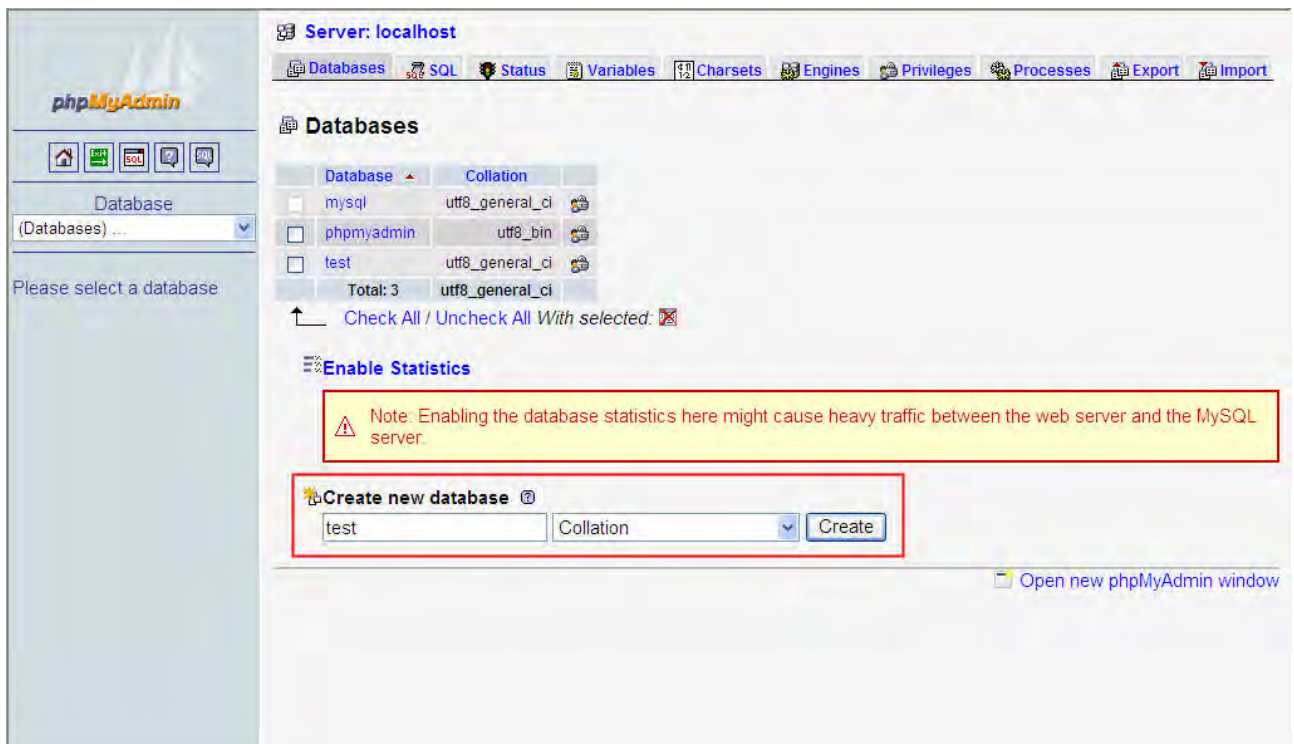


A. Create New Database

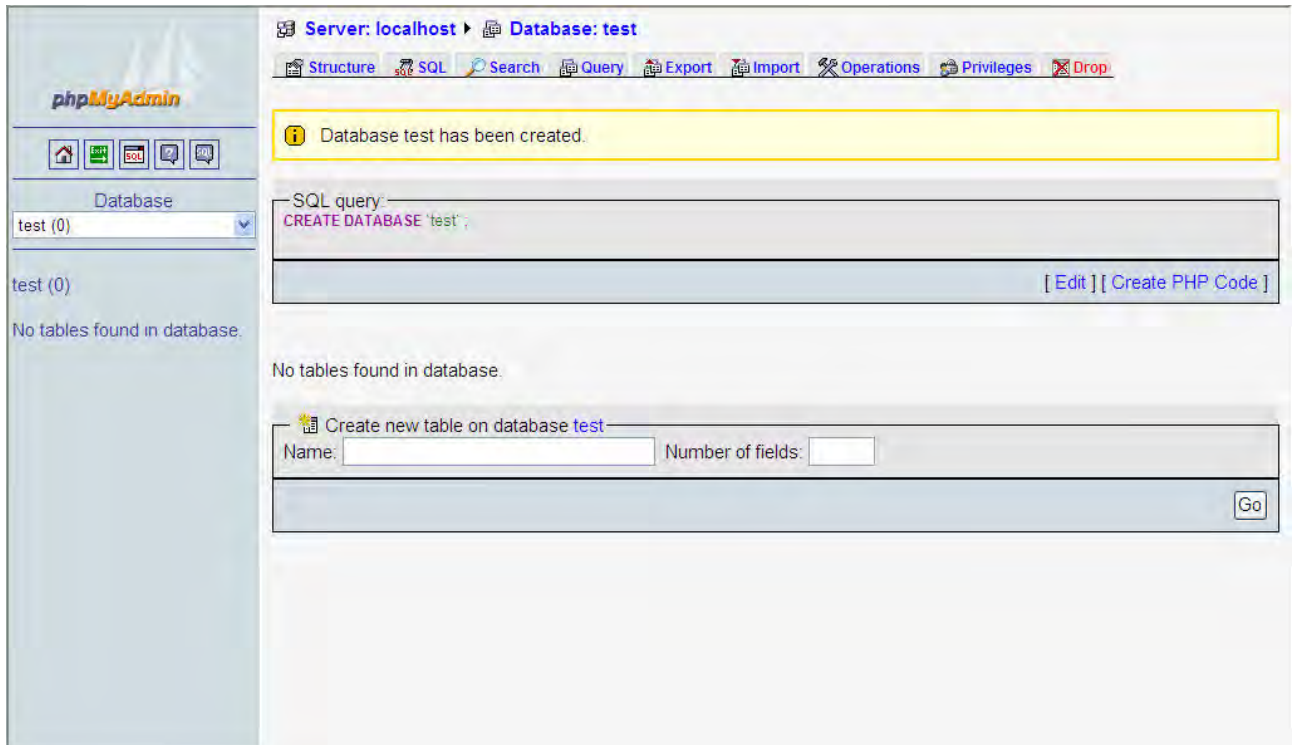
Click on **Databases** link.



Enter the name of the new database. In this case, the name of the new database is entered as **test**. Click on **Create** button for the next step.

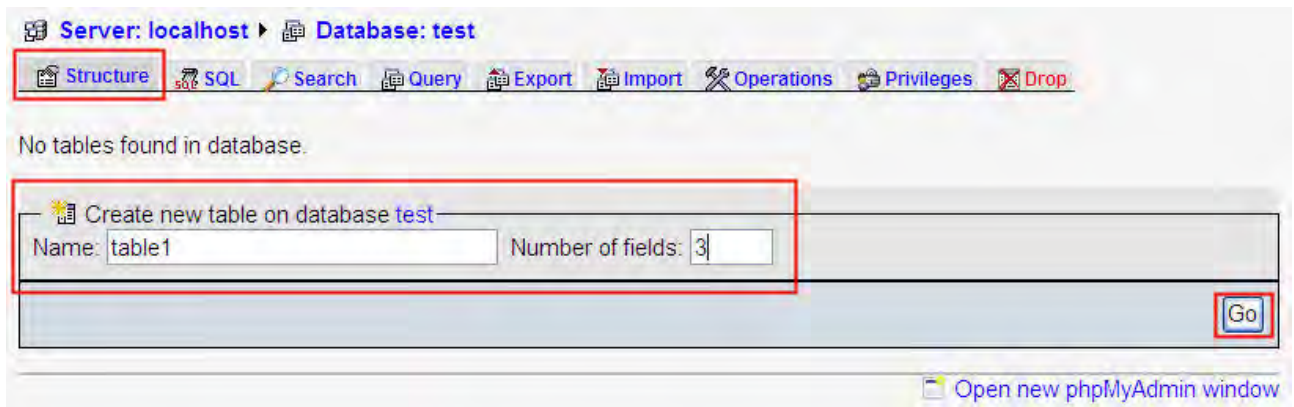


A new database has been created.



B. Create New Table

Click on **Structure** link to create new table on database. In this case, the new table is named as table1 and the number of fields is set to 3. After **Go** button is pressed, a new table on database will be created.



Complete the settings by referring to the figure below and press **Save** button to save changes.

Server: localhost ▶ Database: test ▶ Table: table1

Field	Type ?	Length/Values ¹	Collation	Attributes	Null	Def
Time	VARCHAR	50			not null	
Data1	VARCHAR	50			not null	
Data2	VARCHAR	50			not null	

Table comments:

Storage Engine: ?

Collation:

Save Or Add field(s) **Go**

¹ If field type is "enum" or "set", please enter the values using this format: 'a','b','c'...
If you ever need to put a backslash ("\") or a single quote (") amongst those values, precede it with a backslash (for example '\xyz' or 'a\b').

² For default values, please enter just a single value, without backslash escaping or quotes, using this format: a

After the table1 has been created, the screen will be shown as follows.

Server: localhost ▶ Database: test ▶ Table: table1

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

Table 'test`.`table1' has been created.

SQL query:

```
CREATE TABLE `table1` (
  `Time` VARCHAR(50) NOT NULL,
  `Data1` VARCHAR(50) NOT NULL,
  `Data2` VARCHAR(50) NOT NULL
) ENGINE = MYISAM;
```

[Edit] [Create PHP Code]

Field	Type	Collation	Attributes	Null	Default	Extra	Action
<input type="checkbox"/> Time	varchar(50)	utf8_general_ci		No			
<input type="checkbox"/> Data1	varchar(50)	utf8_general_ci		No			
<input type="checkbox"/> Data2	varchar(50)	utf8_general_ci		No			

↑ [Check All](#) / [Uncheck All](#) With selected:

[Print view](#) [Propose table structure](#)

Add field(s) ☒ At End of Table ☐ At Beginning of Table ☐ After **Go**

Indexes: ?

No index defined!

Space usage		Row Statistics	
Type	Usage	Statements	Value
Data	0 B		
Index	0 B		

C. Create New User

Click on **Privileges** link to open User overview page.

The screenshot shows the phpMyAdmin 2.10.3 interface. On the left, under the 'localhost' server, there is a sidebar with various links. The 'Privileges' link is highlighted with a red box. The main area shows server information for 'localhost' and a sidebar with configuration options like 'Language', 'Theme / Style', and 'Font size'.

Click on **Add a new User** link to display the add new user page

The screenshot shows the 'User overview' page in phpMyAdmin. It features a table of users with columns for 'User', 'Host', 'Password', 'Global privileges', and 'Grant'. Below the table, there is a link 'Add a new User' which is highlighted with a red box. There is also a section for 'Remove selected users' with a 'Go' button.

User	Host	Password	Global privileges	Grant
<input type="checkbox"/> Any	%	--	USAGE	No
<input type="checkbox"/> Any	localhost	No	USAGE	No
<input type="checkbox"/> Any	production.mysql.com	No	USAGE	No
<input type="checkbox"/> root	127.0.0.1	No	ALL PRIVILEGES	Yes
<input type="checkbox"/> root	localhost	Yes	ALL PRIVILEGES	Yes
<input type="checkbox"/> root	production.mysql.com	No	ALL PRIVILEGES	Yes

Login Information

User name: Use text field:

Host: Use text field:

Password: Use text field:

Re-type:

Generate Password:

Login Information:

User name: Enter user name **root**

Host: Select **Any host** from the drop down menu and insert a % code.

Password: Enter the desired password

Re-type: Re-enter the desired password

General Password:

- Click on **Generate** button to automatically generate a password.
- Click on **Copy** button to insert the password into the fields of Password and Re-type.

Scroll the screen down and click on **Check All** link to select all privileges. Then, click on **GO** button to create a new user.

Global privileges ([Check All](#) [Uncheck All](#))

Note: MySQL privilege names are expressed in English

Data	Structure	Administration
<input checked="" type="checkbox"/> SELECT	<input checked="" type="checkbox"/> CREATE	<input checked="" type="checkbox"/> GRANT
<input checked="" type="checkbox"/> INSERT	<input checked="" type="checkbox"/> ALTER	<input checked="" type="checkbox"/> SUPER
<input checked="" type="checkbox"/> UPDATE	<input checked="" type="checkbox"/> INDEX	<input checked="" type="checkbox"/> PROCESS
<input checked="" type="checkbox"/> DELETE	<input checked="" type="checkbox"/> DROP	<input checked="" type="checkbox"/> RELOAD
<input checked="" type="checkbox"/> FILE	<input checked="" type="checkbox"/> CREATE TEMPORARY TABLES	<input checked="" type="checkbox"/> SHUTDOWN
	<input checked="" type="checkbox"/> CREATE VIEW	<input checked="" type="checkbox"/> SHOW DATABASES
	<input checked="" type="checkbox"/> SHOW VIEW	<input checked="" type="checkbox"/> LOCK TABLES
	<input checked="" type="checkbox"/> CREATE ROUTINE	<input checked="" type="checkbox"/> REFERENCES
	<input checked="" type="checkbox"/> ALTER ROUTINE	<input checked="" type="checkbox"/> REPLICATION CLIENT
	<input checked="" type="checkbox"/> EXECUTE	<input checked="" type="checkbox"/> REPLICATION SLAVE
		<input checked="" type="checkbox"/> CREATE USER

Resource limits

Note: Setting these options to 0 (zero) removes the limit.

MAX QUERIES PER HOUR

MAX UPDATES PER HOUR

MAX CONNECTIONS PER HOUR

MAX USER_CONNECTIONS

A conformation message will be displayed as follows.

Server: localhost

Databases SQL Status Variables Charsets Engines Privileges Processes Export Import

You have added a new user.

SQL query:

```
CREATE USER 'root'@'%' IDENTIFIED BY '*****';

GRANT ALL PRIVILEGES ON * . * TO 'root'@'%' IDENTIFIED BY '*****' WITH GRANT OPTION MAX_QUERIES_PER_HOUR 0
MAX_CONNECTIONS_PER_HOUR 0 MAX_UPDATES_PER_HOUR 0 MAX_USER_CONNECTIONS 0;
```

[Edit] [Create PHP Code]

User 'root'@'%' : Edit Privileges

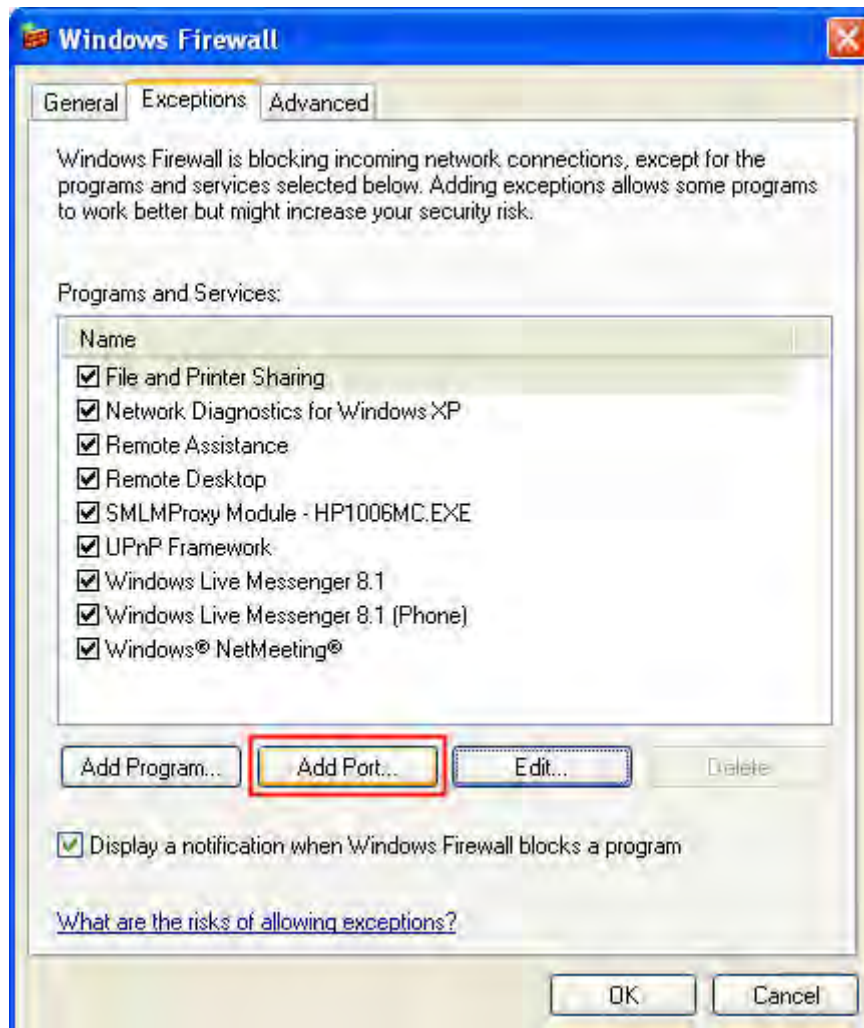
Global privileges ([Check All](#) / [Uncheck All](#))

Note: MySQL privilege names are expressed in English

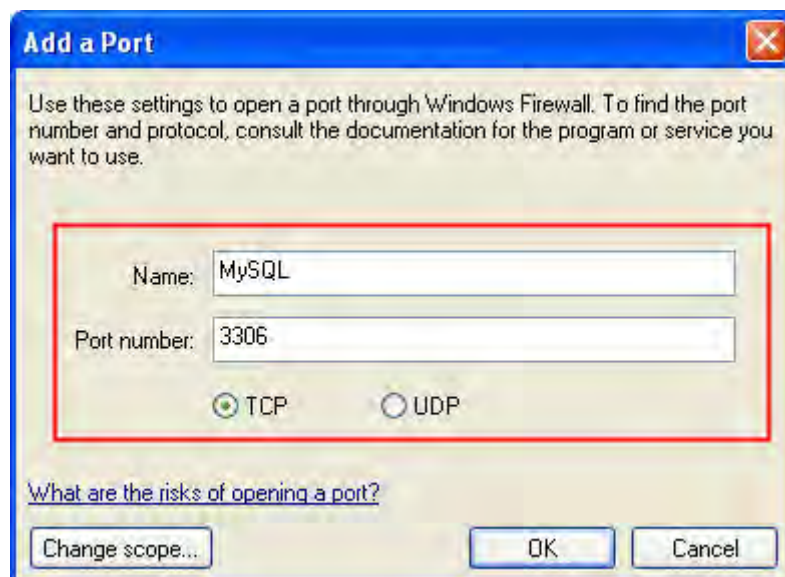
Data	Structure	Administration
<input checked="" type="checkbox"/> SELECT	<input checked="" type="checkbox"/> CREATE	<input checked="" type="checkbox"/> GRANT
<input checked="" type="checkbox"/> INSERT	<input checked="" type="checkbox"/> ALTER	<input checked="" type="checkbox"/> SUPER
<input checked="" type="checkbox"/> UPDATE	<input checked="" type="checkbox"/> INDEX	<input checked="" type="checkbox"/> PROCESS
<input checked="" type="checkbox"/> DELETE	<input checked="" type="checkbox"/> DROP	<input checked="" type="checkbox"/> RELOAD
<input checked="" type="checkbox"/> FILE	<input checked="" type="checkbox"/> CREATE TEMPORARY TABLES	<input checked="" type="checkbox"/> SHUTDOWN

3. Setting Windows Firewall

Click **Start** and then click **Control Panel**. In the **Control Panel**, click **Windows Security Center > Windows Firewall**. Then, click on the **Exceptions** tab.



Click **Add Port** button and the following **Add a Port** dialog box will appear.



In the Add a Port dialog box, type MySQL in the Name text field and type the port number of the instance of the Database Engine, such as 3306 for the default instance in the Port number text field. Ensure that TCP is selected and click OK to complete the settings.

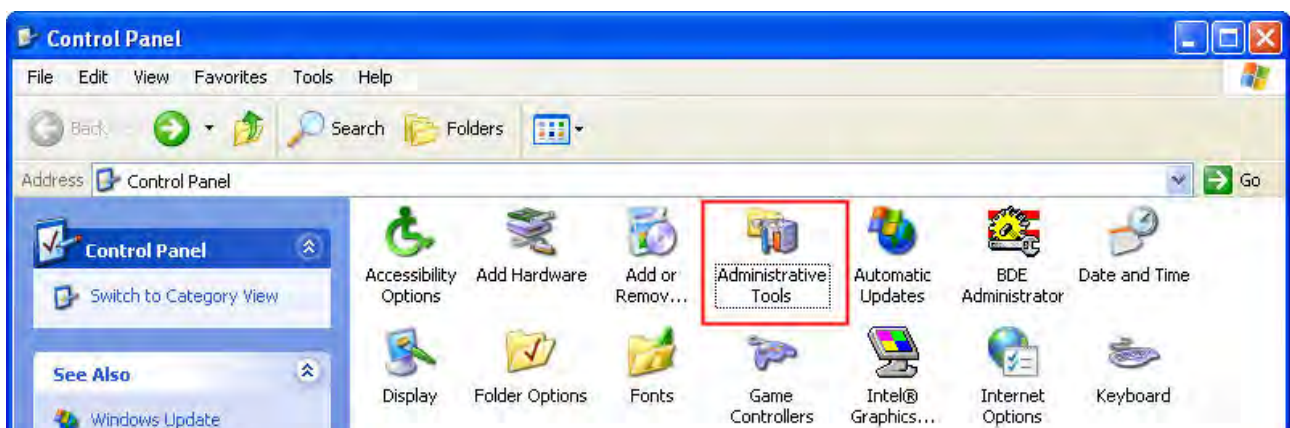
4. Connector/ODBC Installation

Connector/ODBC is a standardized database driver which can be downloaded from MySQL website at <http://dev.mysql.com/downloads/connector/odbc/5.1.html>.

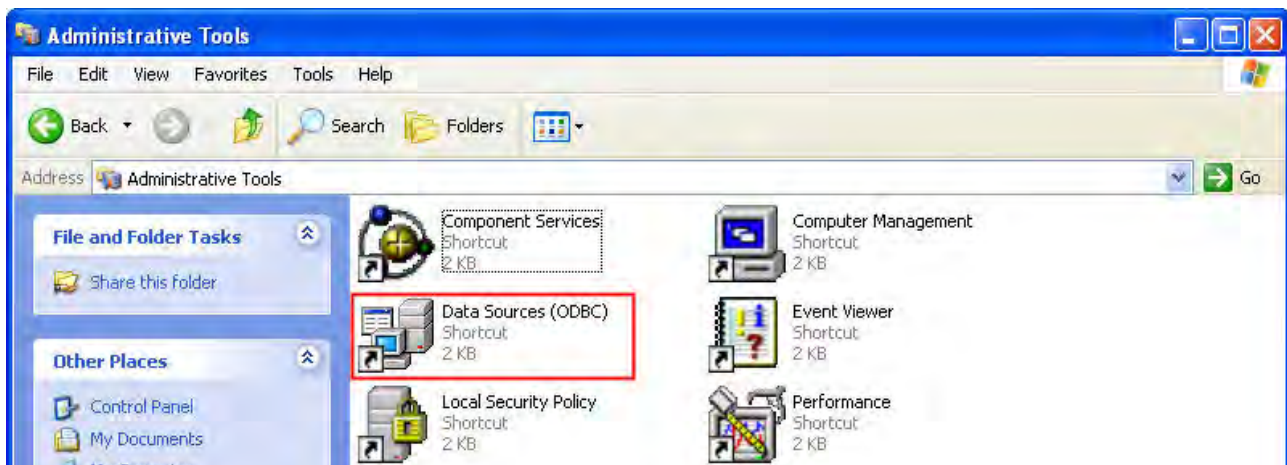


5. ODBC Setup

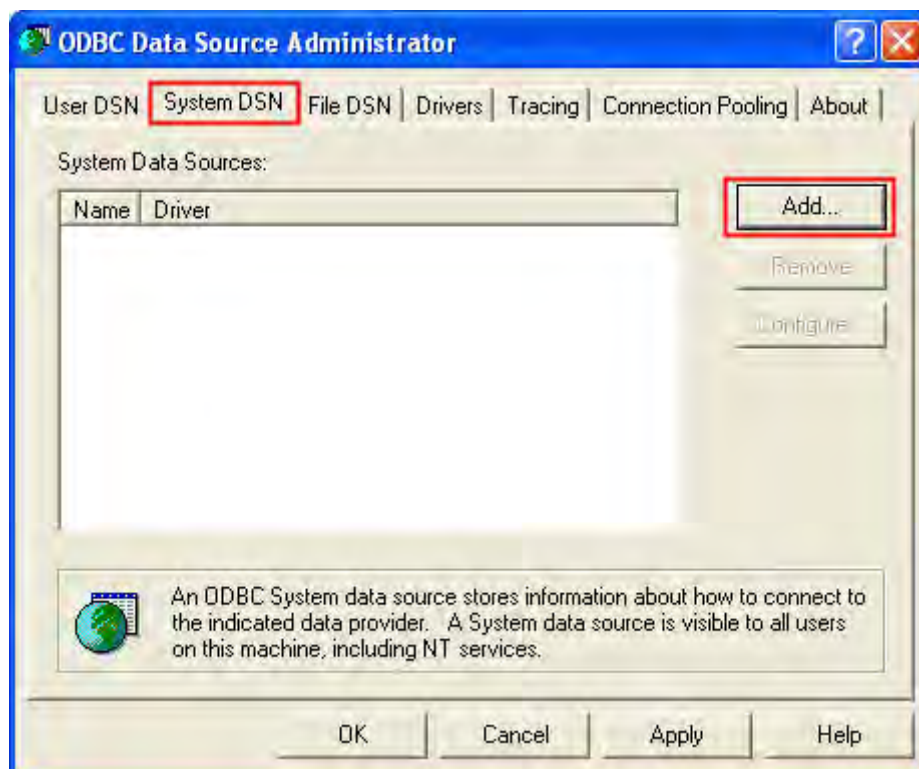
In the **Control Panel**, double-click **Administrative Tools**.



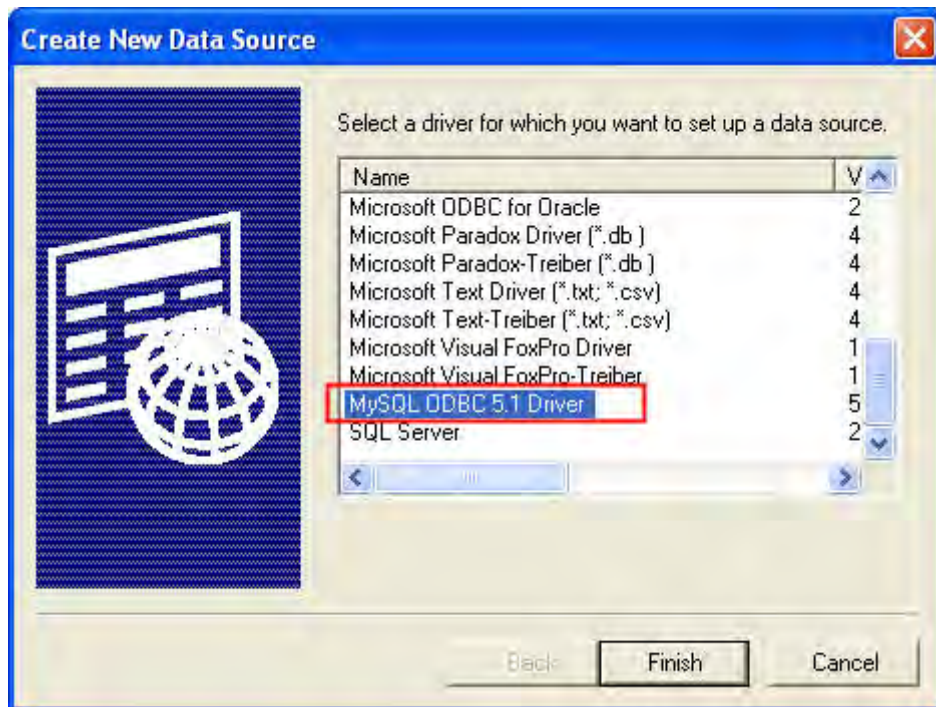
In the **Administrative Tools**, double-click **Data Sources (ODBC)**.



In the **ODBC Data Source Administrator** dialog box, select **System DSN** tab and click on **Add** button to add system data source.



Select **MySQL ODBC 5.1 Driver** and then click on **Finish** button.



Now specify the Connection Parameters as mentioned in the below dialog.



Connection Parameters:

Data Source Name: Enter ODBC data source name **eServer** or enter the name of the data source you want to access.

Description: Enter some text to identify the connection.

Server: Enter the default **localhost** or the name of MySQL server host that the users want to access.

User: Enter user name **root** to use for this connection.

Password: Enter the corresponding password for this connection.

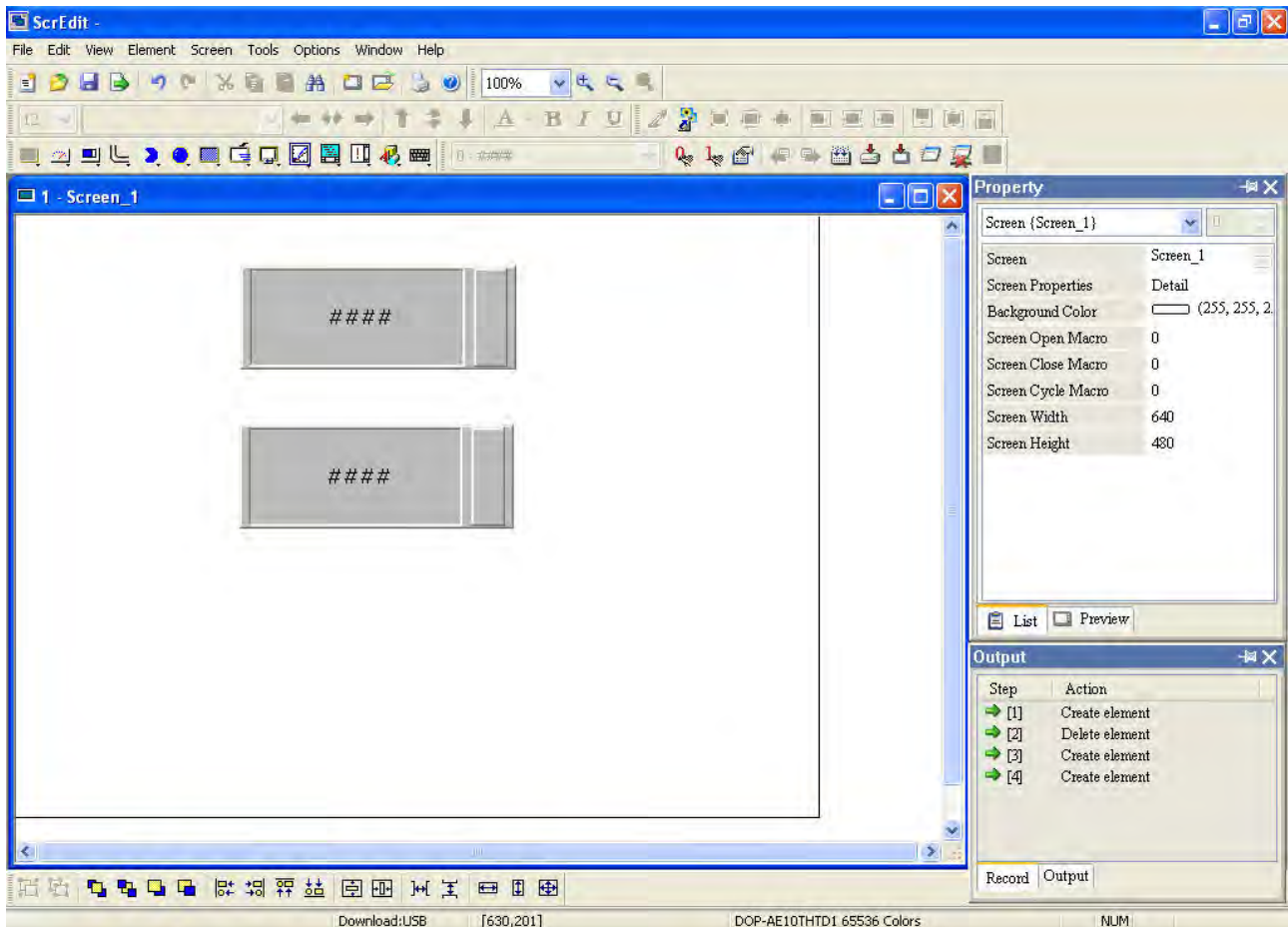
Database: The list of databases that the user has permissions to access will be shown automatically.

Click on **Test** button to verify the connection. If the test succeeds, the figure shown below will appear on the screen to indicate that MySQL connection is now available to use. At this time, click on **OK** button to complete the settings. If the test does not succeed, please review the settings.

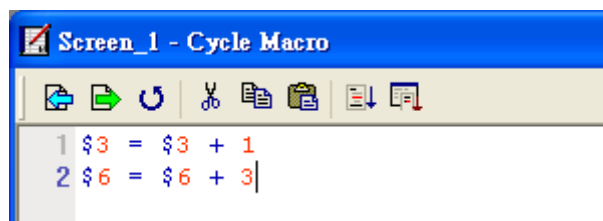


8.1.2 Create HMI Project File

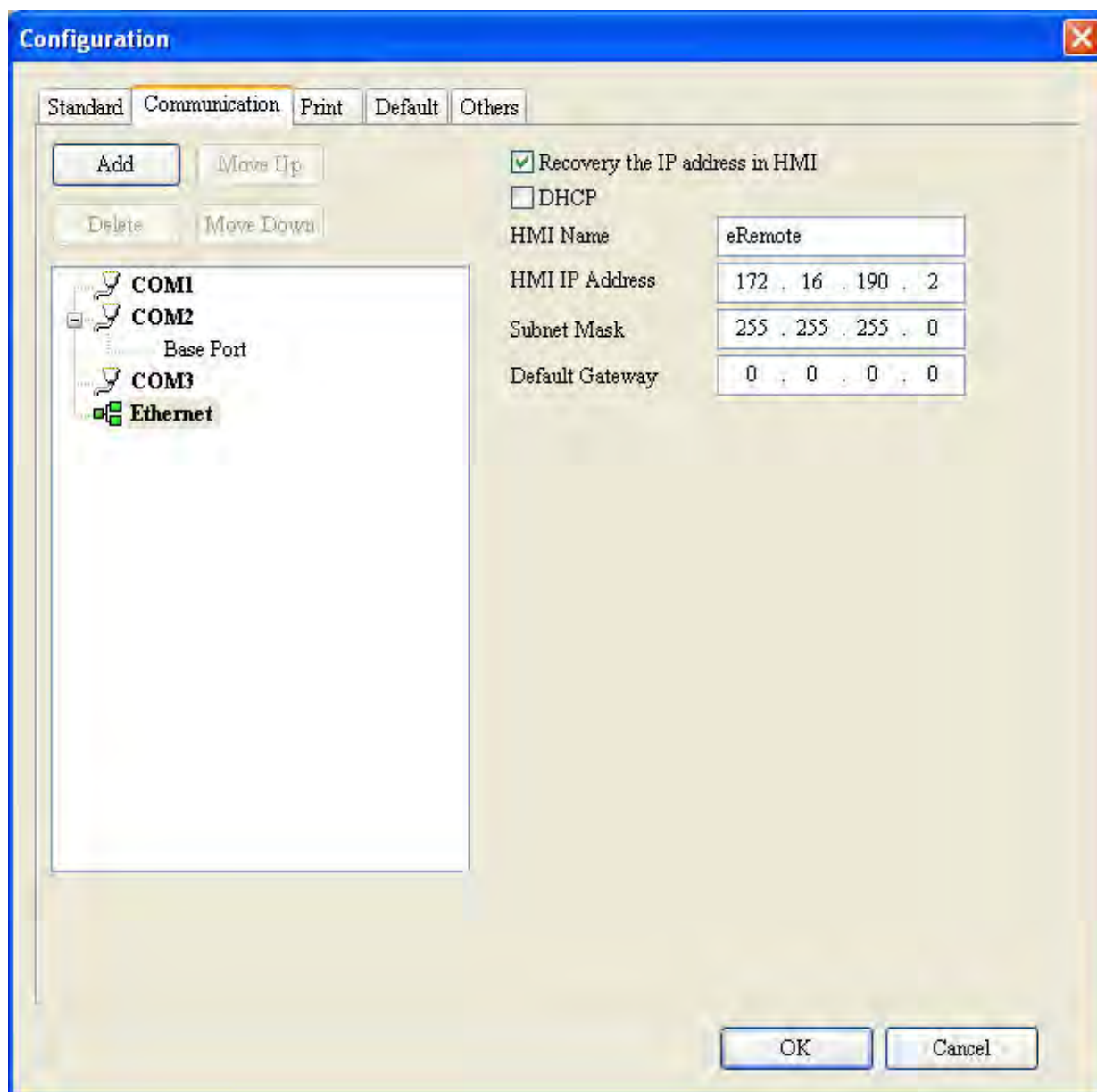
Start Screen Editor software program and click **File > New** or click **New** icon to create a new project. Then, click **Element > Input > Numeric Entry** to create two numeric entry elements (\$3 and \$6) on the screen. In this case, 10 inches color AE type DOP series HMI is used.



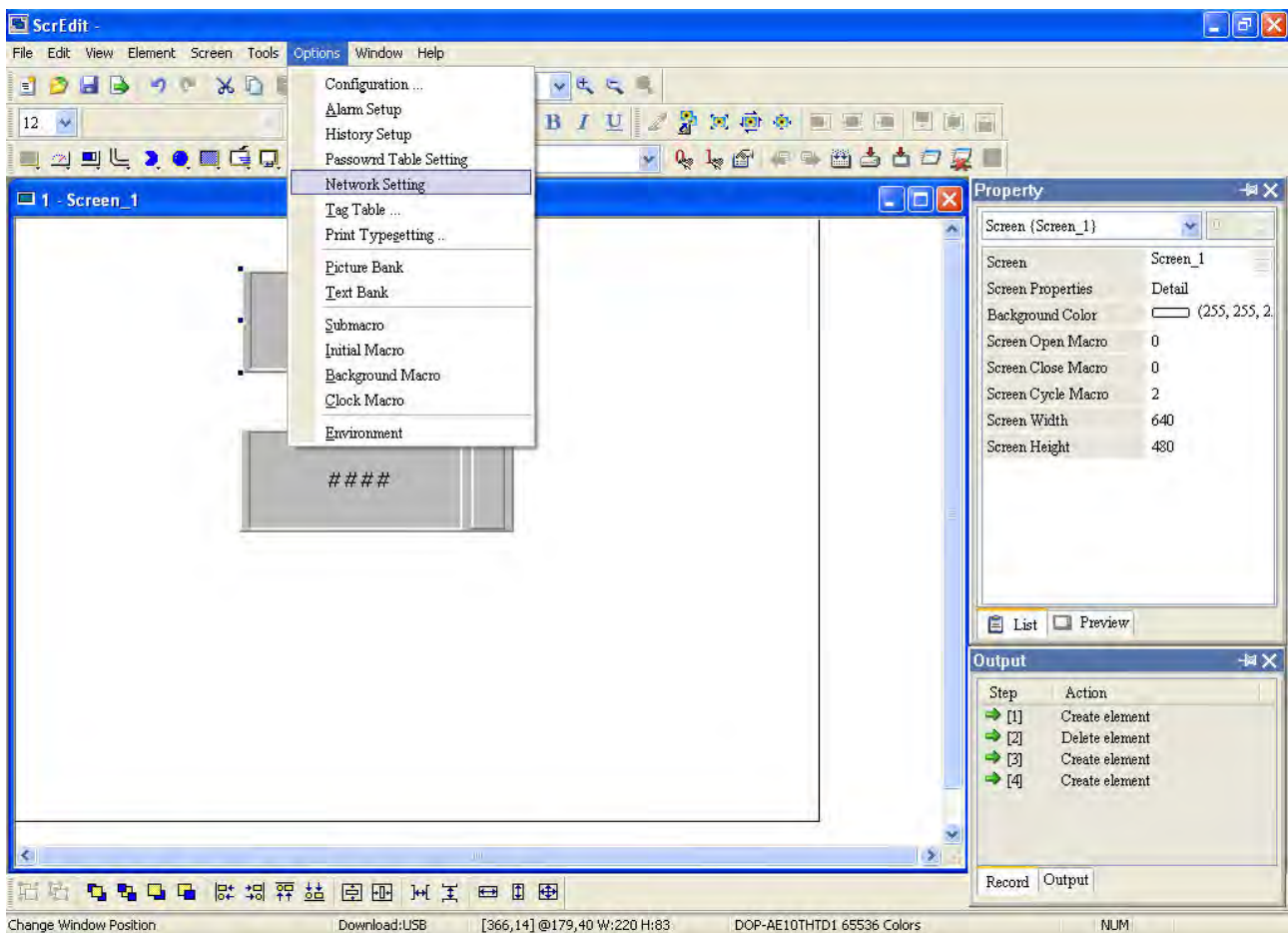
Use Screen Cycle Macro and enter the following commands in macro command window.



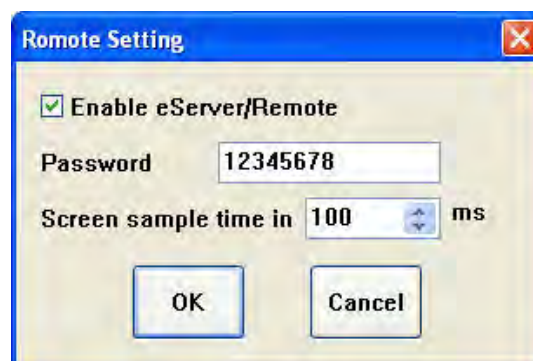
Click **Options > Configuration** and use **Communication** tab to select **Ethernet** and complete HMI networking settings shown as the figure below. Then, press **OK** button to finish the settings.




Next, click **Options > Network Setting**.



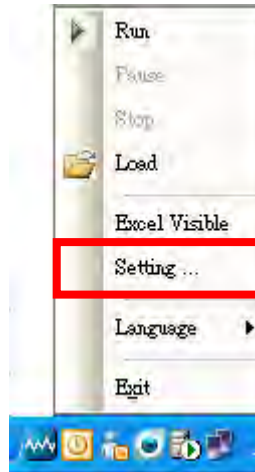
The following **Remote Setting** dialog box will appear. Check the check box before **Enable eServer/Remote** and set a password for network communication. After **OK** button is pressed, HMI networking is completed. Compile the edited project file at the end of the programming and the edited project file could be transferred to HMI.



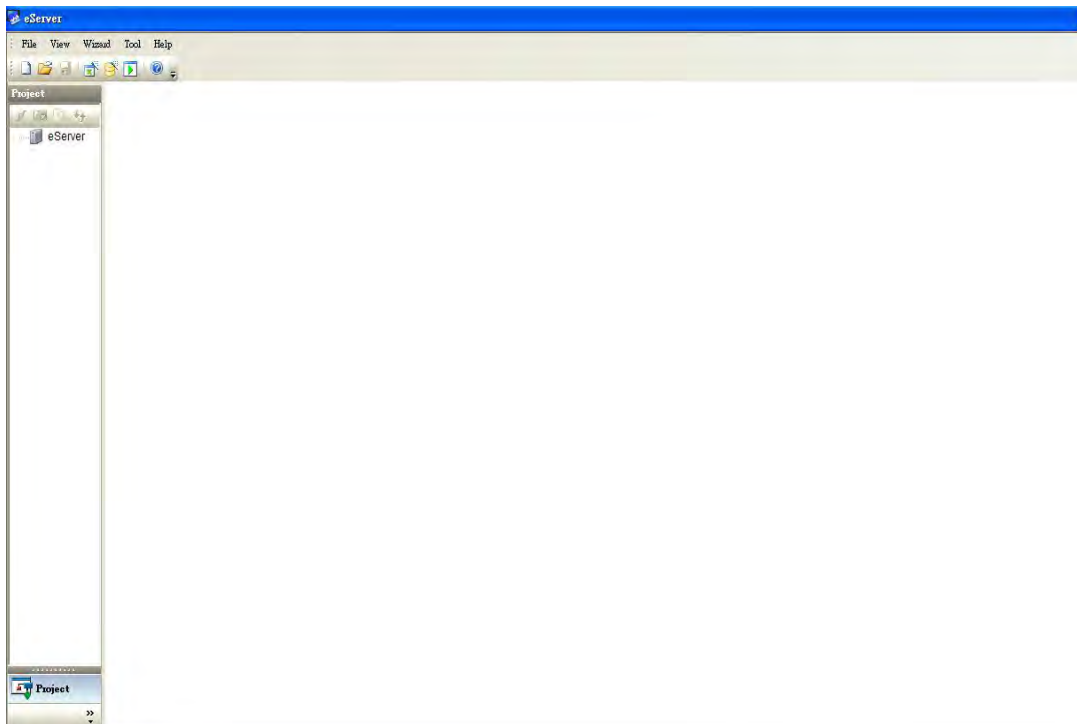
8.1.3 eServer Setting

1. After eServer is enabled, eServer  icon will appear at the bottom right of Windows screen.

Right-click this icon and select **Setting** option from the pop-up menu.




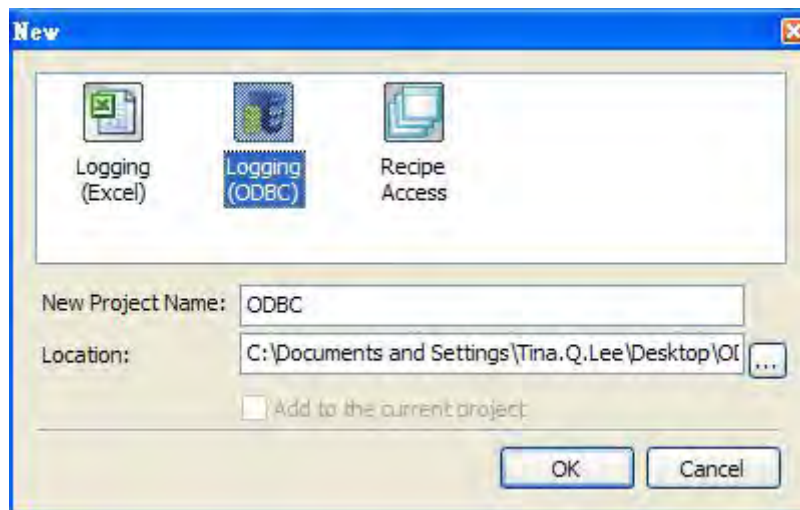
2. Then, open eServer window.



3. Click **File > New** or click  icon to create a new project file.

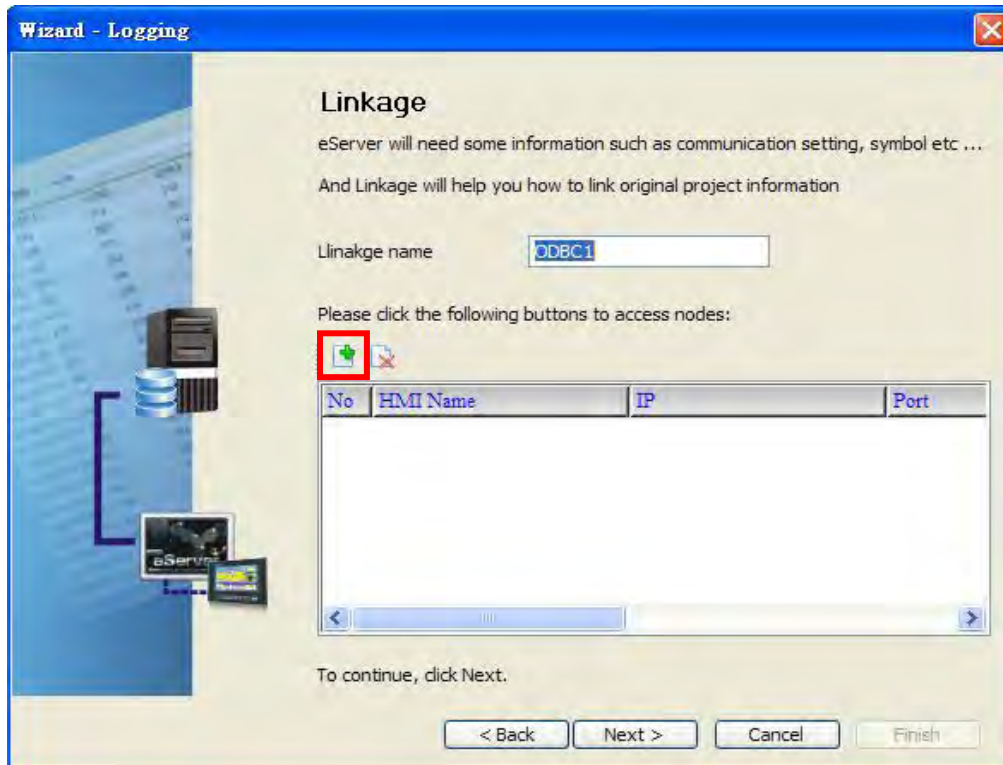


4. Select  icon to enable ODBC Logging Wizard.

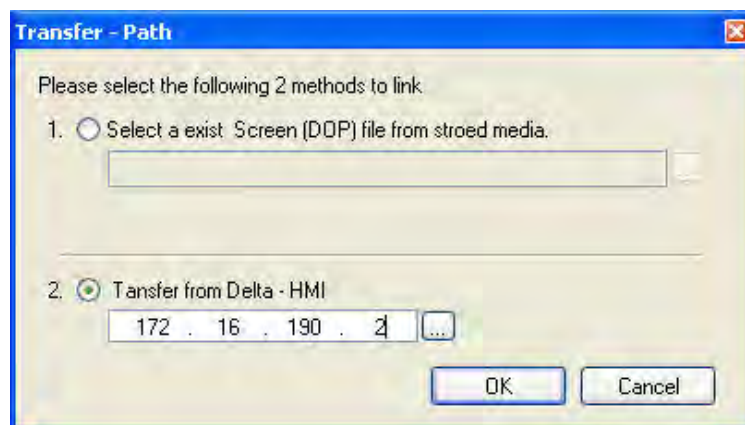


Press **Next** button to go to next step.

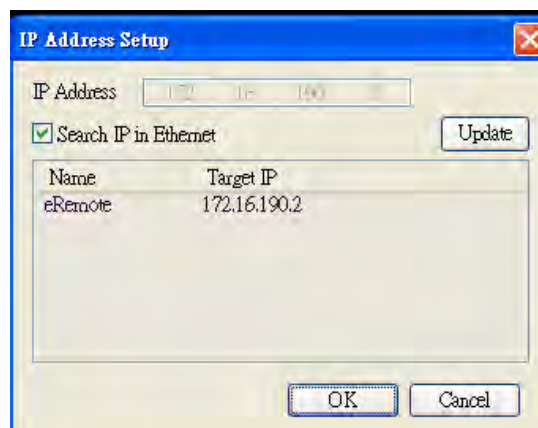
5. Click **New** icon to access nodes (link to HMI).



Choose **Transfer from Delta - HMI** option to transfer the HMI screen project file via network communication directly.



Press **OK** button to go to next step.



Press **OK** button to go to next step.

6. ODBC Data Source Setting: Create an ODBC Data Source pointing to your database.
Please refer to the following settings.

Wizard - Logging

ODBC
Please indicate the following items

Chooses a data source (DSN) and input user name and password

ODBC Data Source: eServer

User Name: root

Password: *****

Database Driver: MySQL

Table: table1

Time and Date	Table	Field	Detail
<input checked="" type="checkbox"/> Stamp	table1	Time	%m%d%y%H%M%S

To continue, click Next.

< Back Next > Cancel Finish

Press **Next** button to go to next step.

7. Register Setting: Set the register address of the sampling data.

Wizard - Logging

Register Setting
Please input logging address in the following Cell(s)

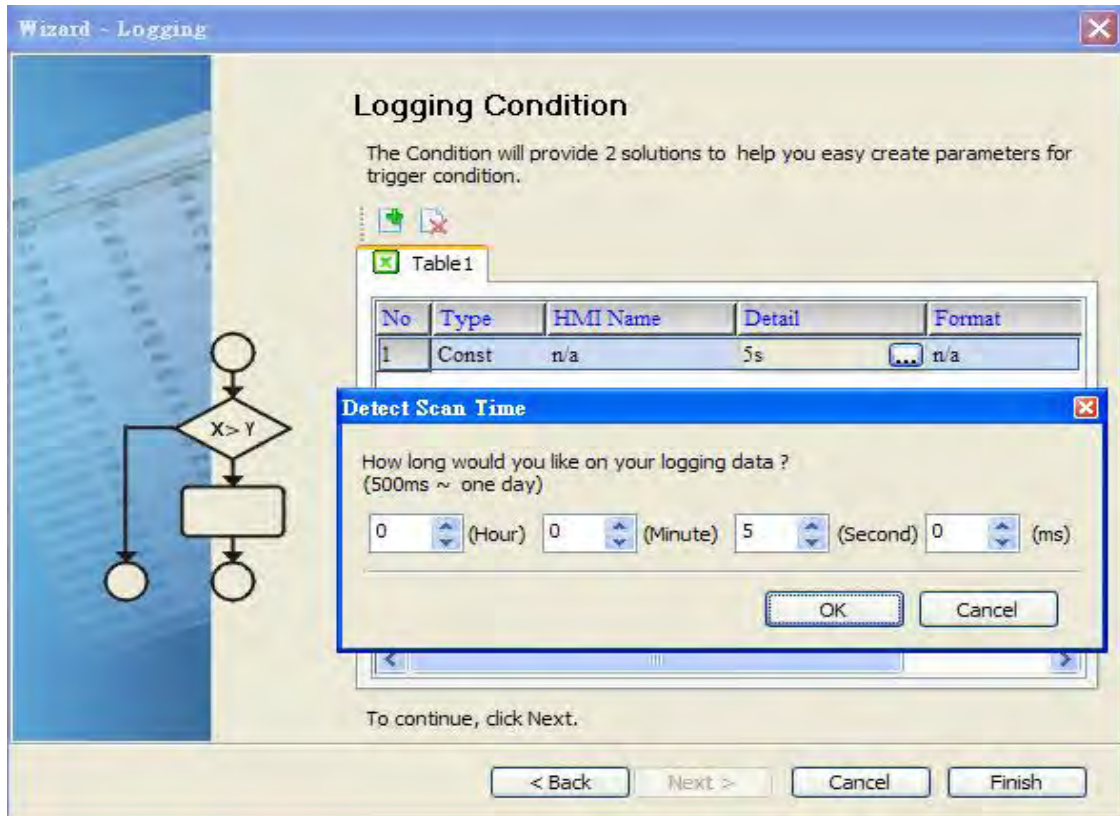
Add Delete


No	Table	Field	HMI Name	Address	Form
1	table1	Data1	HMI	\$3	Unsig
2	table1	Data2	HMI	\$6	Unsig

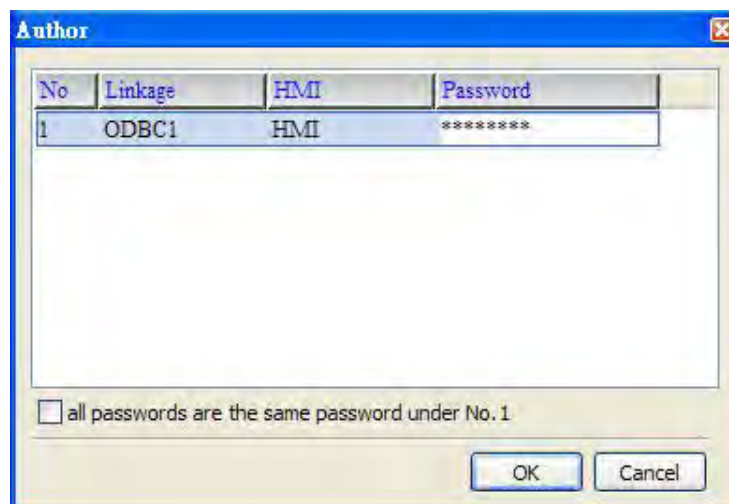
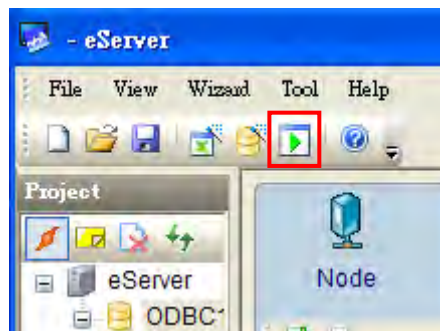
To continue, click Next.


< Back Next > Cancel Finish

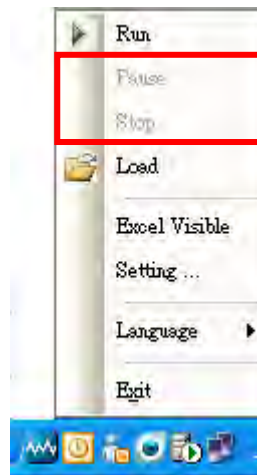
8. Set the sampling conditions to constant 5s. Press **Next** button to continue.



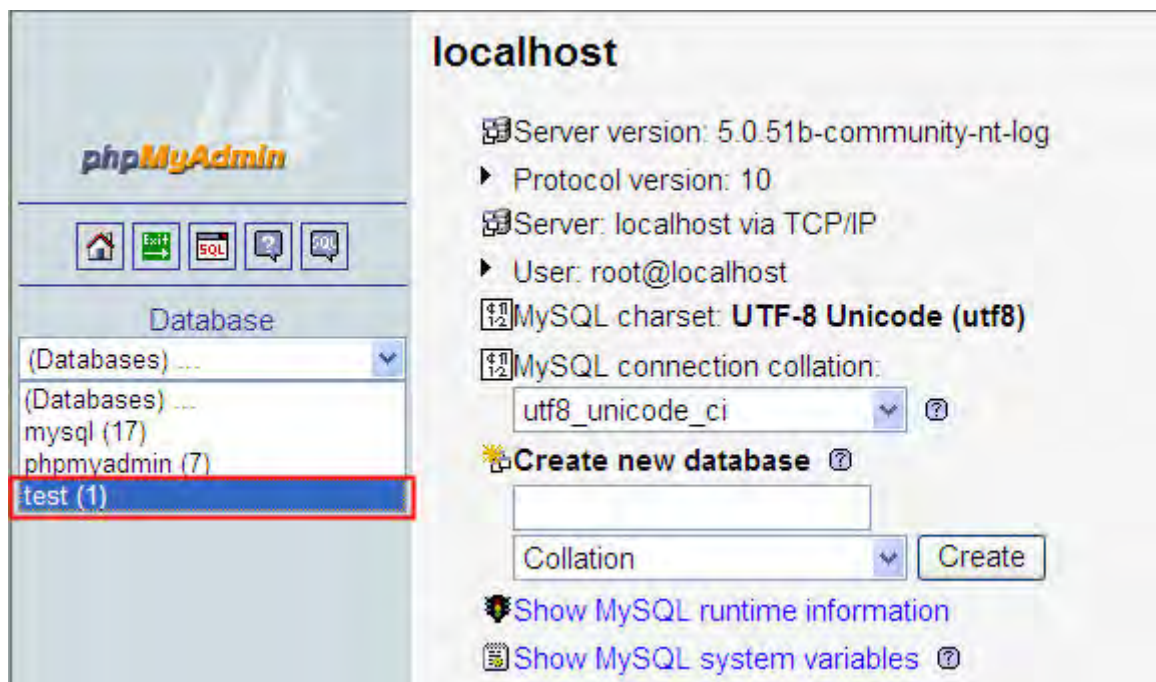
9. Press  icon. After the password is entered, the system will start sampling operation, i.e. writing data in MySQL Server.



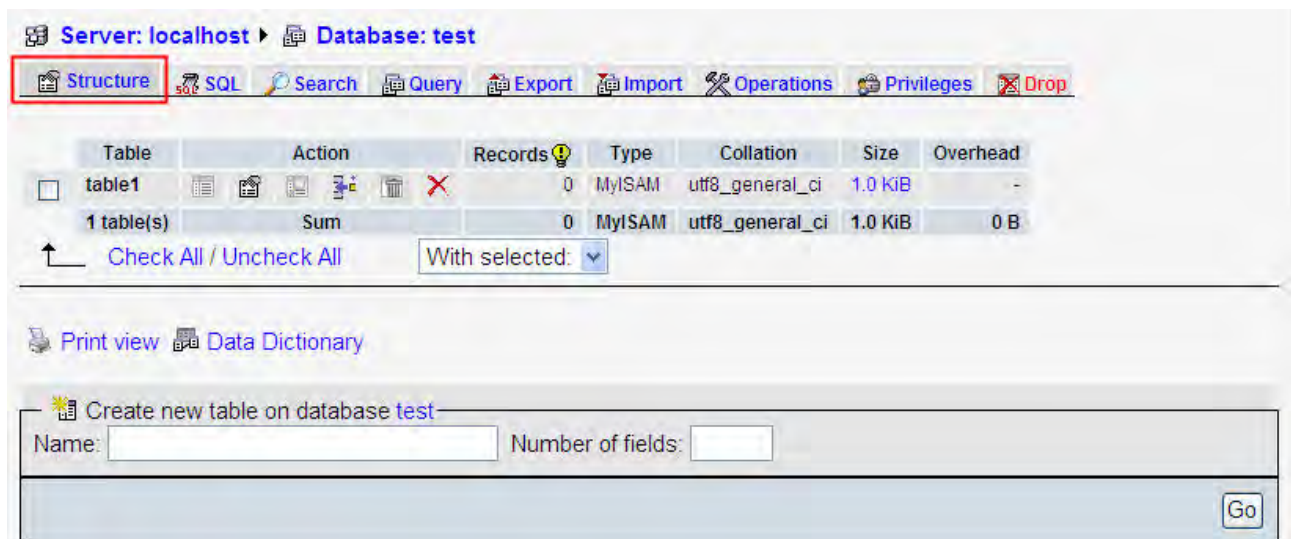
10. If the users want to pause or stop the sampling operation, only right-click eServer  icon at the bottom right of Windows screen and select Pause or Stop option from the pop-up menu, the sampling operation will pause and stop immediately.



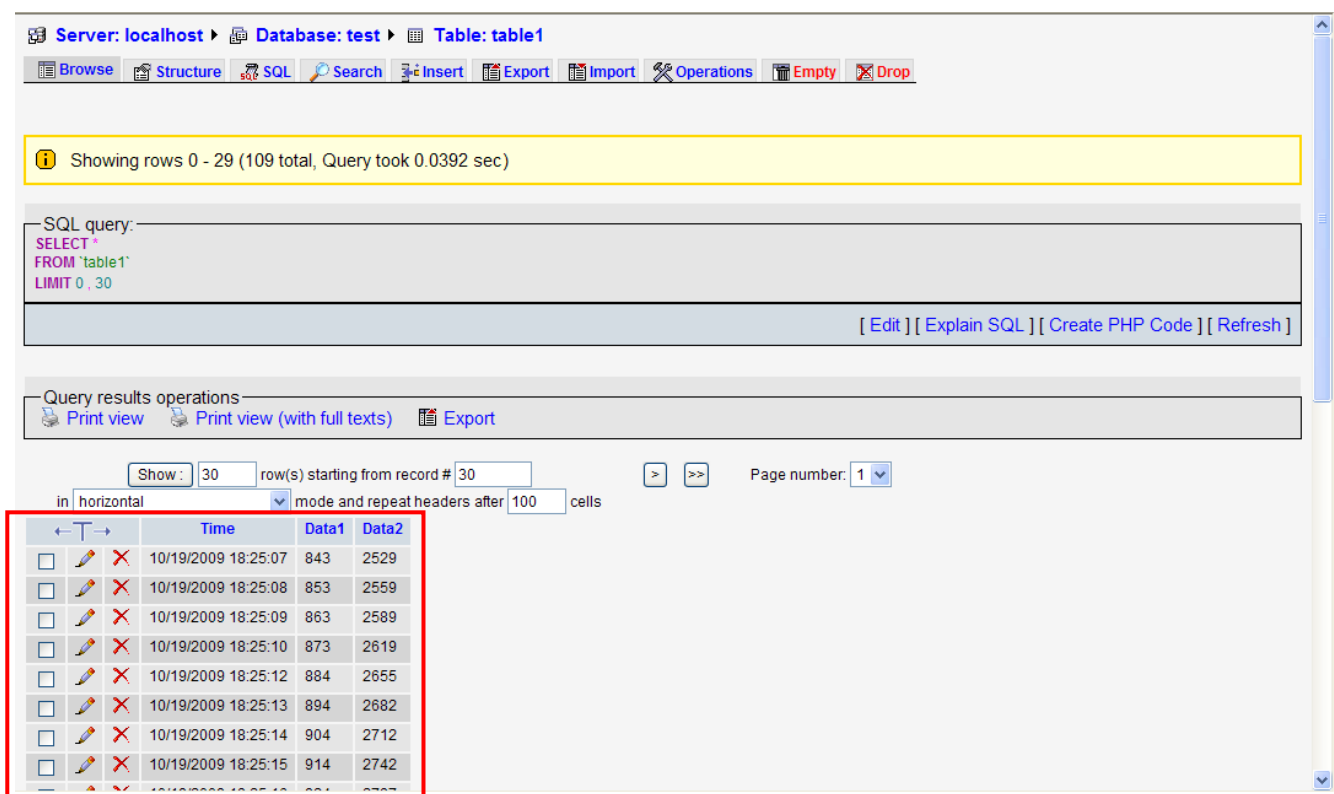
11. Open the browser, type: <http://localhost/phpMyAdmin/>, and select the test database from the Database drop-down menu.



12. Click on **Structure** link.



13. The recorded data will be shown at the bottom of the window.



Chapter 9 Writing Data in Oracle

Before creating testing example, make sure to change the upload and download option (**Options > Configuration**) on Screen Editor first. The default setting of upload and download is via **USB**. If the users need to use **Ethernet**, please change the default setting by referring to **Appendix A**.

9.1 Example

This example is used to help the users to understand how to use eServer to read the data of the register addresses \$3 and \$6 every second, record the data in Oracle via ODBC interface, and save the collected data into the specified folder (C:\Data).

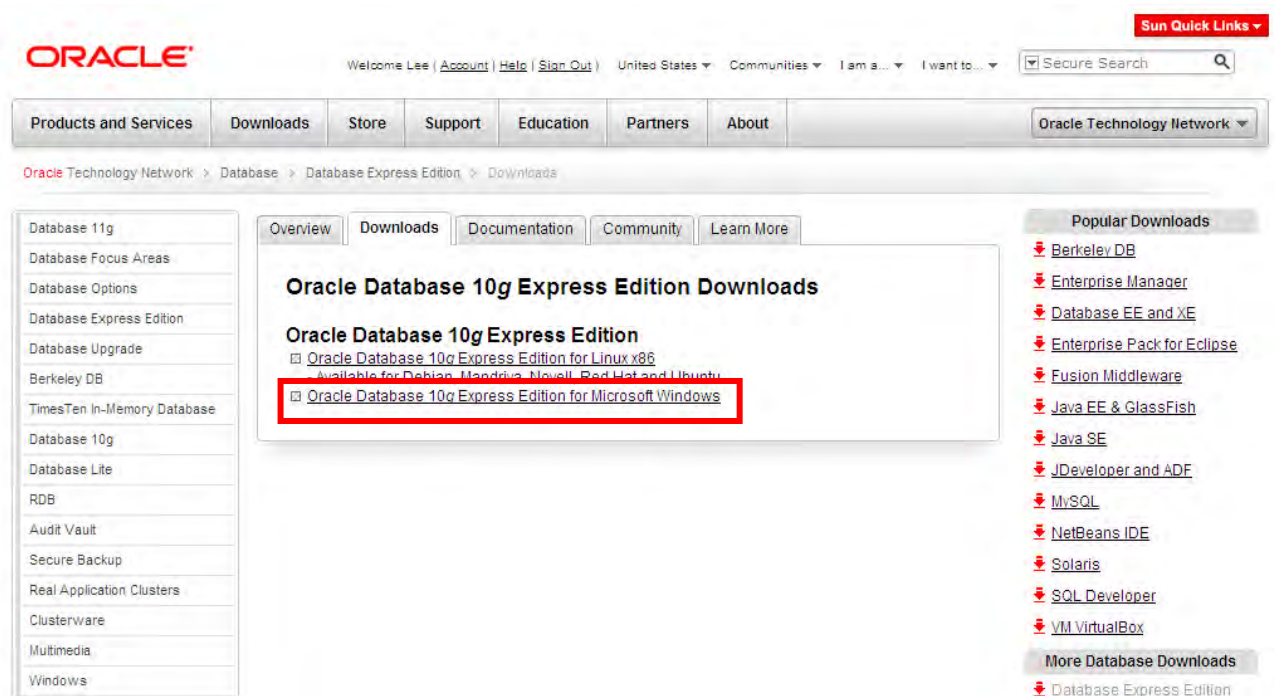
9.1.1 Software Installation

1. Oracle Introduction

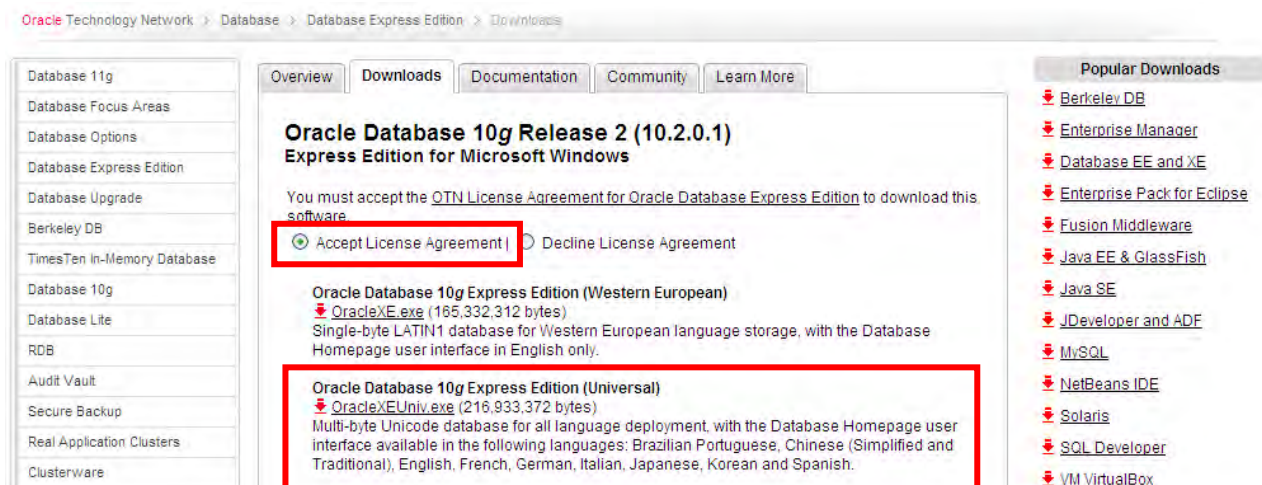
Oracle is a free and a database management system produced and marketed by Oracle Corporation. In this example, To download it, go to

<http://www.oracle.com/technetwork/database/express-edition/downloads/index.html>.

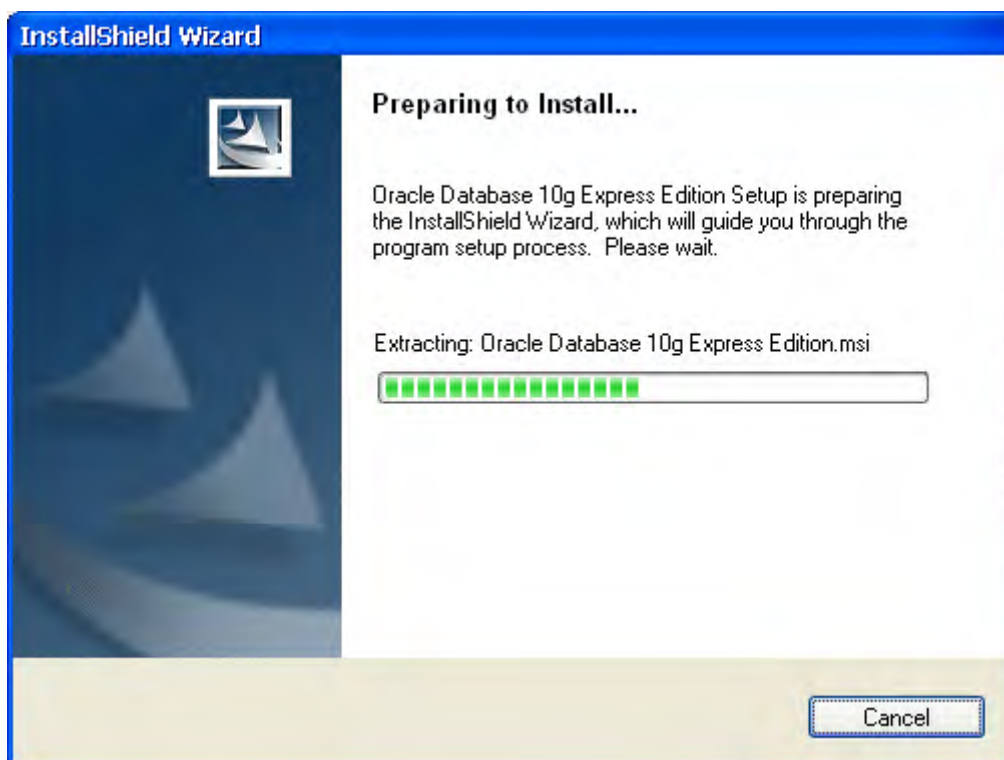
Please be sure to select **Oracle Database 10g** for **Microsoft Windows**.

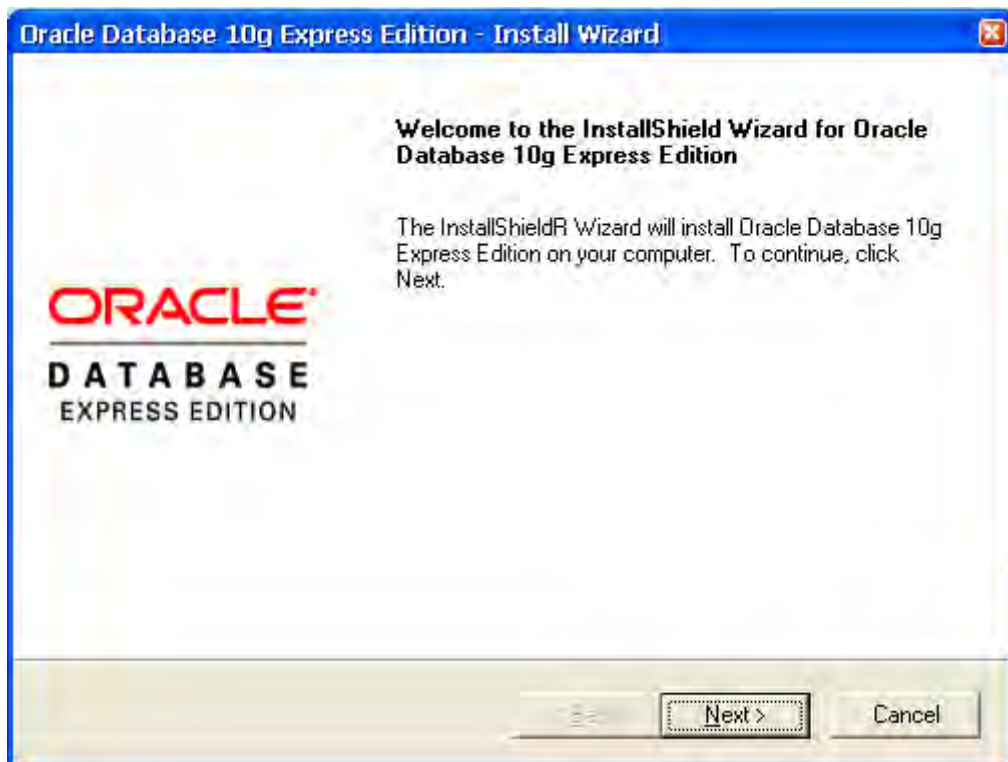


Then, accept the license agreement and download **OracleXEUniv.exe**, which is the multi-byte Unicode database for all language deployment.



After downloading **OracleXEUniv.exe**, click on **Run** button to install Oracle.



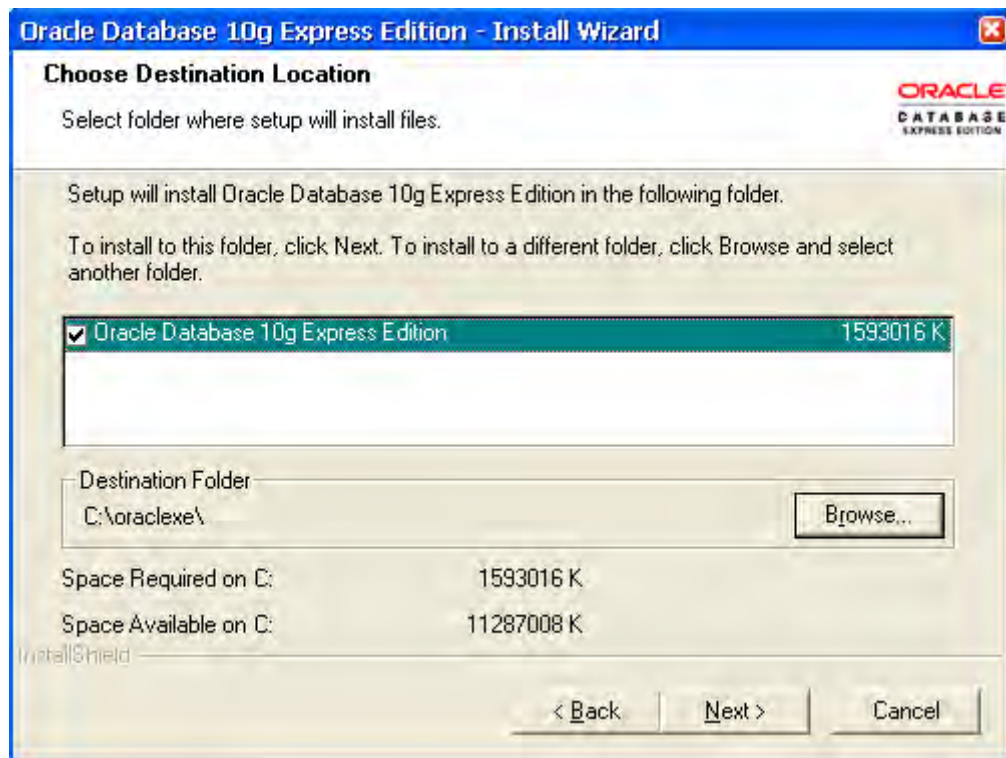


Click on **Next** button to go to the next step.

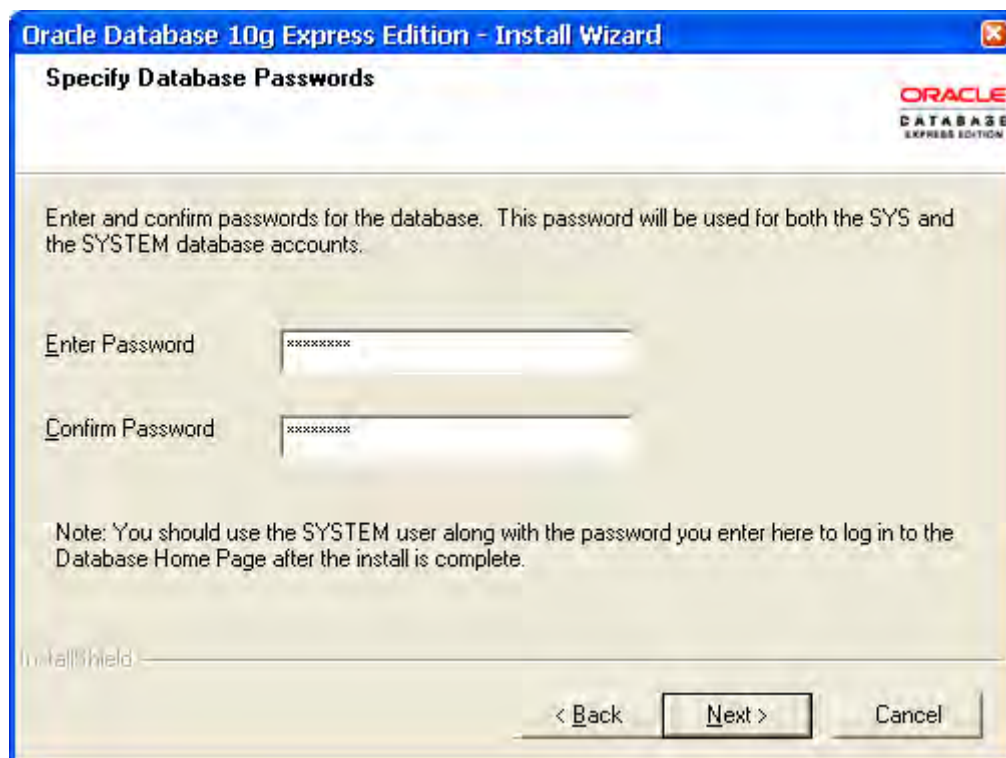


The users must read license agreement before installation. Choose **I accept the terms in the license agreement** to continue.

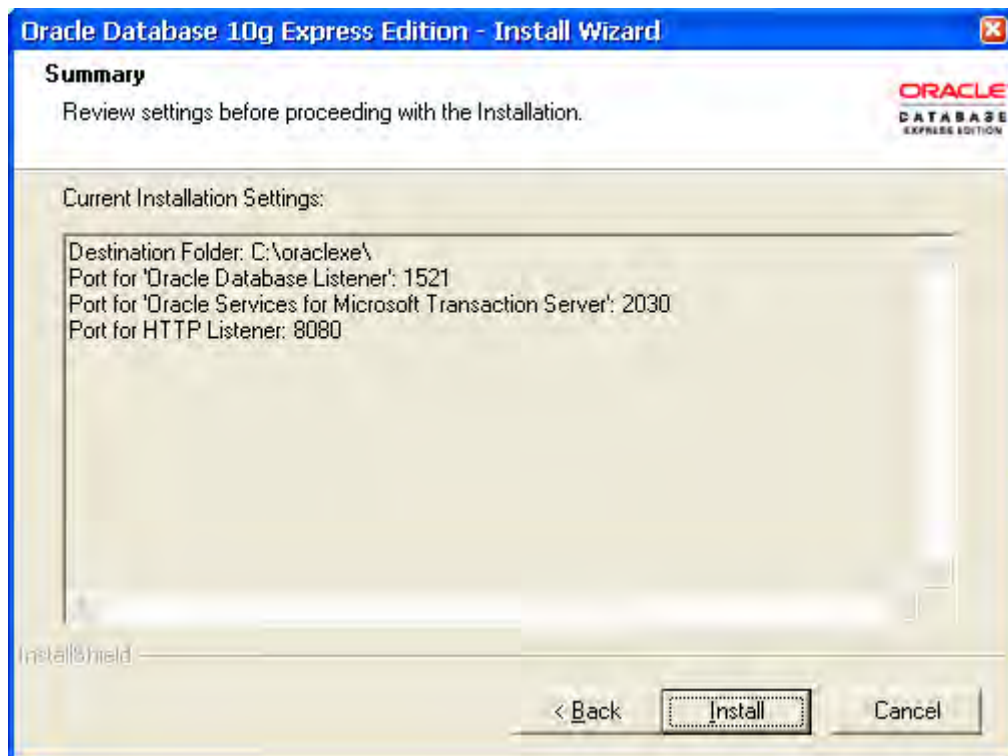
Click on **Next** button to go to the next step.



Select the default directory C:\oraclexe, and click on **Next** button for the next step.
To select a directory other than the default directory, click **Browse**.

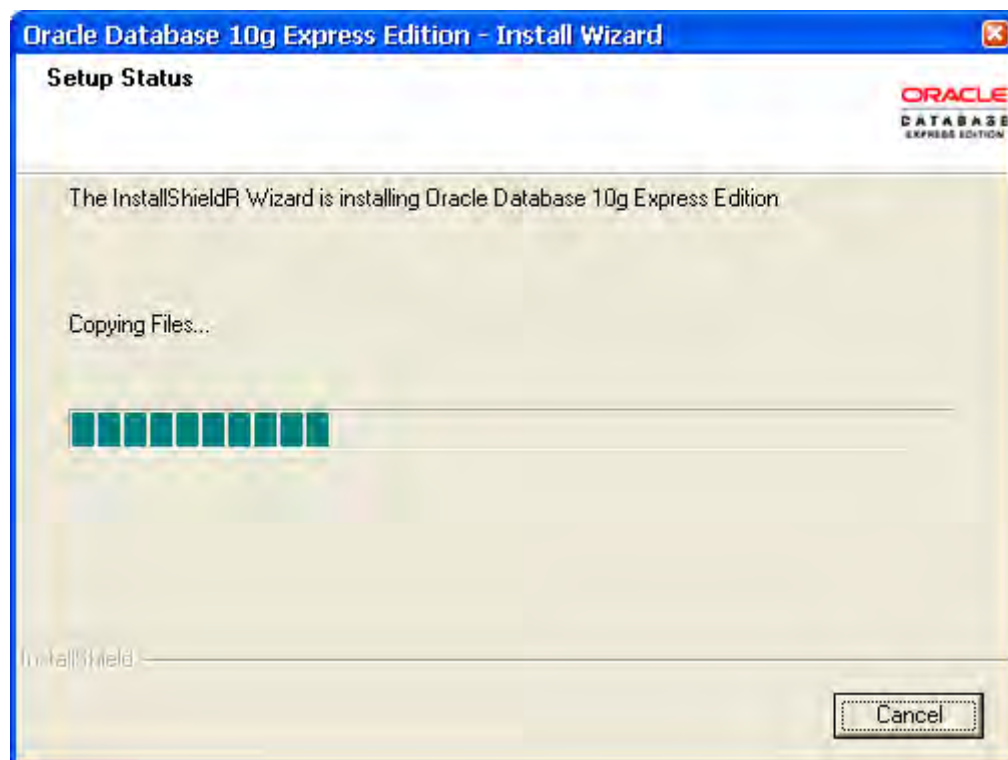


Then, enter and confirm the password for the database.
Click on **Next** button for the next step.

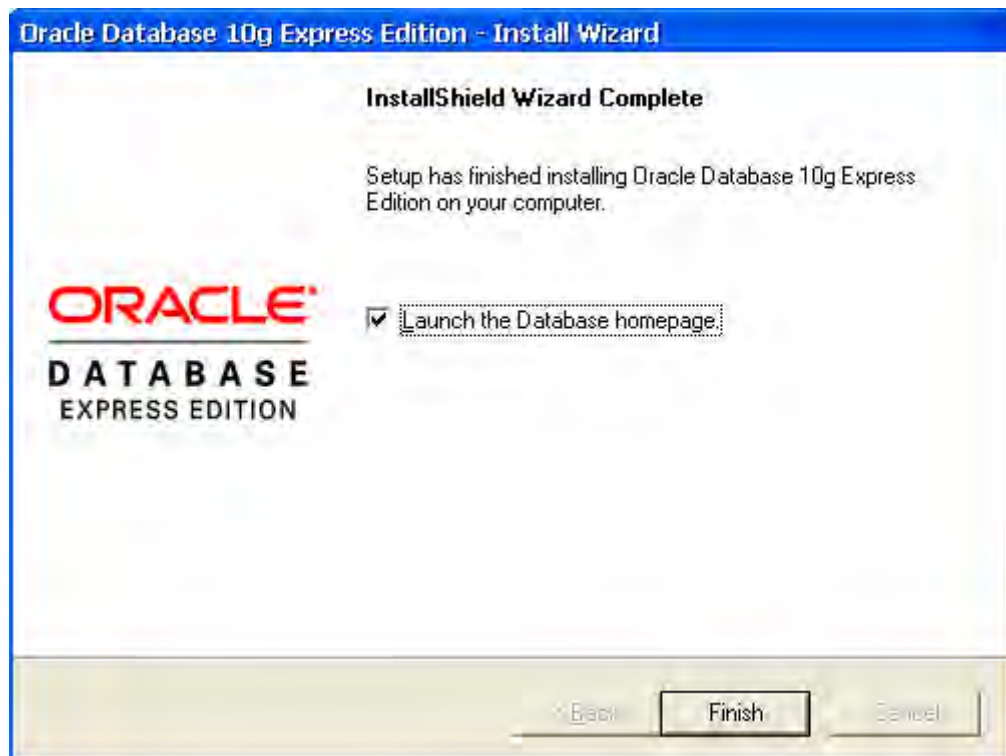


The users can review the settings before proceeding with the Installation.

Click on **Install** button to installing **Oracle Database 10g**.



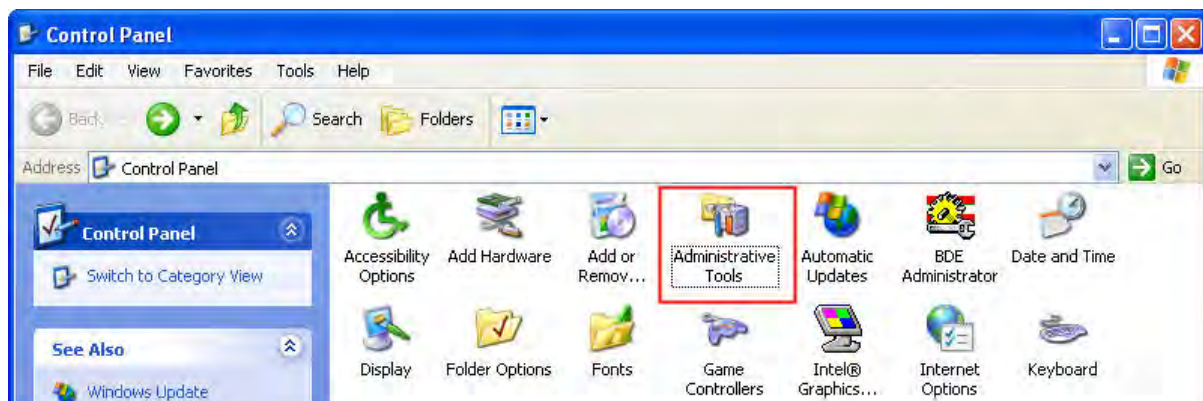
The installation wizard is installing **Oracle Database 10g**.



Click on **Finish** button to complete **Oracle Database 10g** setup.

2. ODBC Setup

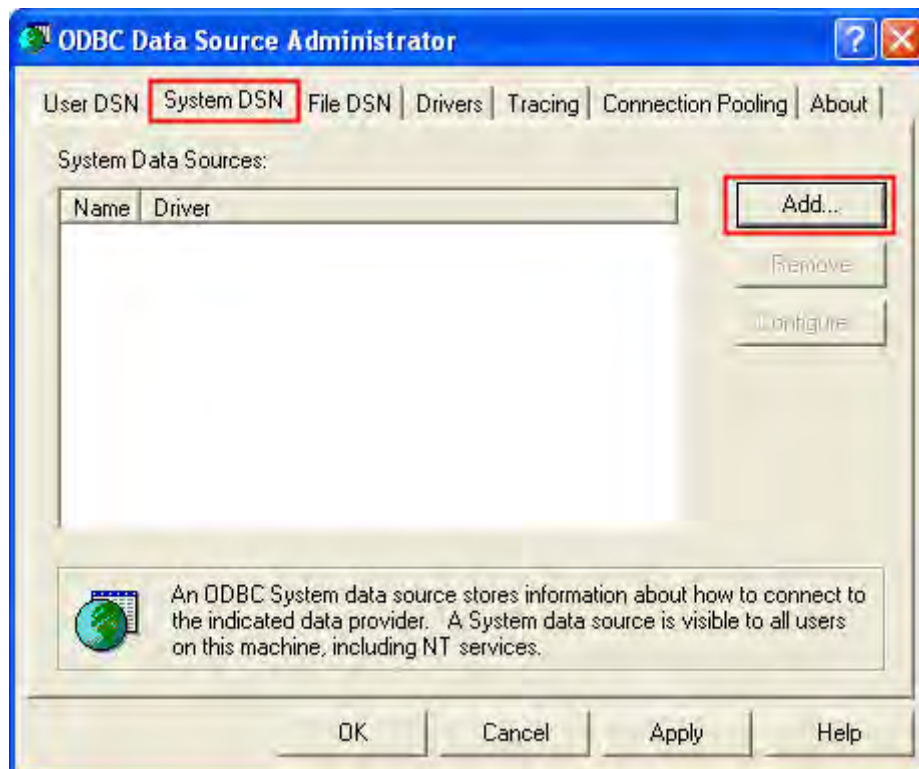
In the **Control Panel**, double-click **Administrative Tools**.



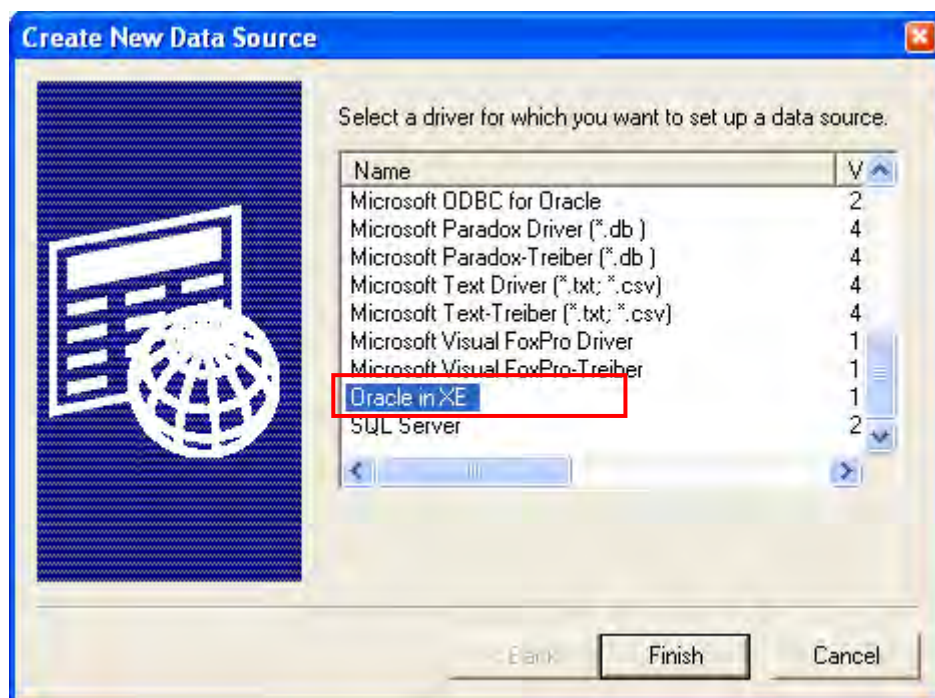
In the **Administrative Tools**, double-click **Data Sources (ODBC)**.



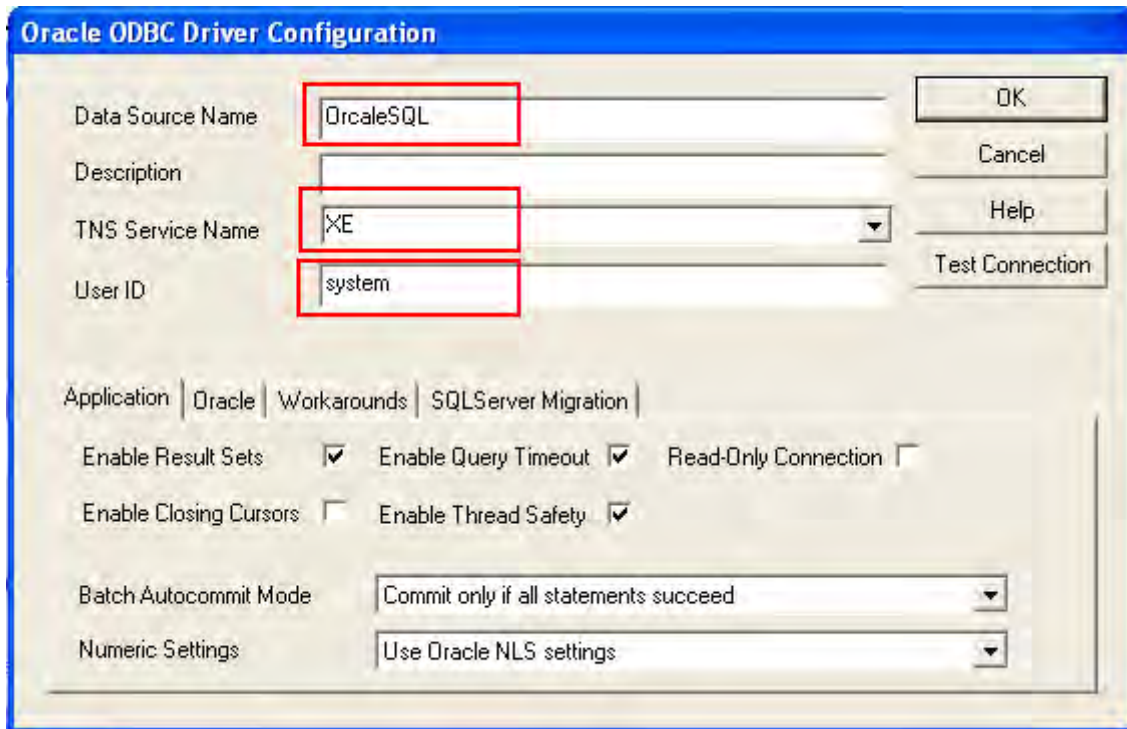
In the **ODBC Data Source Administrator** dialog box, select **System DSN** tab and click on **Add** button to add system data source.



Select **Oracle in XE** and then click on **Finish** button.



Now complete Oracle ODBC Driver Configuration as mentioned in the below dialog.



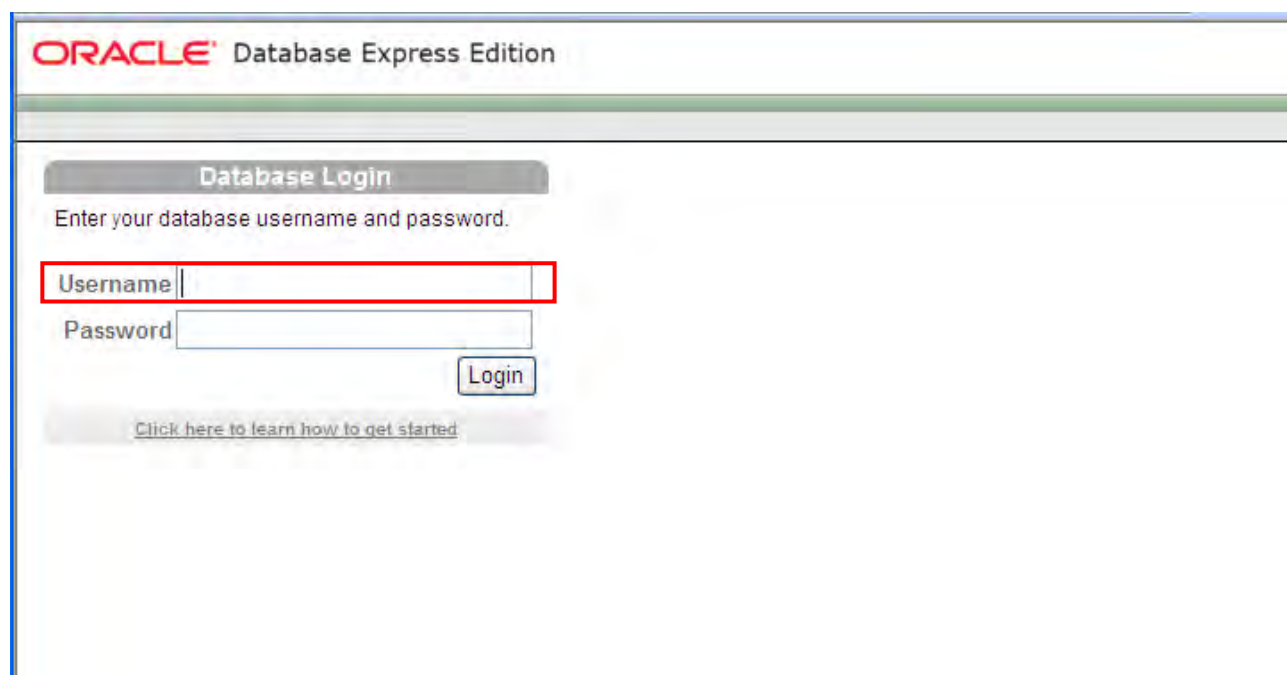
The image shows the 'Oracle ODBC Driver Configuration' dialog box. It has a blue title bar and a light beige background. The dialog contains several input fields and checkboxes. The 'Data Source Name' field is set to 'OracleSQL', 'TNS Service Name' is set to 'XE', and 'User ID' is set to 'system'. These three fields are highlighted with red rectangular boxes. To the right of the input fields are four buttons: 'OK', 'Cancel', 'Help', and 'Test Connection'. Below the input fields, there are tabs for 'Application', 'Oracle', 'Workarounds', and 'SQLServer Migration'. Under the 'Oracle' tab, there are several checkboxes: 'Enable Result Sets' (checked), 'Enable Query Timeout' (checked), 'Read-Only Connection' (unchecked), 'Enable Closing Cursors' (unchecked), and 'Enable Thread Safety' (checked). At the bottom, there are two dropdown menus: 'Batch Autocommit Mode' set to 'Commit only if all statements succeed' and 'Numeric Settings' set to 'Use Oracle NLS settings'.

Data Source Name: Enter ODBC data source name or enter the name of the data source you want to access.

Description: Enter some text to identify the connection.

TNS Service Name: Must select **XE** in the TNS Service Name drop down list.

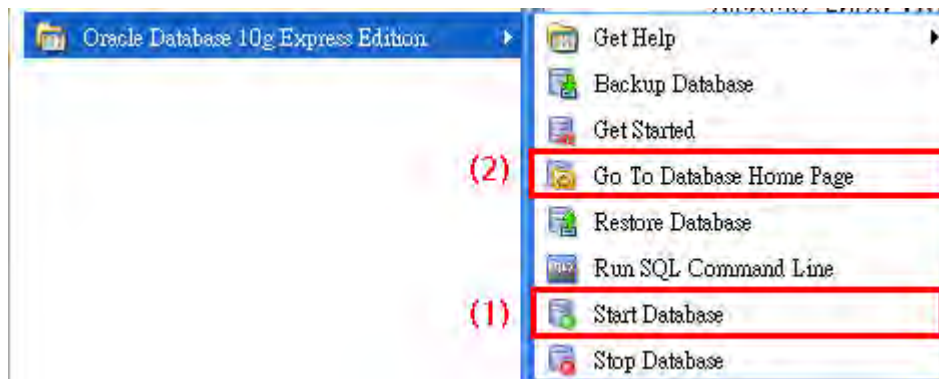
User ID: Enter user name **system** to use for this connection. This User ID is also the Username of Oracle database (see the figure below).



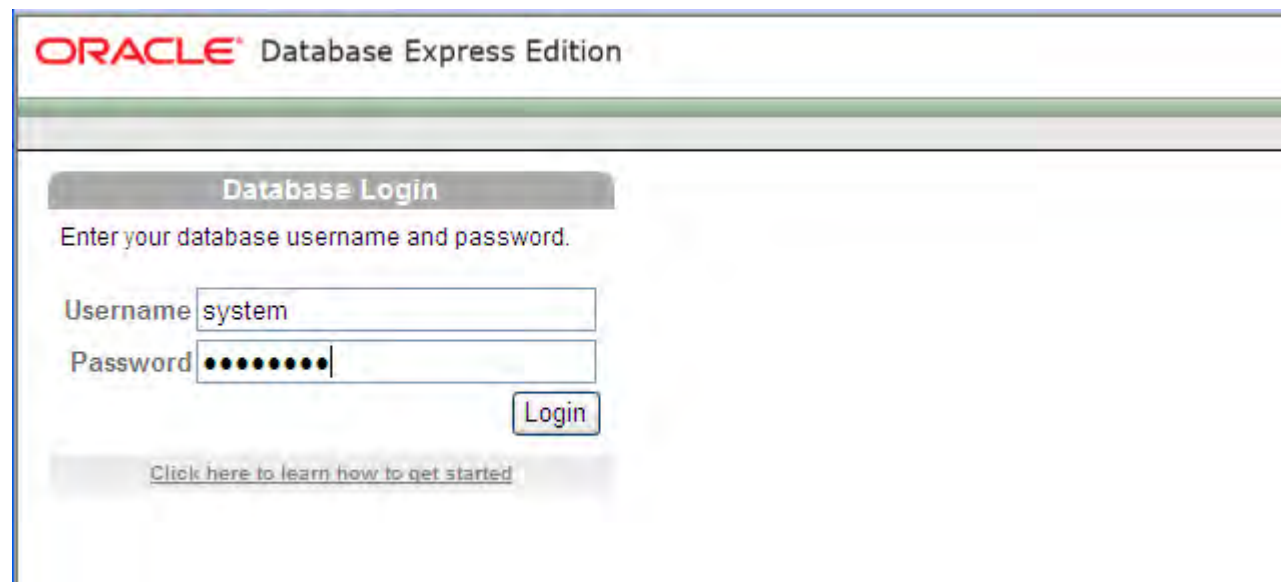
The image shows the 'ORACLE Database Express Edition' login page. It has a blue header with the Oracle logo and the text 'Database Express Edition'. Below the header, there is a 'Database Login' section with a grey background. The section contains the text 'Enter your database username and password.' followed by two input fields: 'Username' and 'Password'. The 'Username' field is highlighted with a red rectangular box. To the right of the 'Password' field is a 'Login' button. At the bottom of the login section, there is a link that says 'Click here to learn how to get started'.

3. Create Database and Table

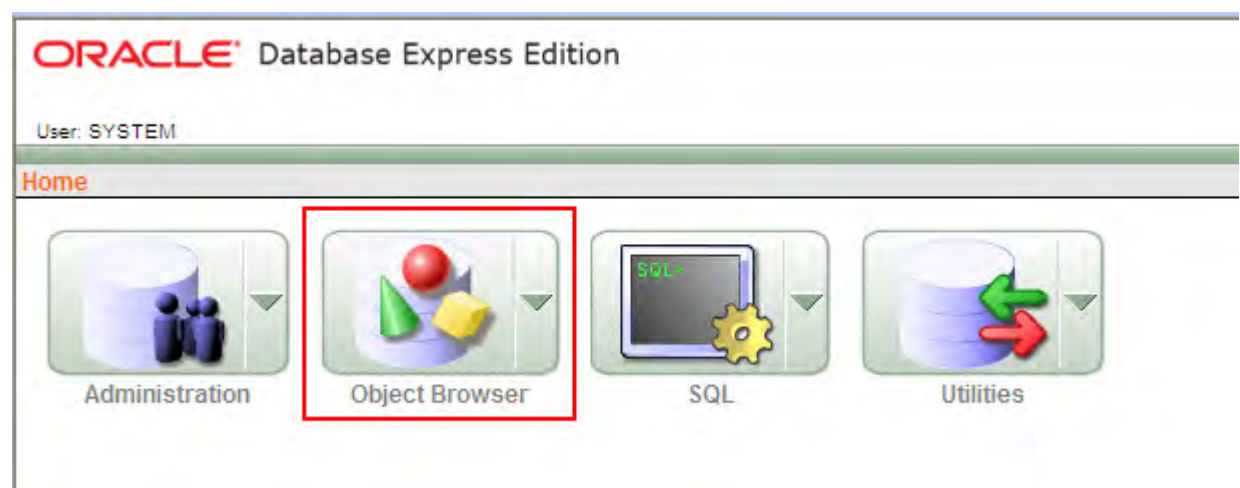
(1) Start Database (see the figure below)



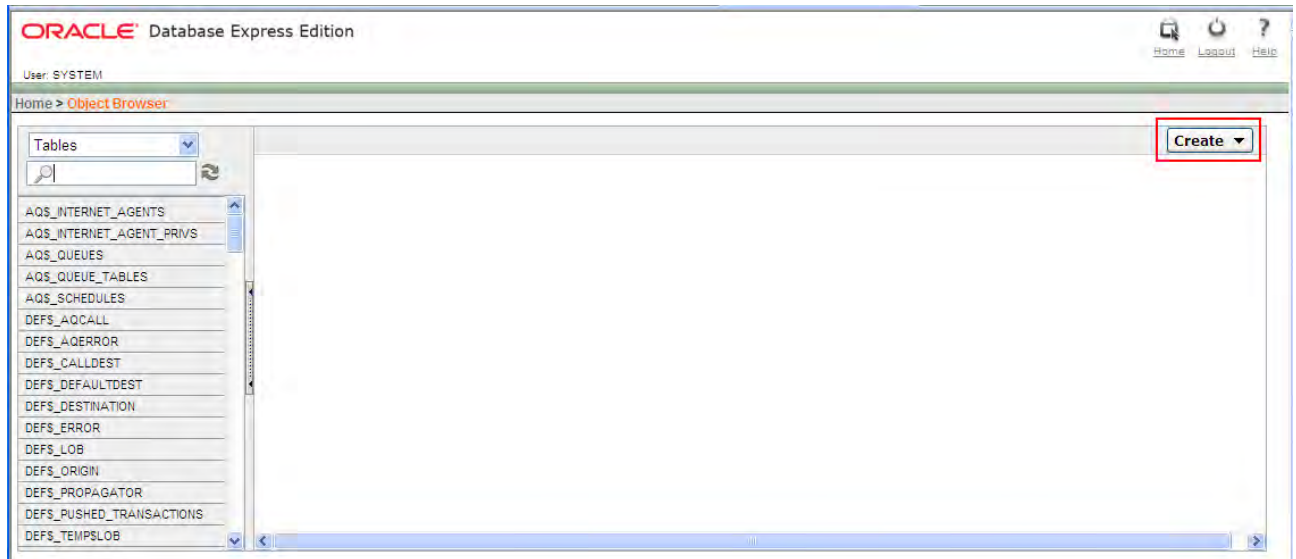
(2) Go to Database homepage.



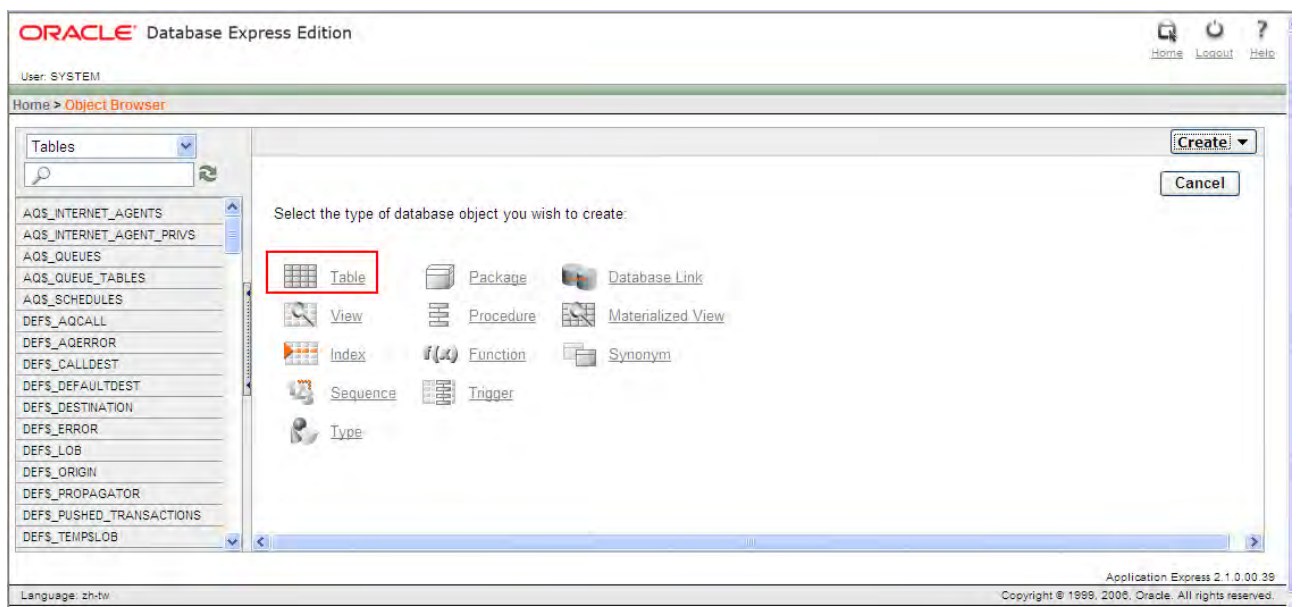
Enter username and password for the database and press **Login** button to enter into the database homepage. Then, select **Object Browser**.



Press **Create** button.



Click on **Table** link.



Enter the name of the table. In this case, the name of the new table is entered as **oracletable**. Create three columns: TIME, DATA1 and DATA2 and select Type as CHAR (Character). Click on **Next** button for the next step.

Create Table [Cancel] [Next >]

* Table Name: ☐ Preserve Case
Table name must be specified.

Column Name	Type	Precision	Scale	Not Null	Move
TIME	CHAR		100	<input type="checkbox"/>	▼ ▲
DATA1	CHAR		100	<input type="checkbox"/>	▼ ▲
DATA2	CHAR		100	<input type="checkbox"/>	▼ ▲
<input type="text"/>	- Select Datatype -				▼ ▲
<input type="text"/>	- Select Datatype -				▼ ▲
<input type="text"/>	- Select Datatype -				▼ ▲

[Add Column]

Select **No Primary Key**. Click on **Next** button for the next step.

Primary Key [Cancel] [< Previous] [Next >]

Table name: ORACLETABLE

Primary Key: ☒ No Primary Key
☐ Populated from a new sequence
☐ Populated from an existing sequence
☐ Not populated

Click on **Next** button for the next step.

Foreign Keys [Cancel] [< Previous] [Next >]

Foreign Key Columns Referenced Table Referenced Columns Action

Add Foreign Key [Add]

* Name: ☒ Disallow Delete
☐ Cascade Delete
☐ Set Null on Delete

Select Key Column(s) * Key Column(s)

TIME
DATA1
DATA2

* References Table:

Click on **Finish** button to complete the settings.

Available Columns

Example Check Constraints

Click on **Create** button to create a new table.

SQL

When the following figure shows on the screen, it indicates that a new table on Oracle database is created successfully.

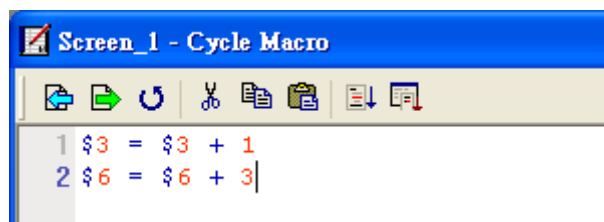
Column Name	Data Type	Nullable	Default	Primary Key
TIME	CHAR(100)	Yes	-	-
DATA1	CHAR(100)	Yes	-	-
DATA2	CHAR(100)	Yes	-	-

9.1.2 Create HMI Project File

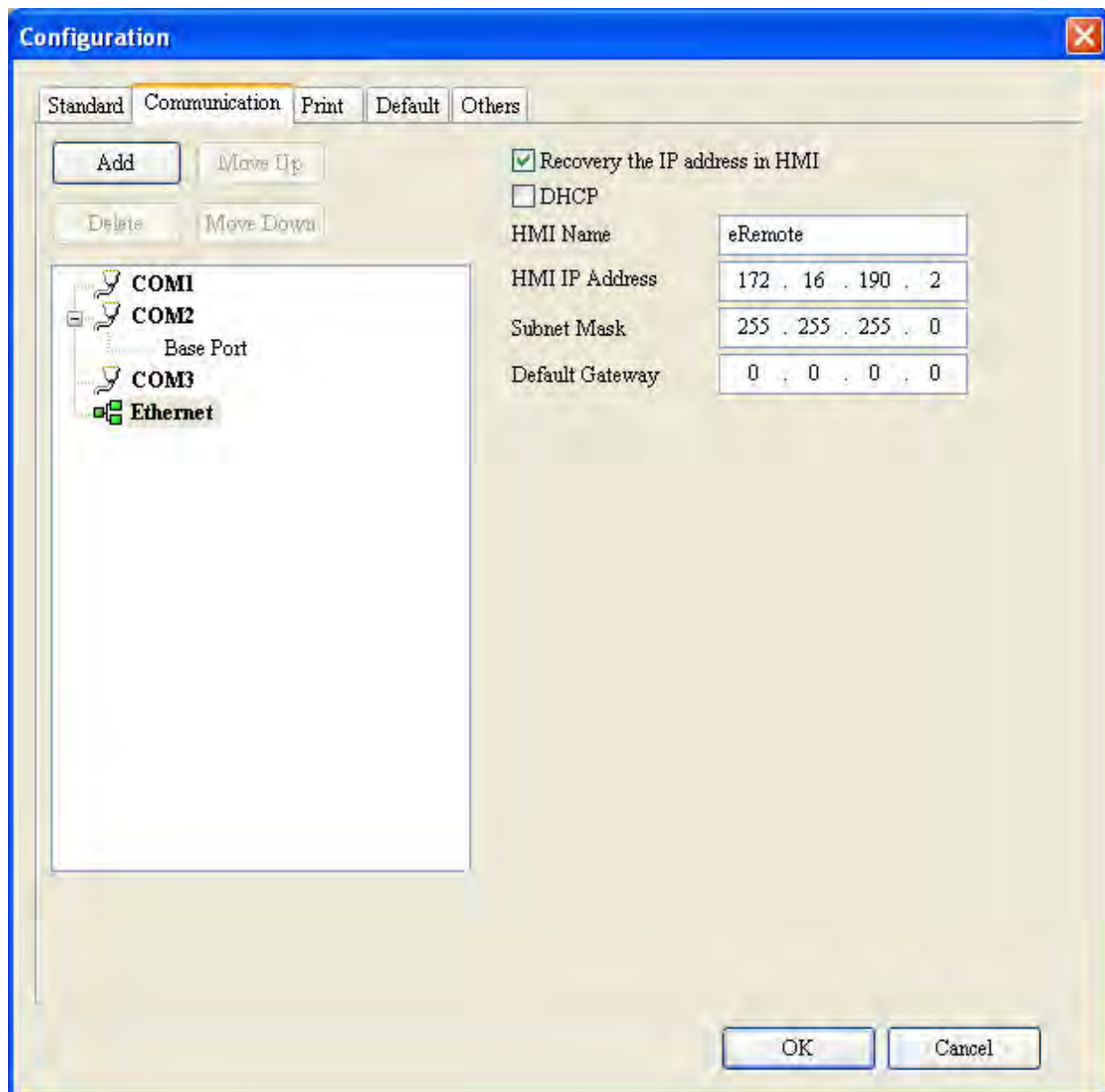
Start Screen Editor software program and click **File > New** or click **New** icon to create a new project. Then, click **Element > Input > Numeric Entry** to create two numeric entry elements (\$3 and \$6) and click **Element > Button > Maintained** to create two maintained button elements (\$0.0 is for rising edge and \$0.2 is for falling edge) on the screen. In this case, 10 inches color AE type DOP series HMI is used.



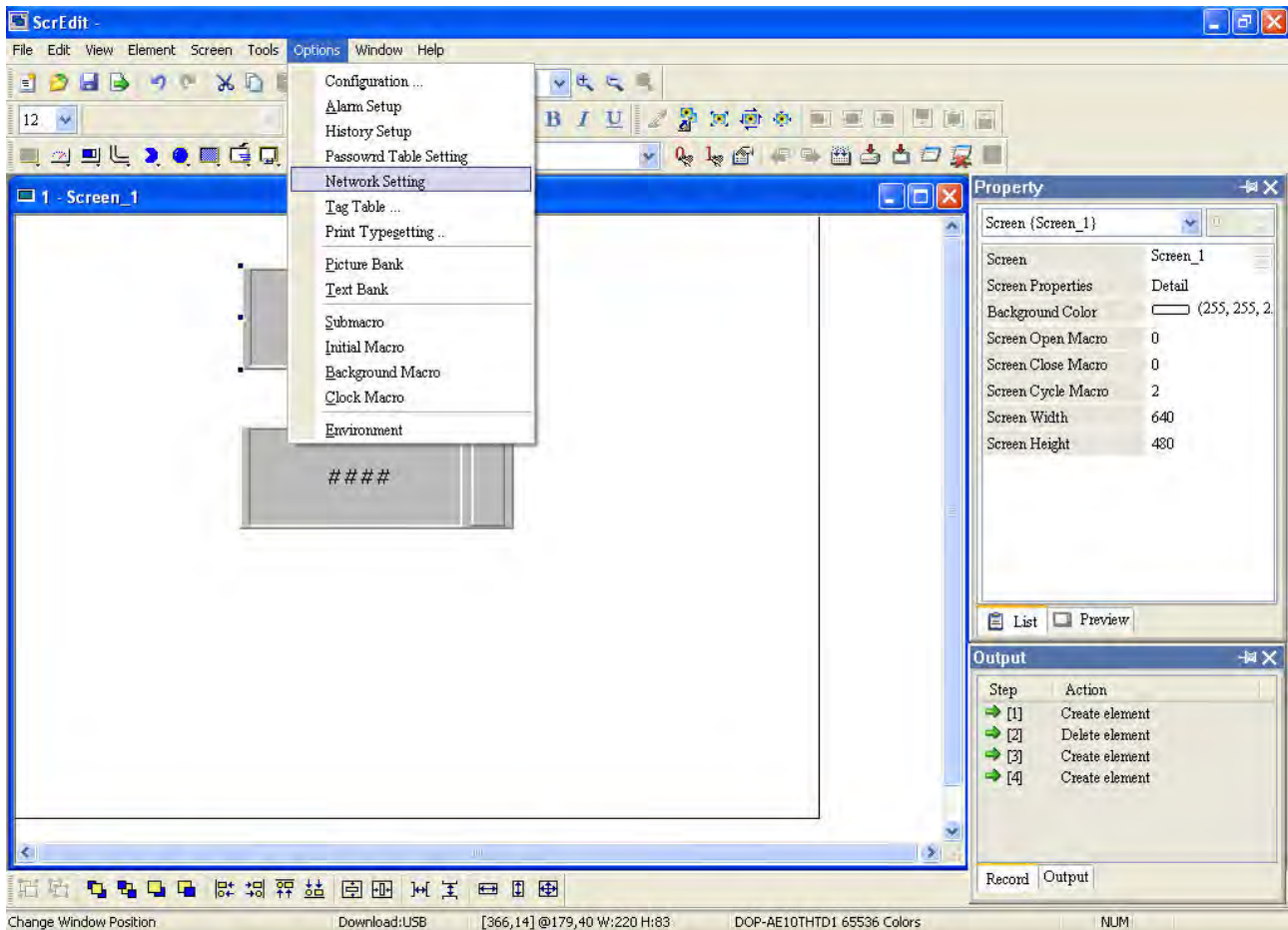
Use Screen Cycle Macro and enter the following commands in macro command window.



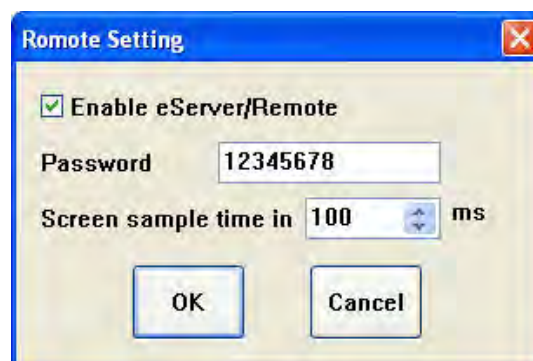
Click **Options > Configuration** and use **Communication** tab to select **Ethernet** and complete HMI networking settings shown as the figure below. Then, press **OK** button to finish the settings.




Next, click **Options > Network Setting**.



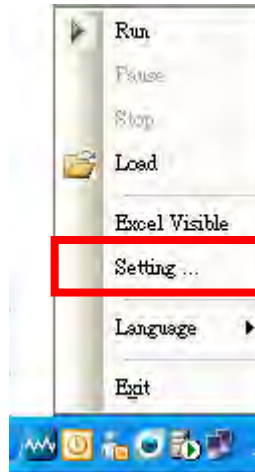
The following **Remote Setting** dialog box will appear. Check the check box before **Enable eServer/Remote** and set a password for network communication. After **OK** button is pressed, HMI networking is completed. Compile the edited project file at the end of the programming and the edited project file could be transferred to HMI.



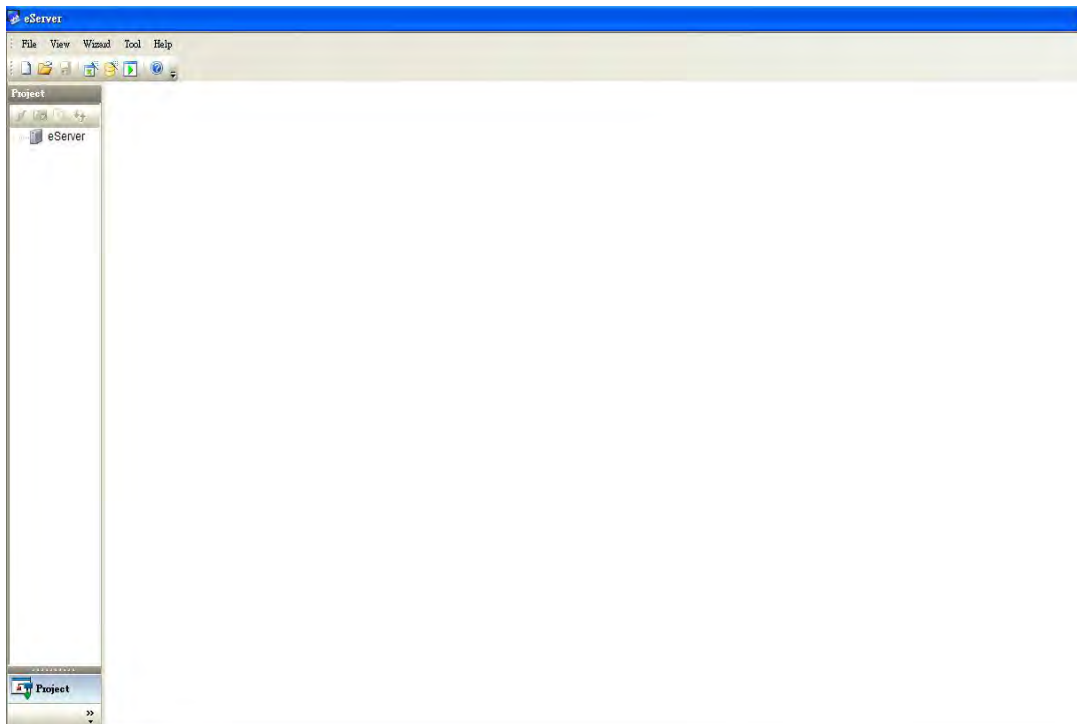
9.1.3 eServer Setting

1. After eServer is enabled, eServer  icon will appear at the bottom right of Windows screen.

Right-click this icon and select **Setting** option from the pop-up menu.



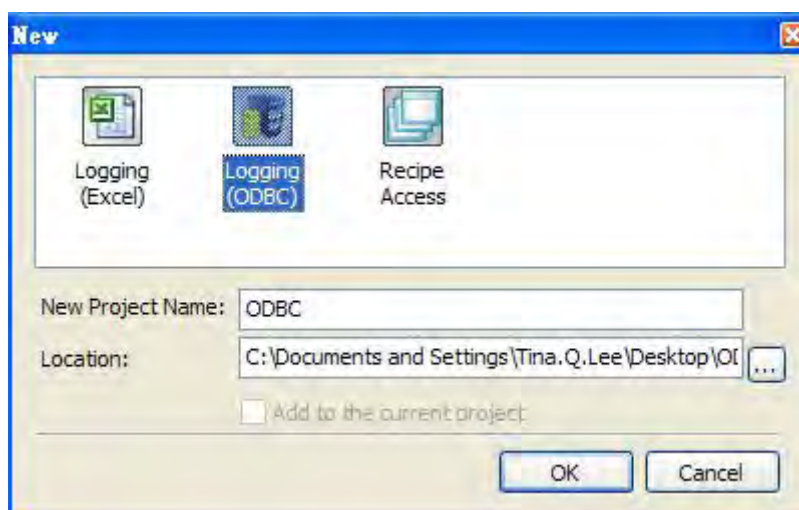
2. Then, open eServer window.



3. Click **File > New** or click  icon to create a new project file.

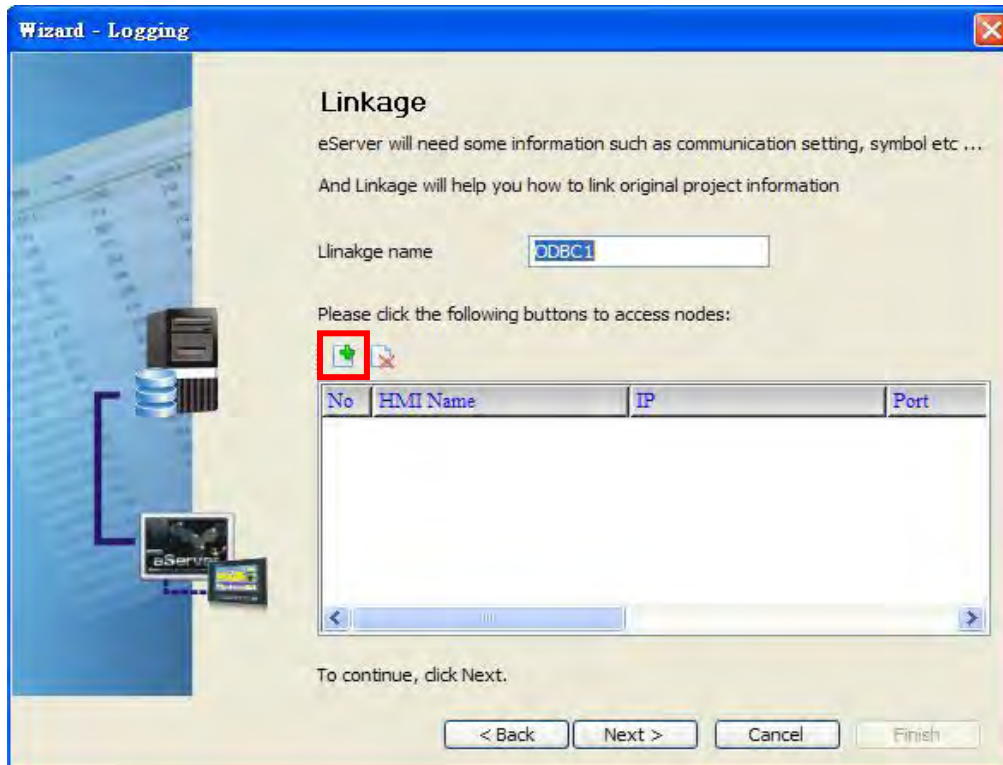


4. Select  icon to enable ODBC Logging Wizard.

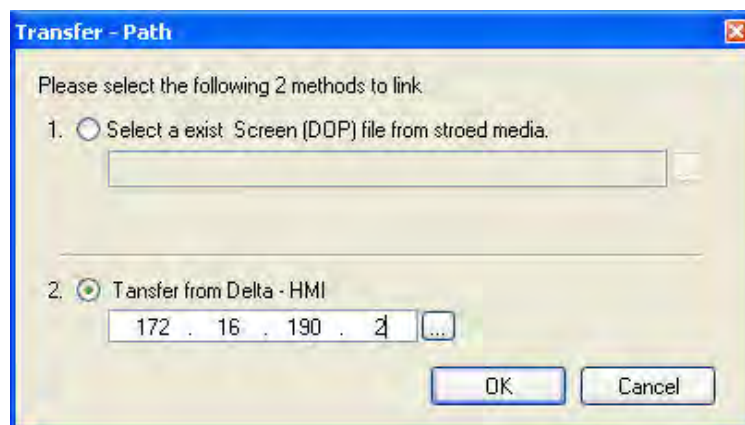


Press **Next** button to go to next step.

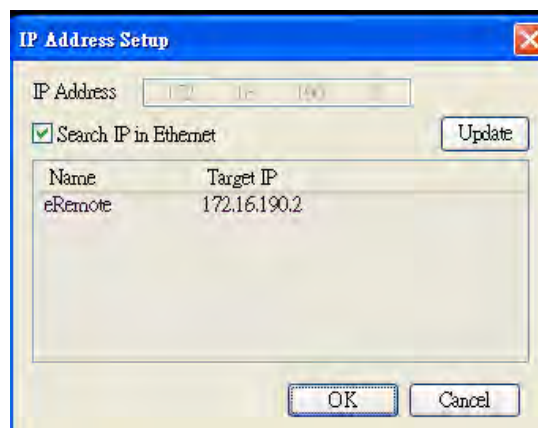
5. Click **New** icon to access nodes (link to HMI).



Choose **Transfer from Delta - HMI** option to transfer the HMI screen project file via network communication directly.

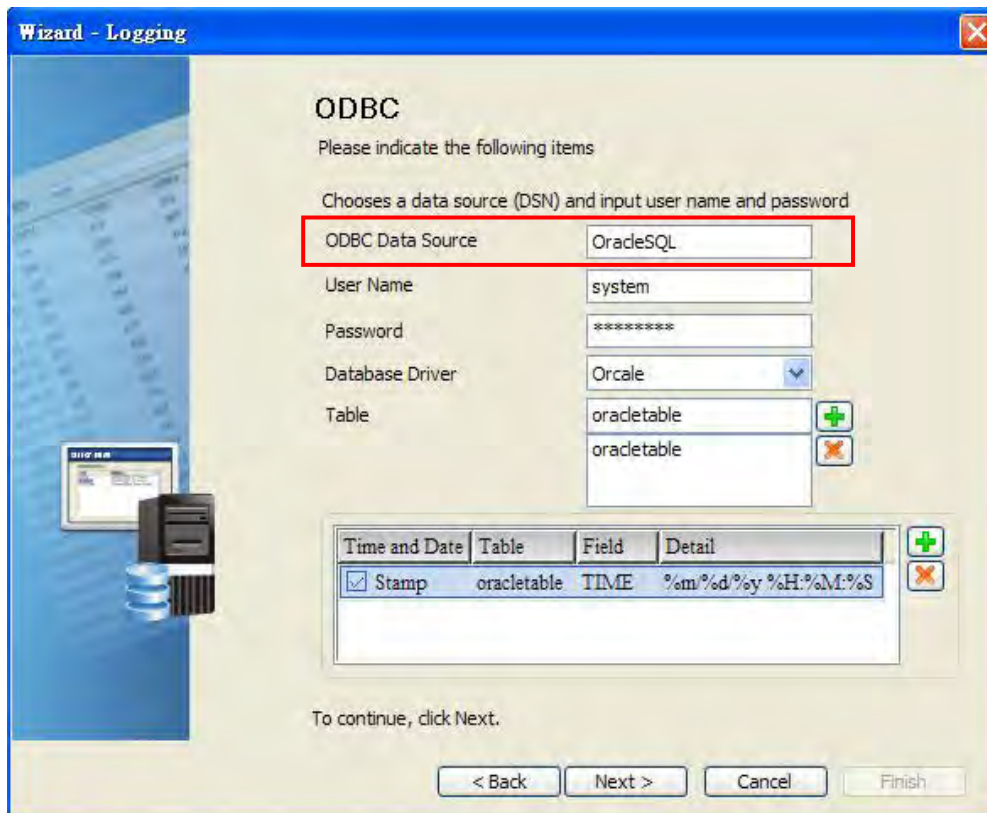


Press **OK** button to go to next step.



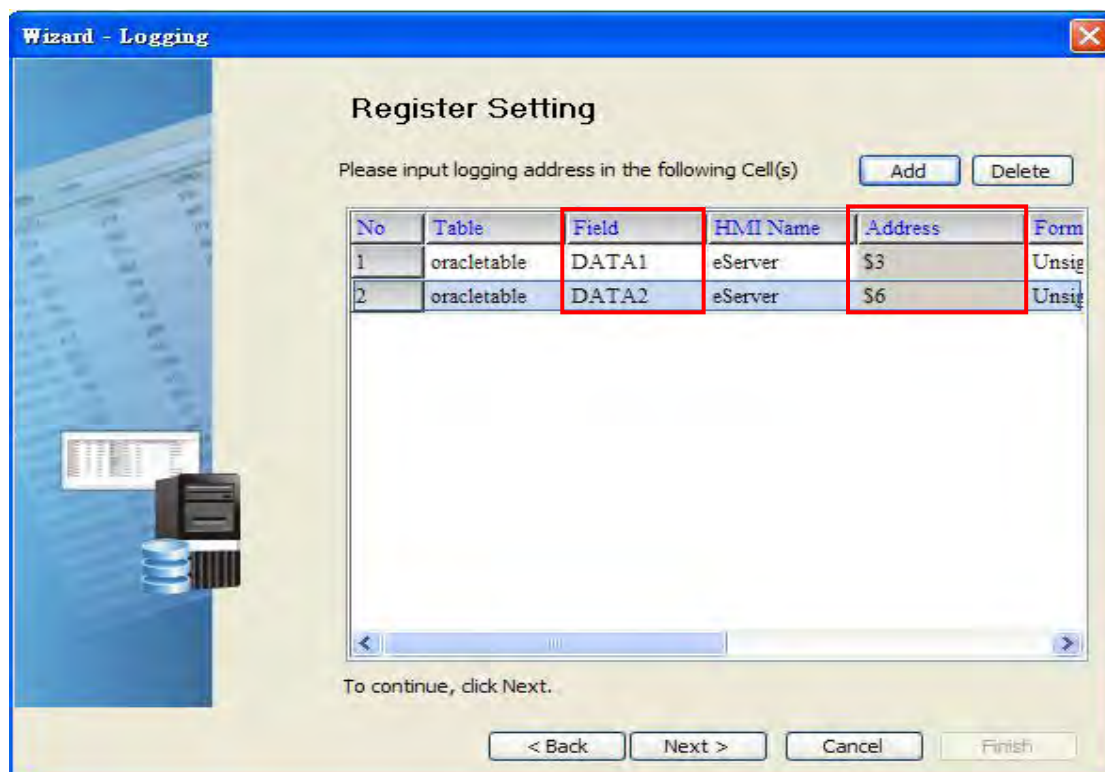
Press **OK** button to go to next step.

6. ODBC Data Source Setting: Create an ODBC Data Source pointing to your database.
Please refer to the following settings.

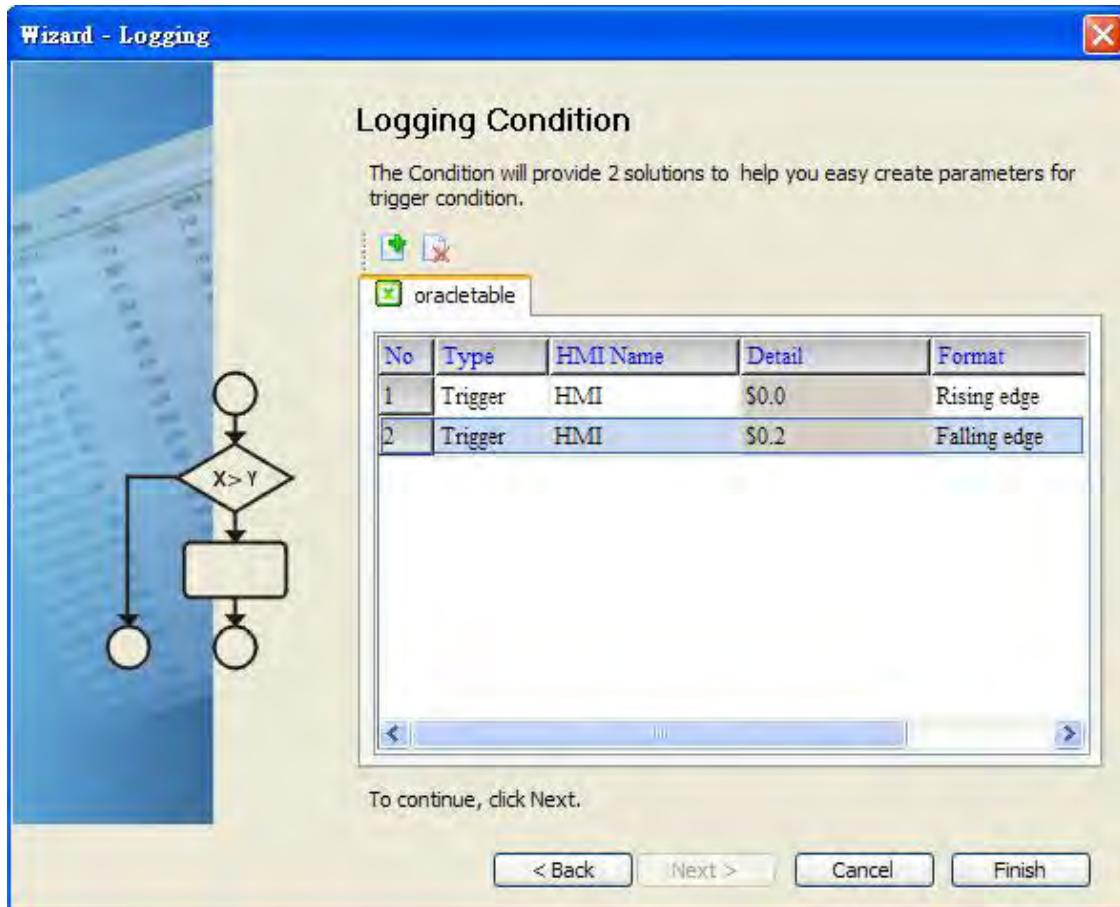



Press **Next** button to go to next step.

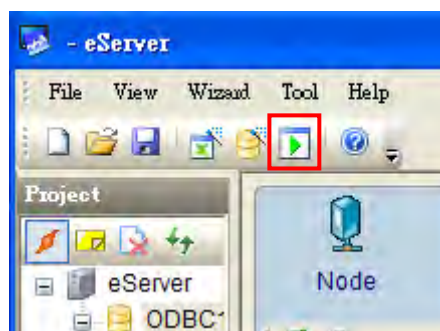
7. Register Setting: Set the register address of the sampling data.

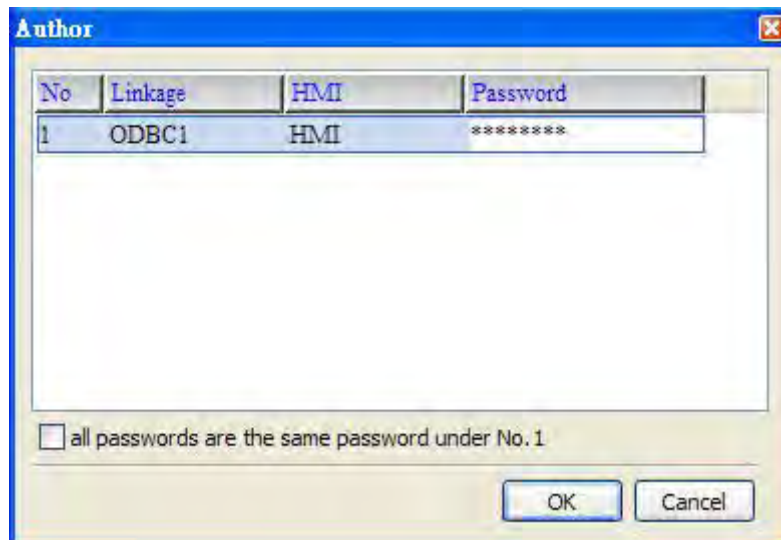



8. Select the Type as **Trigger**. Then, set the format of address \$0.0 to **Rising edge** and the format of address \$0.2 to **Falling edge** respectively. Press **Finish** button to continue.

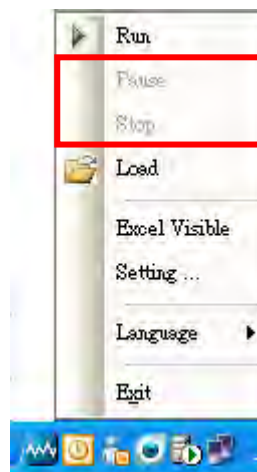


9. Press  icon. After the password is entered, the system will start sampling operation, i.e. writing data in MySQL Server.

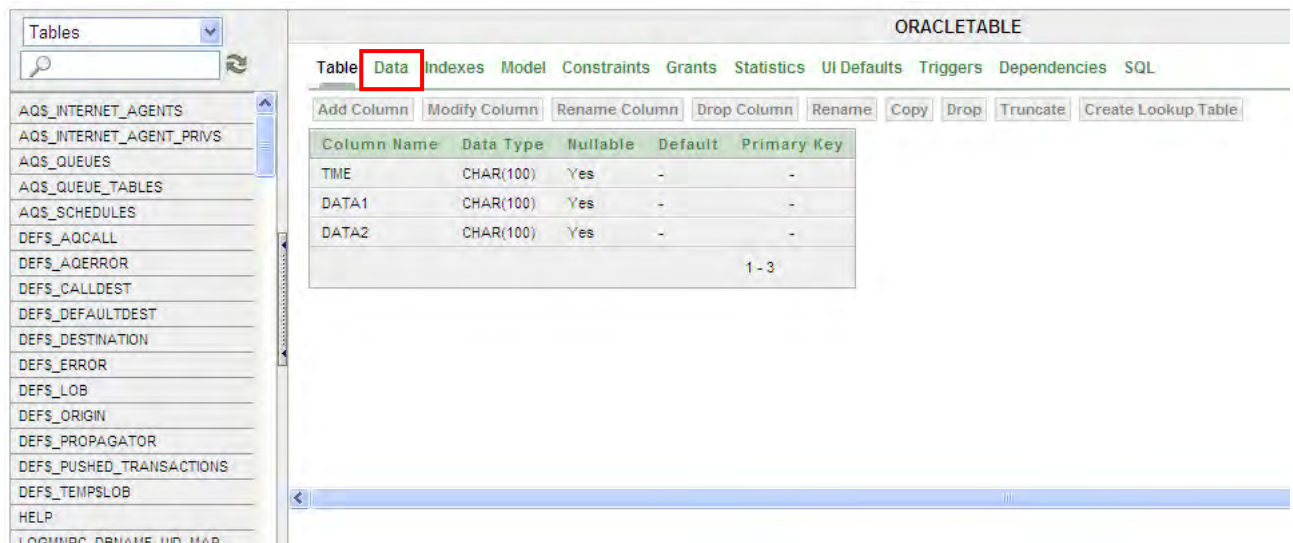




10. If the users want to pause or stop the sampling operation, only right-click eServer  icon at the bottom right of Windows screen and select Pause or Stop option from the pop-up menu, the sampling operation will pause and stop immediately.



11. Open the browser and go back to the Oracle database. Click on **Data** link.




Column Name	Data Type	Nullable	Default	Primary Key
TIME	CHAR(100)	Yes	-	-
DATA1	CHAR(100)	Yes	-	-
DATA2	CHAR(100)	Yes	-	-

There are two recorded data shown on the screen.

When **Rising Edge** button (\$0.0) on HMI screen is pressed, the writing operation will be triggered and the system will write the first data into the database.

When **Falling Edge** button (\$0.2) on HMI screen is pressed, the writing operation will be triggered and the system will write the second data into the database.



09/13/2010 12:06:29	14311	42933
09/13/2010 12:06:35	14375	43125

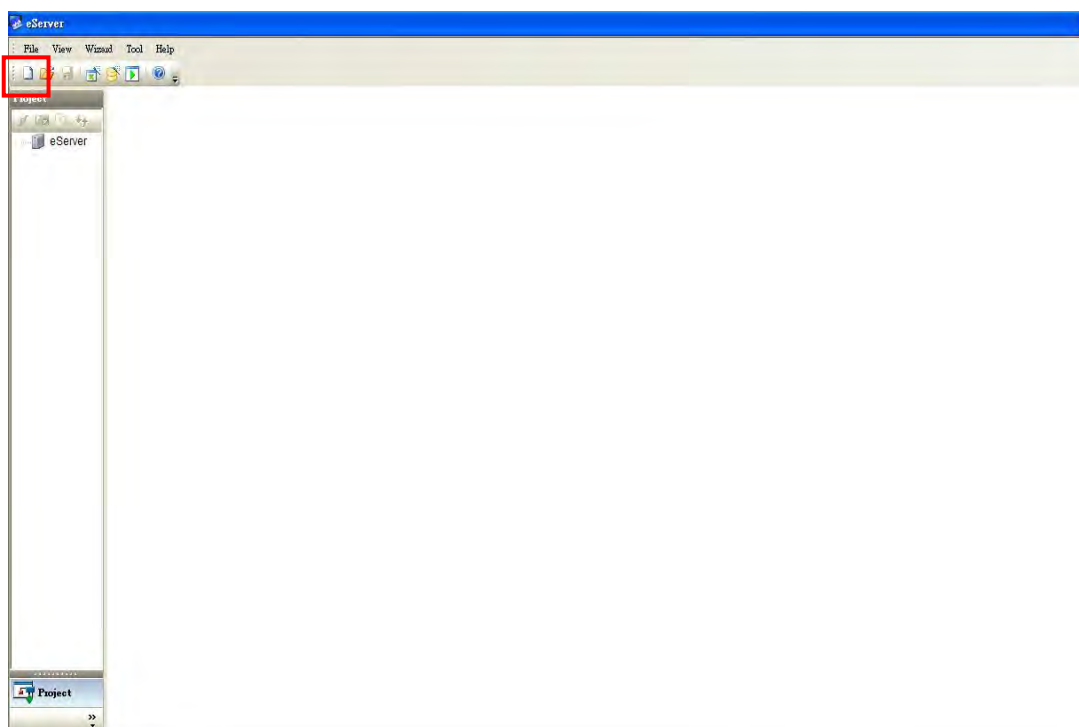
Chapter 10 Recipe Access Setting

10.1 Detailed Settings

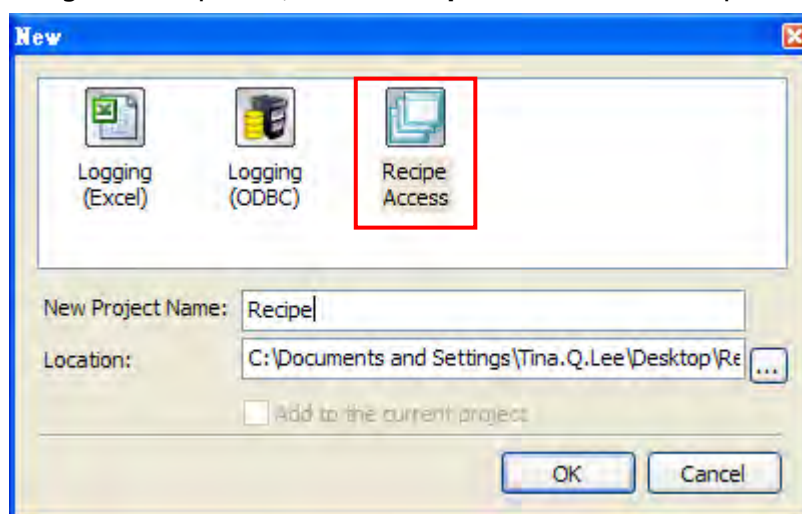
Please refer to the following steps to complete Excel sampling setting, i.e. how to log data from HMI to Excel.


10.1.1 New Project

Start eServer, and click **File > New** or click **New** icon

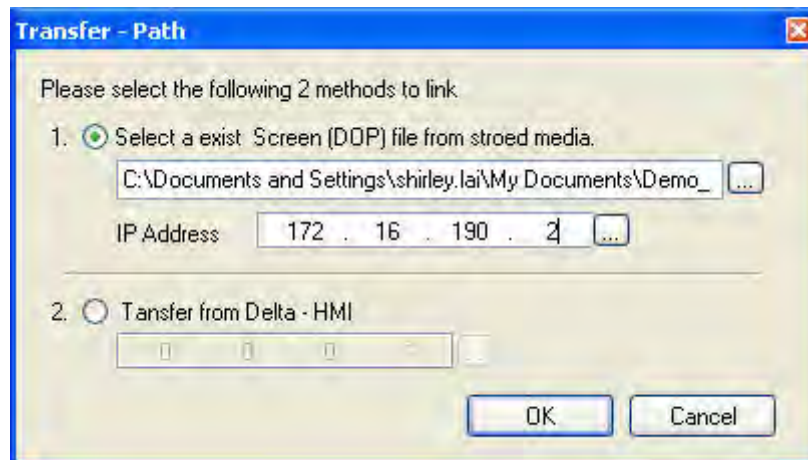


After the **New** dialog box is opened, select **Recipe Access** icon and press **OK** button.

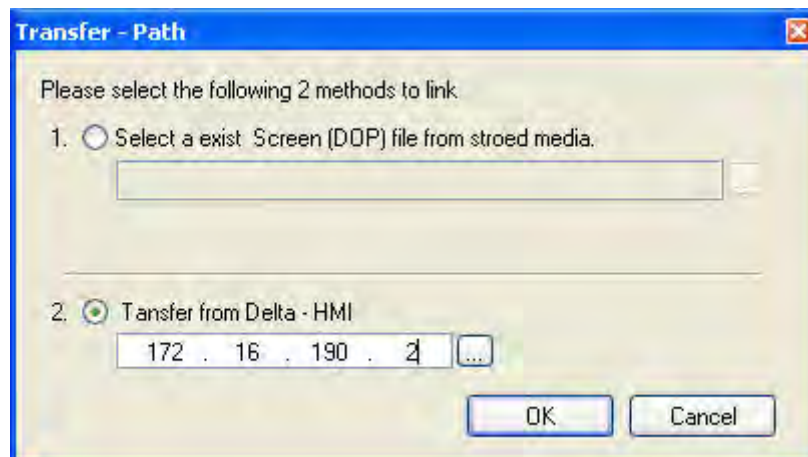


Click  icon to link HMI screen project file. There are two methods available for selection:

1. Select an existing Screen (DOP) file from stored media: Open an existing screen project file and set the IP address of the connecting HMI.



2. Transfer from Delta - HMI: Transfer the HMI screen project file via network communication directly.



Press **OK** button to go to next step.

10.1.2 Register Setting

This step is used to set the register addresses of the database. There are two modes, Import and Export available for selection. After selecting the desired mode, choose Fixed or Variance from the drop-down list and complete the settings.

Import - Fixed

No	Usage	Name	Type	HMI Name	File Name	Destination Path
1	<input checked="" type="checkbox"/>	Import16(1)	16 bits	HMI	Import16_ %H%M	C:\Documents and Settings\Tina.Q.Lee\
2	<input type="checkbox"/>	Import32(1)	32 bits	HMI	Import32_ %H%M	

Import - Variance

No	Usage	Name	Type	HMI Name	File Name	File Name Length	Controller	Destination Path
1	<input checked="" type="checkbox"/>	Import16(1)	16 bits	HMI	\$100	4	Internal Memory	C:\Documents and Settings\Tina.Q.Lee\
2	<input type="checkbox"/>	Import32(1)	32 bits	HMI	None	1		

Setting Item	Description	Remark
No.	Excel Sheet index which the sampling data will be written.	Unchangeable
Usage	If the users want to select 16-bit recipe, enable this option by checking the check box.	
Name	Recipe display name	
Type	Recipe Bit type	Unchangeable
HMI Name	Name of connecting HMI	Unchangeable
File Name	1. When Fixed is selected: It is the file name of the imported file which could be changed and user-defined. 2. When Variance is selected: It is the register address of a certain trigger element. Please note: When the data format is set to Word, the data format of the sampling register address could be Unsigned only.	

Setting Item	Description	Remark
File Name Length	Number of characters by referring the user-defined file name.	
Controller	Connecting controller	Unchangeable
Destination Path	Destination location where the imported file is located.	

Export - Fixed

Export

Mode: Fixed

No	Usage	Name	Type	HMI Name	Information	Source Path
1	<input checked="" type="checkbox"/>	Export1	16 bits	HMI	Length(3), Group(3)	-0223.rcp

Export - Variance

Export

Mode: Variance

No	Usage	Name	Type	HMI Name	File Name	File Name Length	Controller	Source Path
1	<input checked="" type="checkbox"/>	Export16(1)	16 bits	HMI	\$100	4	Internal Memory	C:\
2	<input type="checkbox"/>	Export32(1)	32 bits	HMI	None	1		

Setting Item	Description	Remark
No.	Excel Sheet index which the sampling data will be written.	Unchangeable
Usage	If the users want to select 16-bit recipe, enable this option by checking the check box.	
Name	Recipe display name	
Type	Recipe Bit type	Unchangeable
HMI Name	Name of connecting HMI	
Information	Length and Group of the recipe.	Unchangeable
File Name	It is the register address of a certain trigger element. Please note: When the data format is set to Word, the data format of the sampling register address could be Unsigned only.	

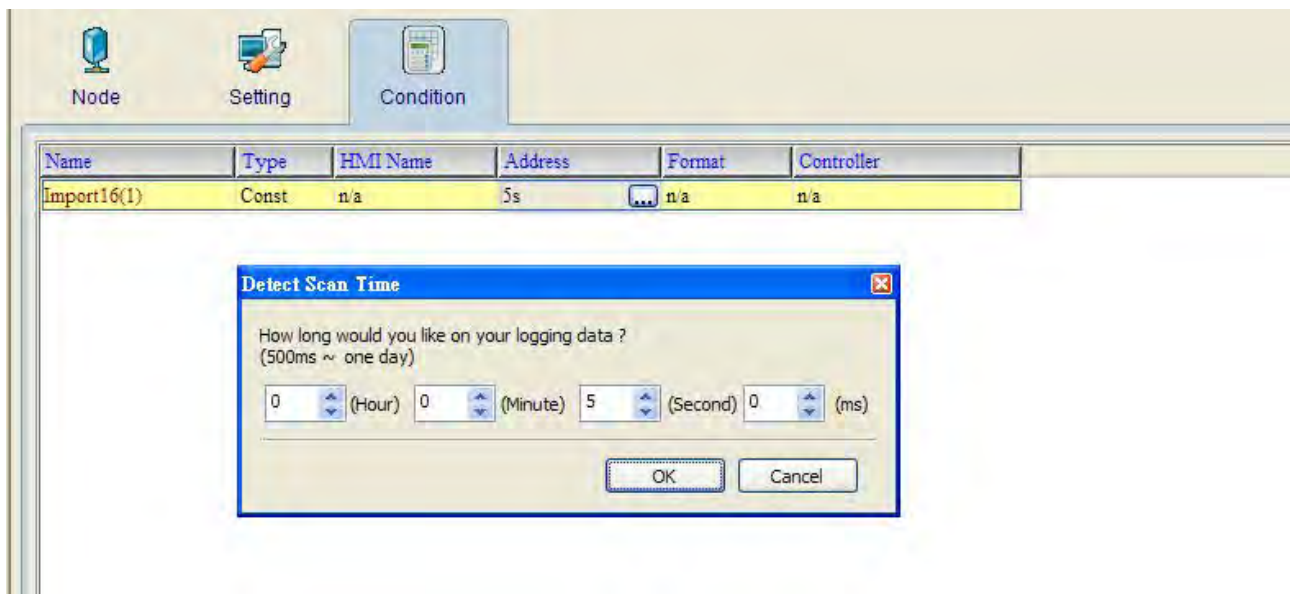
Setting Item	Description	Remark
File Name Length	Number of characters by referring the user-defined file name.	
Controller	Connecting controller	Unchangeable
Source Path	Destination location where the exported file is located.	

10.1.3 Sampling Conditions

This step is used to set the sampling conditions. There are two kinds of options for selection:

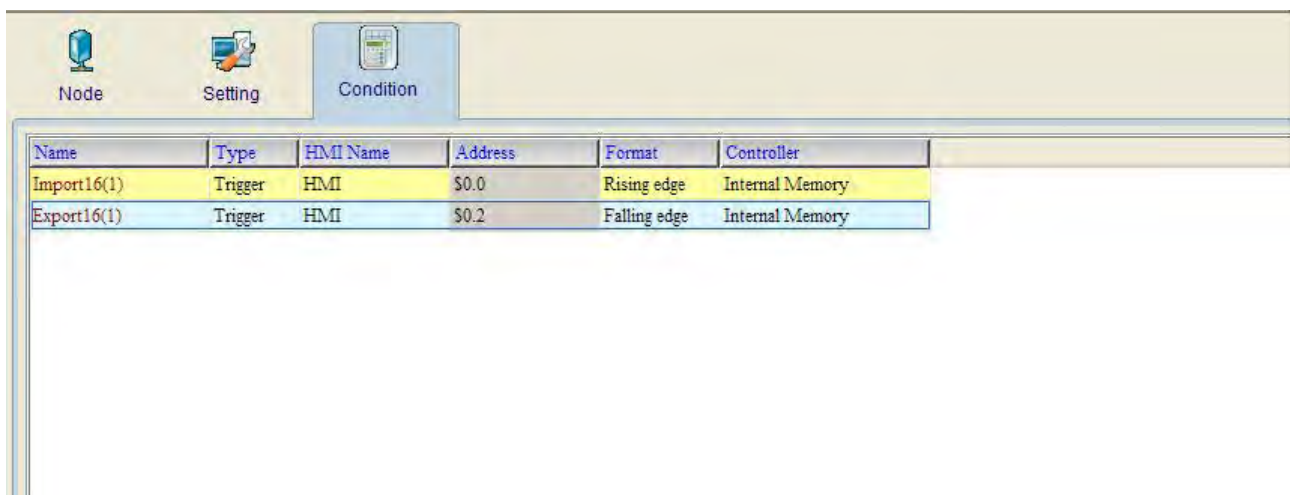
1. Const (execute sampling repeatedly in a certain span of time)

This option is used to determine how long the sampling process is repeated. The time unit can be defined as ms, second, minute or hour.



2. Trigger (Execute sampling when the trigger conditions are satisfied)

This option is used to determine how long the sampling process is repeated when the trigger conditions are met. The detailed settings are described as follows:



Polling Cycle (Sampling Cycle): It is used to determine how long the sampling process is repeated. The time unit is ms.

Logging Condition:

Setting Item	Description	Remark
No.	Condition number	Unchangeable
Type	Sampling type. There are two kinds of options for selection: Const and Trigger. Const: Execute sampling repeatedly in a certain span of time. Trigger: Execute sampling when the trigger conditions are satisfied.	
HMI Name	Name of connecting HMI	
Detail	Register Address	
Format	1. When the register address is set to Bit, the selectable options are: A. Rising edge: Triggered by rising-edge B. Falling edge Triggered by falling-edge	
Controller	Connecting controller	Unchangeable

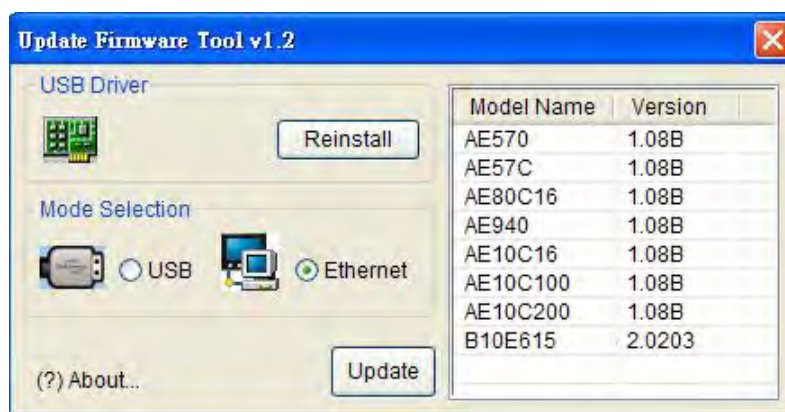
Chapter 11 Recipe Access Example

Before creating testing example, make sure to change the upload and download option (**Options > Configuration**) on Screen Editor first. The default setting of upload and download is via **USB**. If the users need to use **Ethernet**, please change the default setting by referring to **Appendix A**.

11.1 Creating Example

Update Firmware

Remember to update the firmware before using eServer. To select this function, click **Start > Programs > Delta Industrial Automation > HMI > DOP eServer 1.00.0x > Update Firmware Tool**. After clicking **Update Firmware Tool**, the following dialog box will appear for the users to select the communication interface (the default setting is USB driver). Press **Update** button to update HMI firmware automatically.



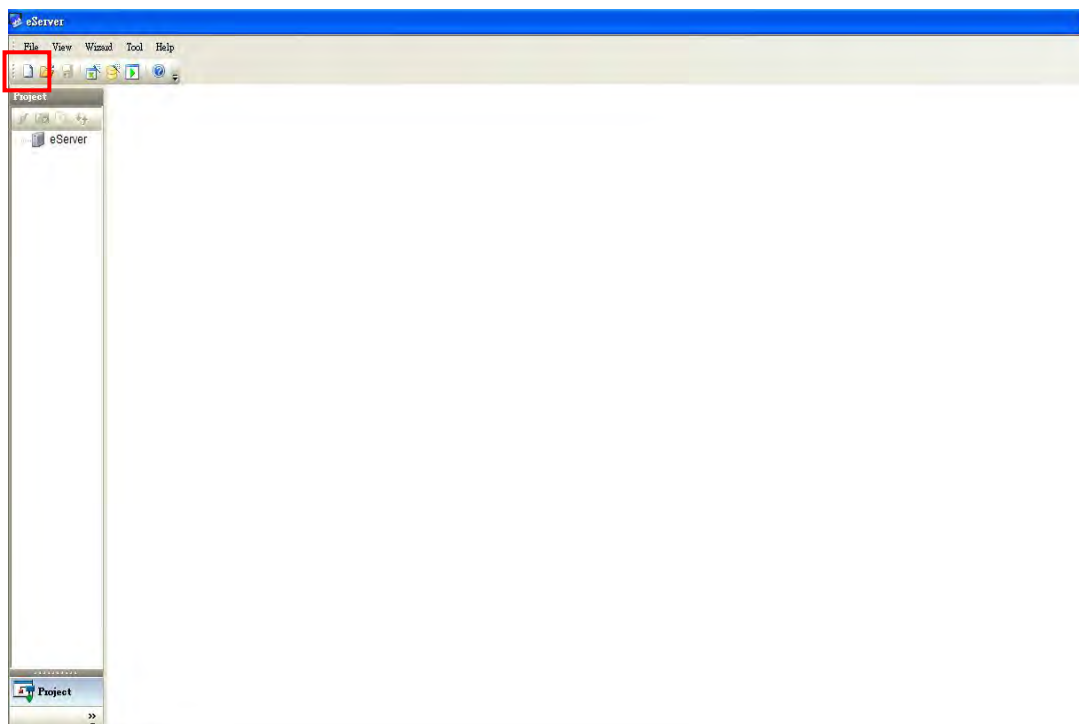
Start eServer

To start eServer, click **Start > Programs > Delta Industrial Automation > HMI > DOP eServer 1.00.0x > eServer**.

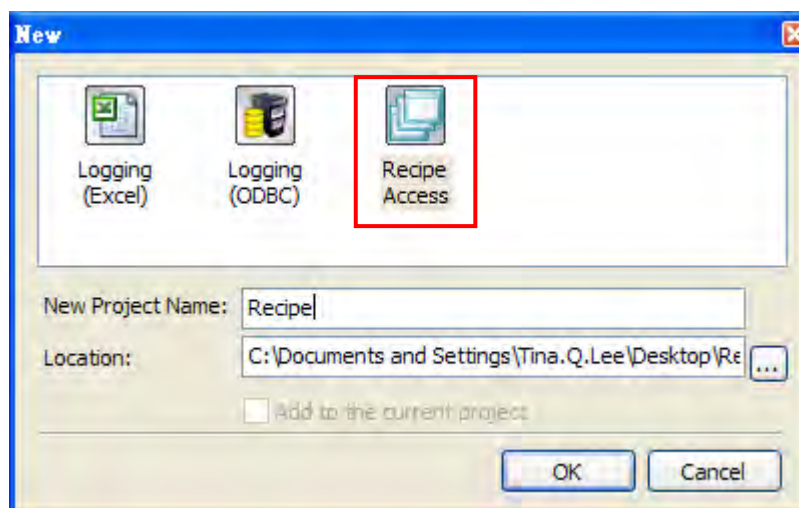


11.1.1 New Project


Start eServer, and click **File > New** or click **New** icon



After the **New** dialog box is opened, select **Recipe Access** icon and enter the file name **Recipe** for the Recipe Access database. Then, press **OK** button.

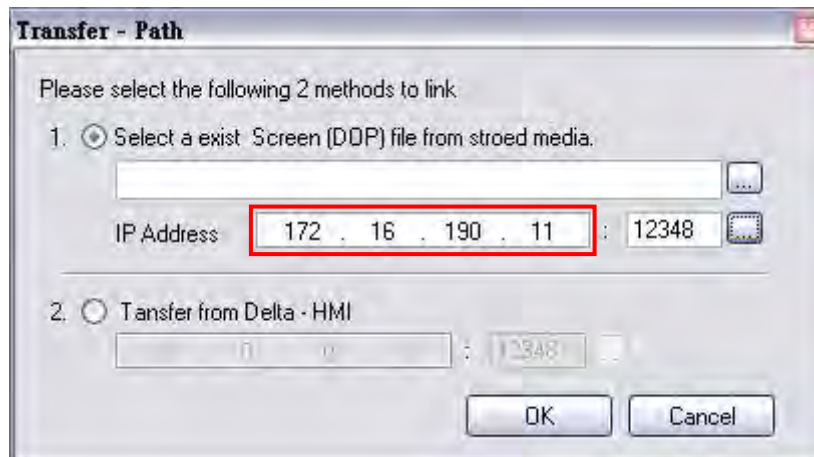


11.1.2 Node

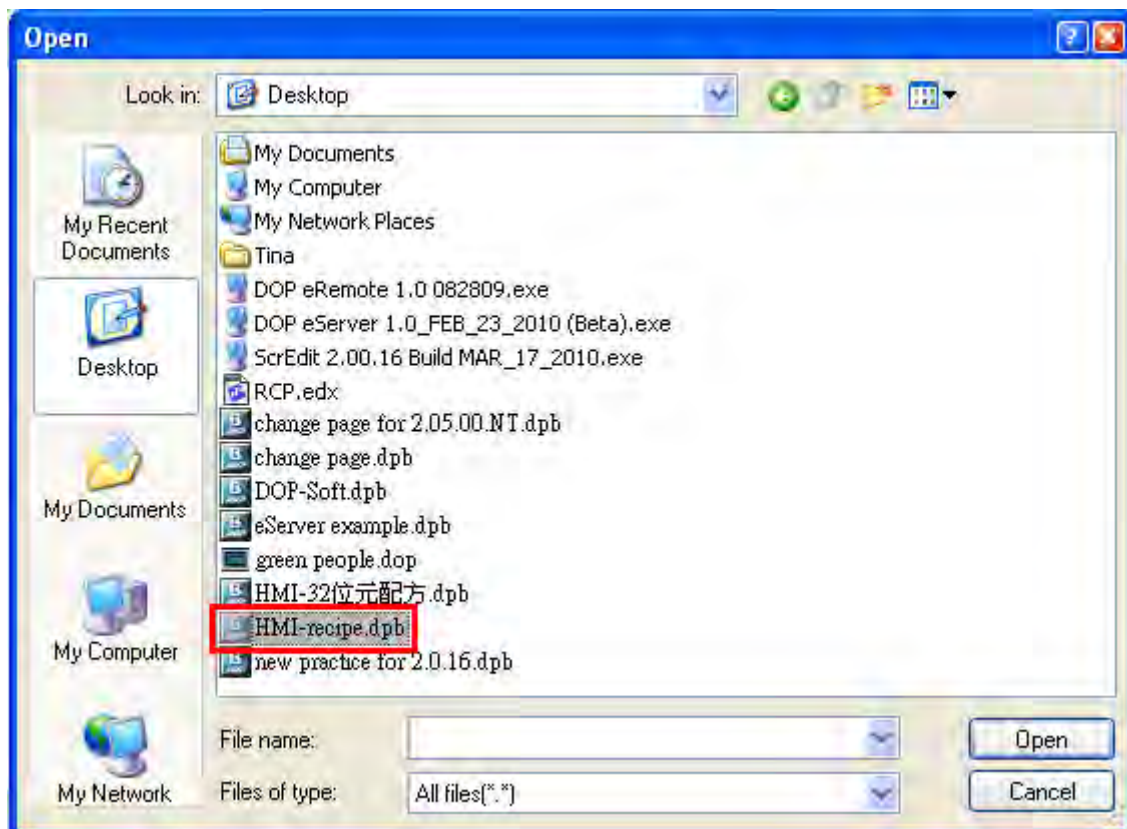
Click  icon to link HMI screen project file. There are two methods available for selection. Here choose **Select an existing Screen (DOP) file from stored media** option to create a new node.

Select an existing Screen (DOP) file from stored media

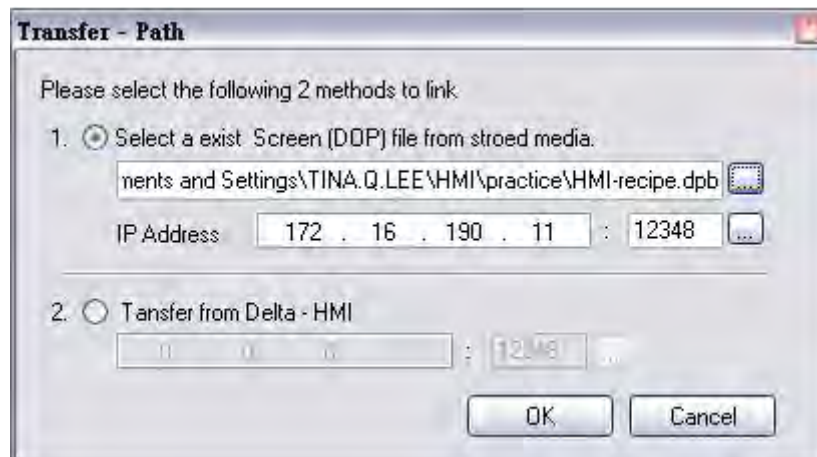
Open an existing screen project file (HMI-recipe.dpb) and set the IP address of the connecting HMI. The IP address is set to **172.16.190.11**



Press **OK** button to go to next step.



After selecting the recipe file and setting the IP address, press **OK** button to go to next step.



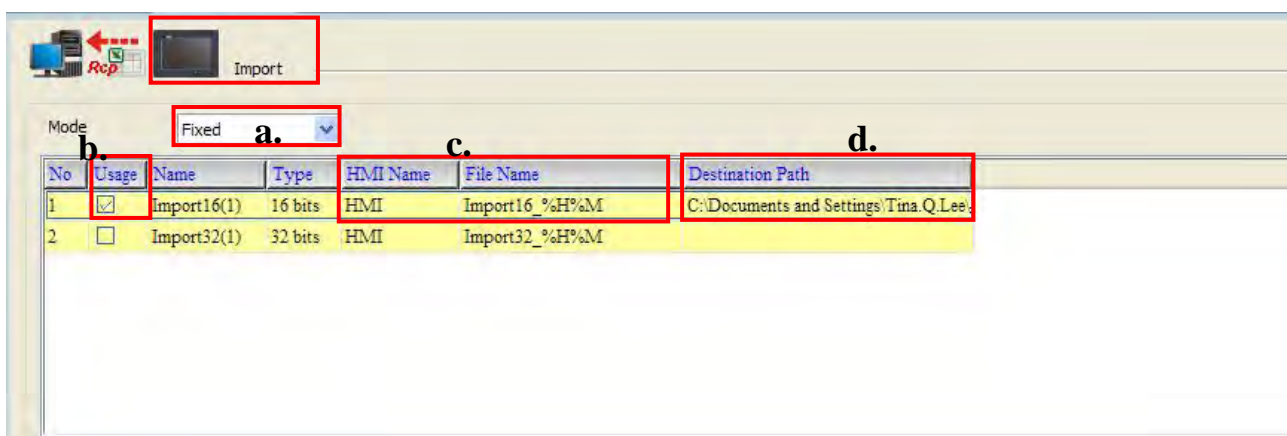
11.1.3 Setting and Condition - Import

When the node is set correctly, click **Setting** and complete the settings next. There are two modes, Import and Export available for selection. Each mode provides two options, Fixed or Variance from the drop-down list for use.

Import – Fixed

Setting :

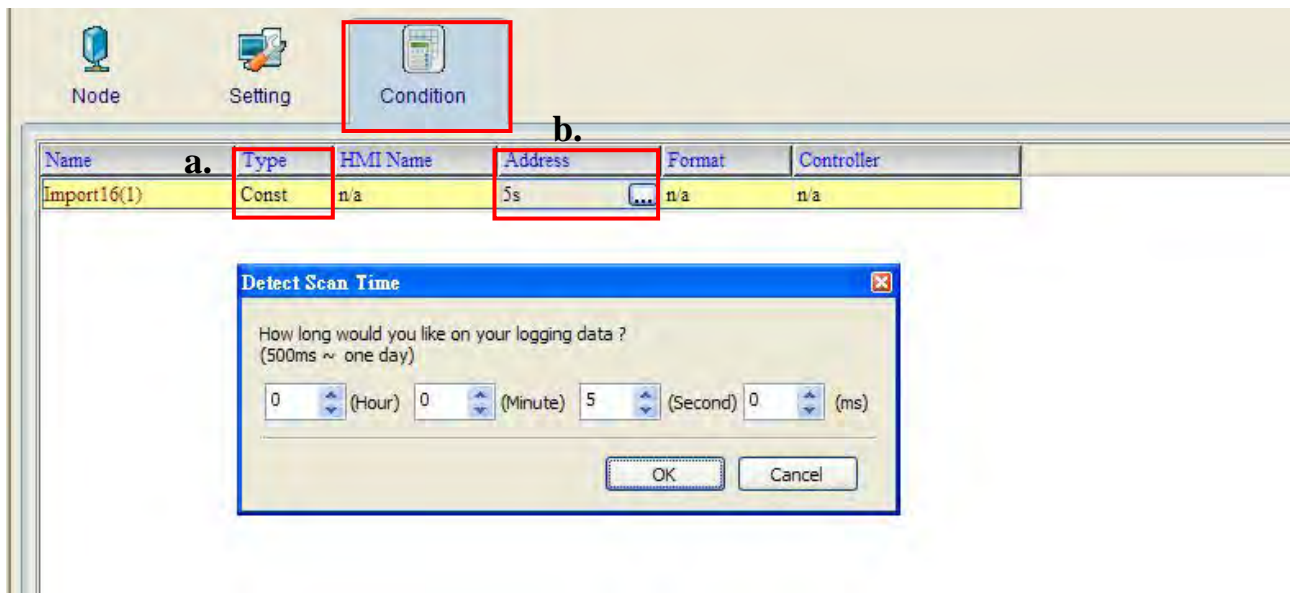
- Select **Fixed**.
- Check the check box to use **16-bit recipe** as the example.
- User-define the **HMI Name** and **File Name** (file name of the imported file).
- Set **Destination Path** (destination location) where the imported file is located.



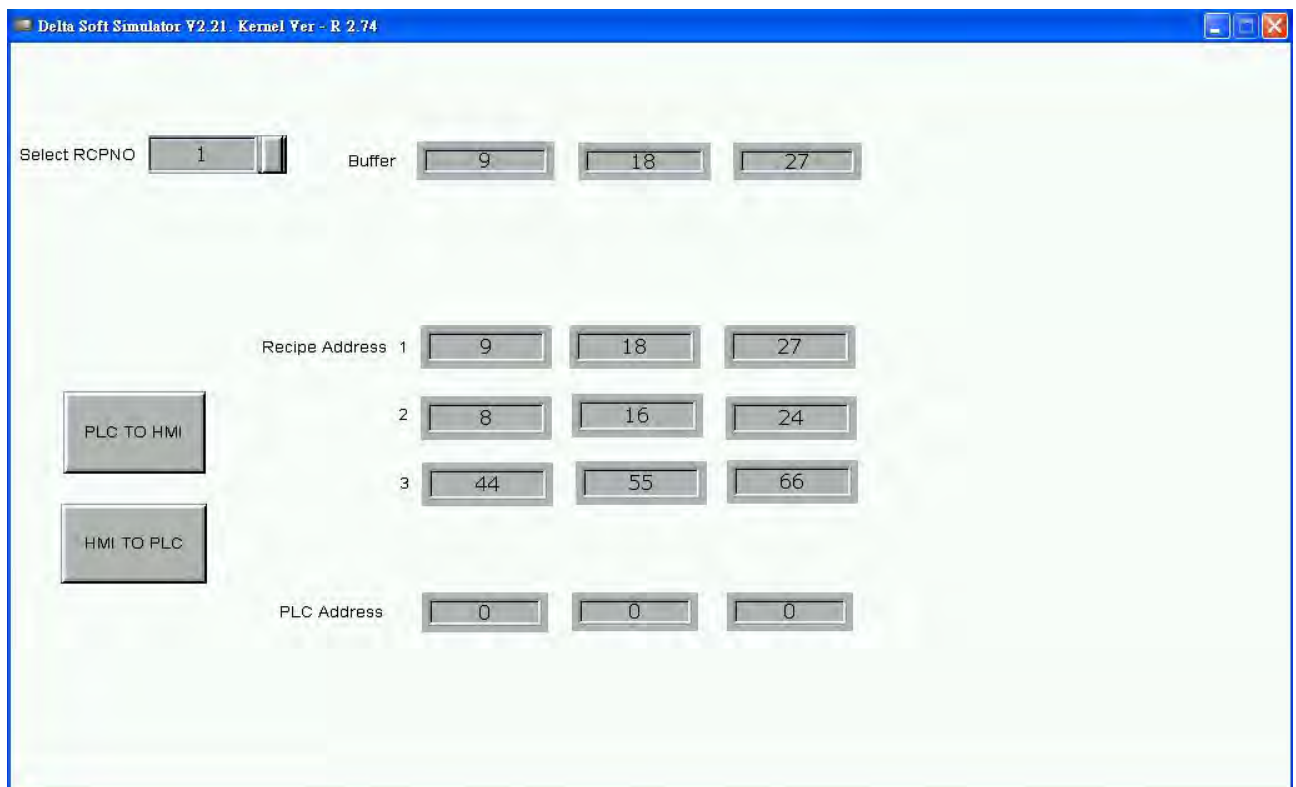
Condition :

As for the method of sampling condition, select **Const** (execute sampling repeatedly in a certain span of time).

- Select **Const**.
- Set **Polling Cycle** (sampling cycle) to **5s** (default setting value).



After completing all the settings on eServer, use the most updated Screen Editor program editing software to open the selected .dpb file which just has been modified on eServer. Then, compile it and download the recipe data to HMI. The screen data will be shown as the figure below:

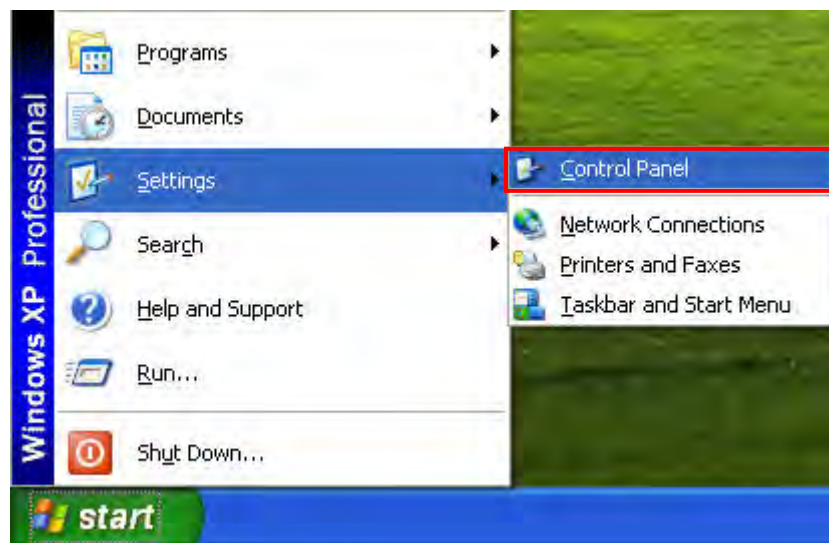


After downloading the recipe data, please make sure that the IP address numbers of subnet masks of the PC (172.16.190.1) and HMI (172.16.190.11) are the same; otherwise, HMI may not be displayed in the list when finding node.

Networking Settings

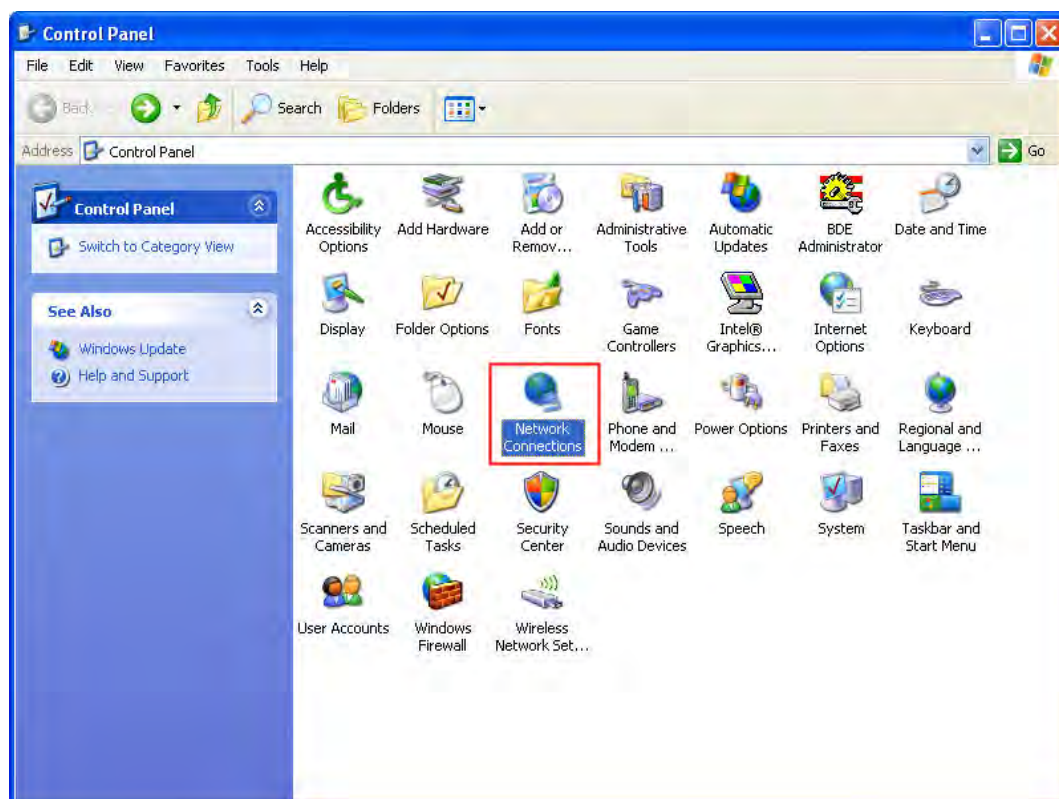
Ensure to observe the following instructions to complete PC networking settings before eServer operation.

Setting PC Network

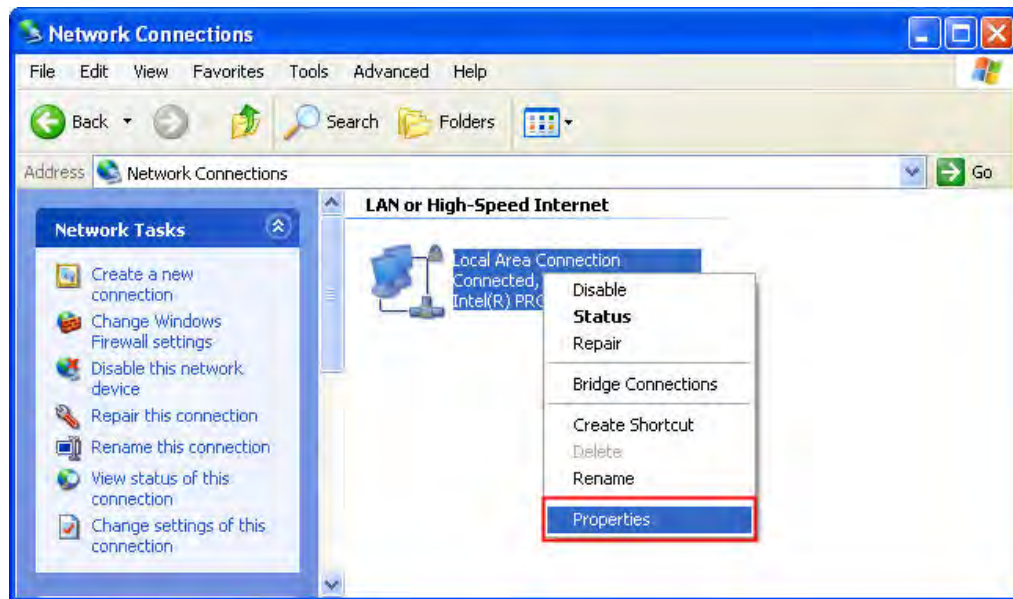


Power on PC and start Windows. Click **Start > Programs**, point to Control Panel, and then

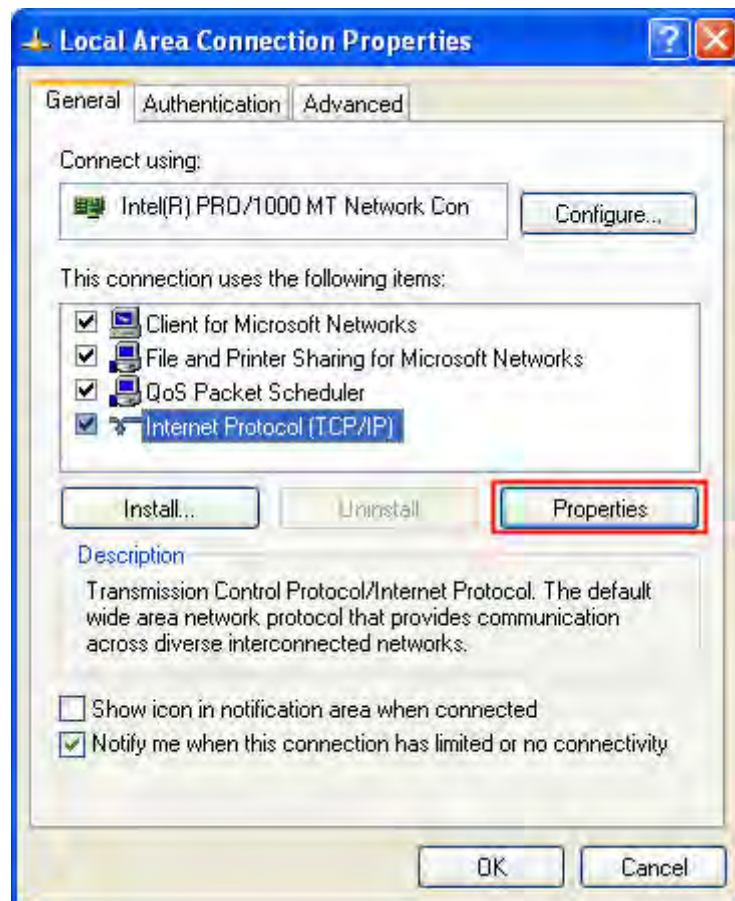
select **Network Connections** ()..



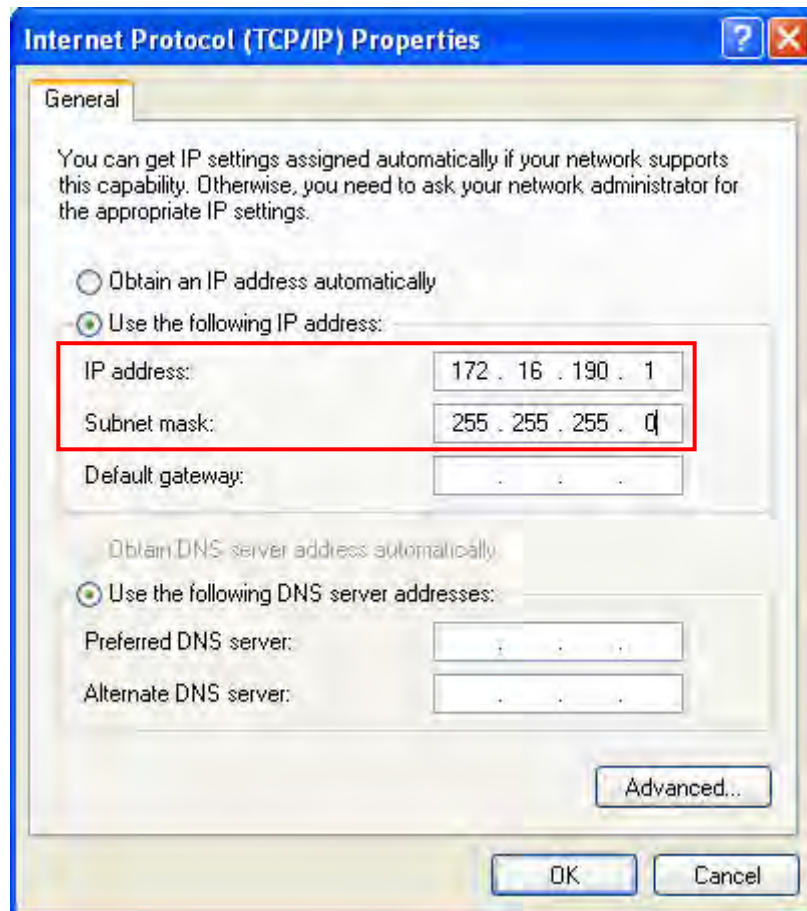
Double-click **Network Connections** icon, the following windows will appear. Right-click the **Local Area Connection** icon, and then select **Properties** from the pop-up menu.



The **Local Area Connection Properties** dialog box will open. Use **General** tab to select **Internet Protocol (TCP/IP)**. Then, press **Properties** button.



The **Internet Protocol (TCP/IP) Properties** dialog box will open. Choose **Use the following IP address** and enter the IP address numbers of the PC into the field of **IP address** and **Subnet mask**.



Then, press **OK** button to finish the settings.


Setting IP Address in HMI

Enter into the system menu and set IP address to 172.16.190.11. Please see the figure below:




After networking settings are set correctly and successfully, return to eServer, save the file first and then run the recipe data. Please see the figure below:



Press  icon. The following dialog box will pop-up and ask the users to enter the password.



Please enter 12345678 in the field of the password at the first time (12345678 is the default setting value and the users can change it freely). After the correct password is entered, the  icon will display on the tool bar at the left-bottom corner.

When eServer performs reading, the system will examine and check if the saved file name



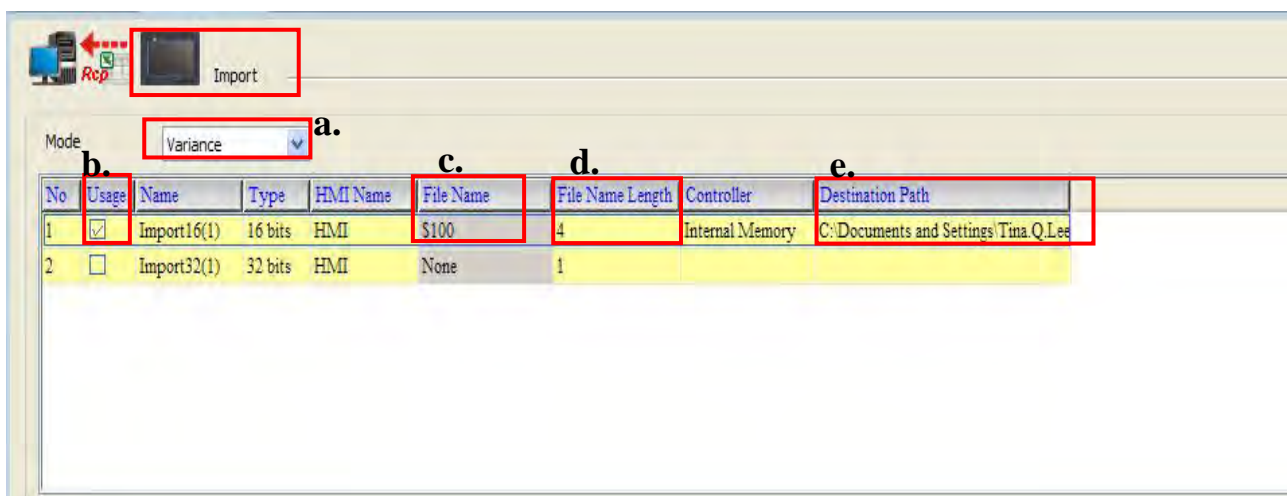
is saved in the destination path or not. Please refer to the figure such as

On the other hand, if incorrect or invalid password is entered, the following error message dialog box will appear to alert the users.



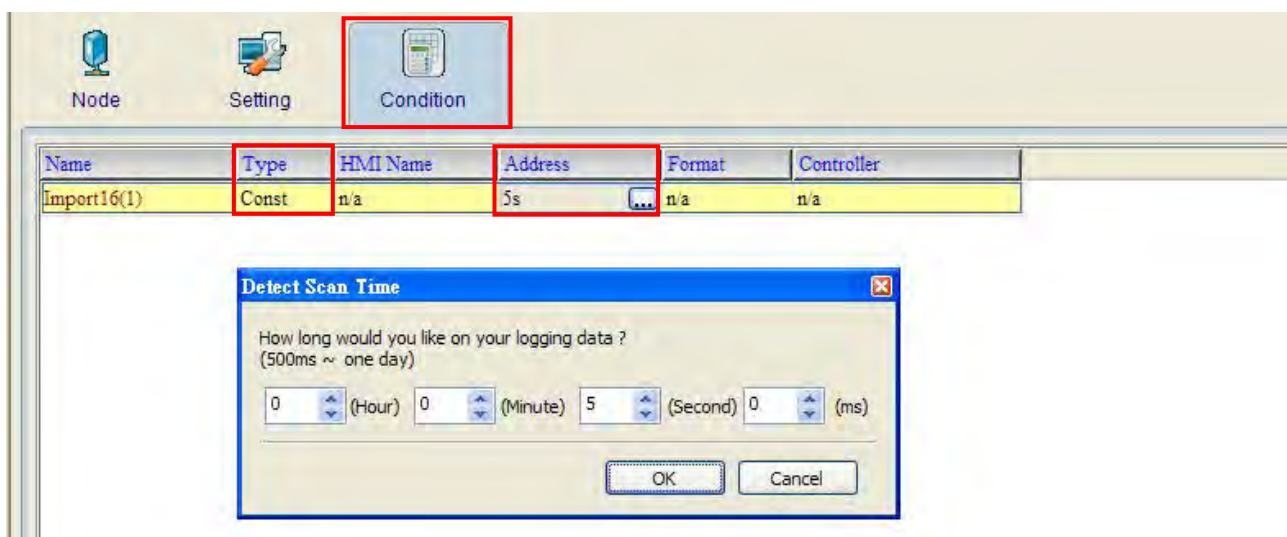
Import - Variance**Setting :**

- Select **Variance**.
- Check the check box to use **16-bit recipe** as the example.
- Set the **File Name** (file name of the imported file) to be the same as the register address of HMI. (In this case \$100 character input element is used)
- Set **File Name Length** (number of the imported characters). (In this case the File Name Length is set to 4. This is because the name of the imported file is Tina.csv. The system will refer to "Tina" these four characters and convert the imported file to Tina.rcp and then save it to the destination path.)
- Set **Destination Path** (destination location) where the imported file is located.

**Condition :**

As for the method of sampling condition, select **Const (execute sampling repeatedly in a certain span of time)**.

- Select **Const**.
- Set **Polling Cycle** (sampling cycle) to **5s** (default setting value).

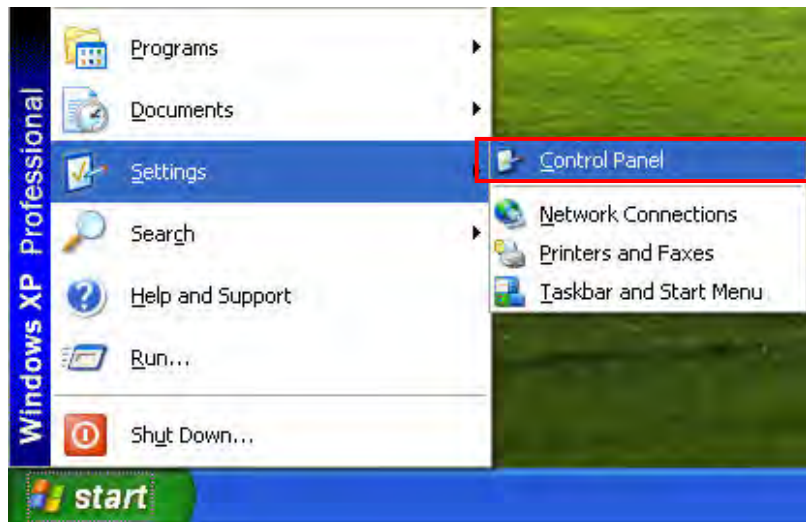


After completing all the settings, please make sure that the IP address numbers of subnet masks of the PC (172.16.190.1) and HMI (172.16.190.11) are the same; otherwise, HMI may not be displayed in the list when finding node.

Networking Settings

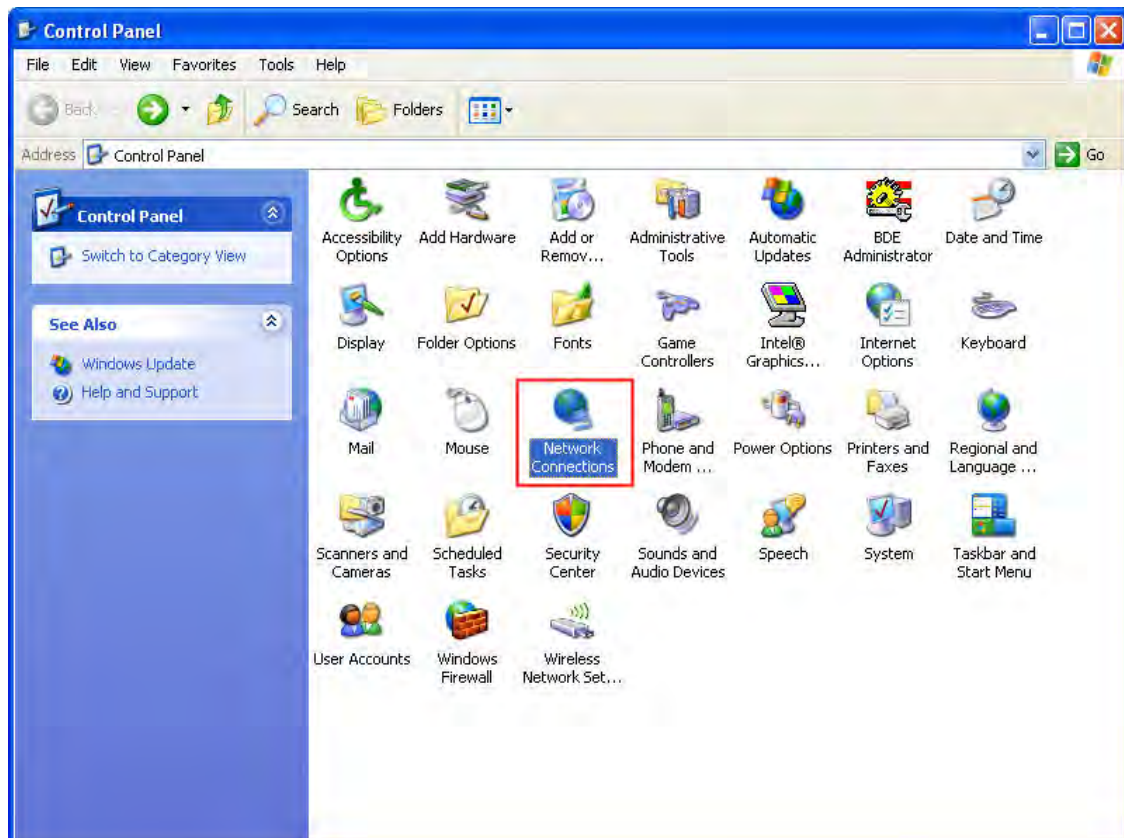
Ensure to observe the following instructions to complete PC networking settings before eServer operation.

Setting PC Network

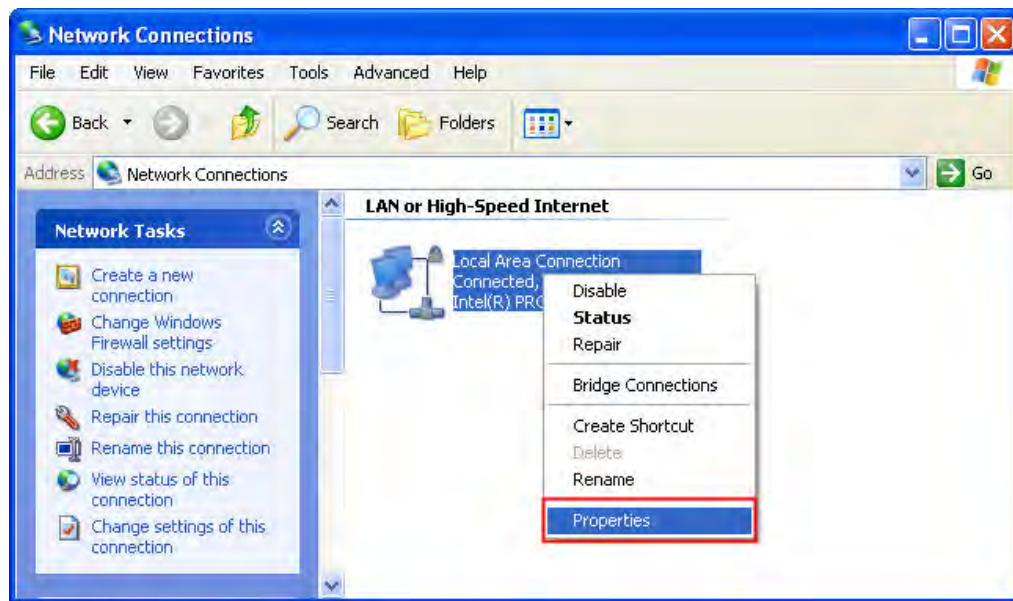


Power on PC and start Windows. Click **Start > Programs**, point to Control Panel, and then

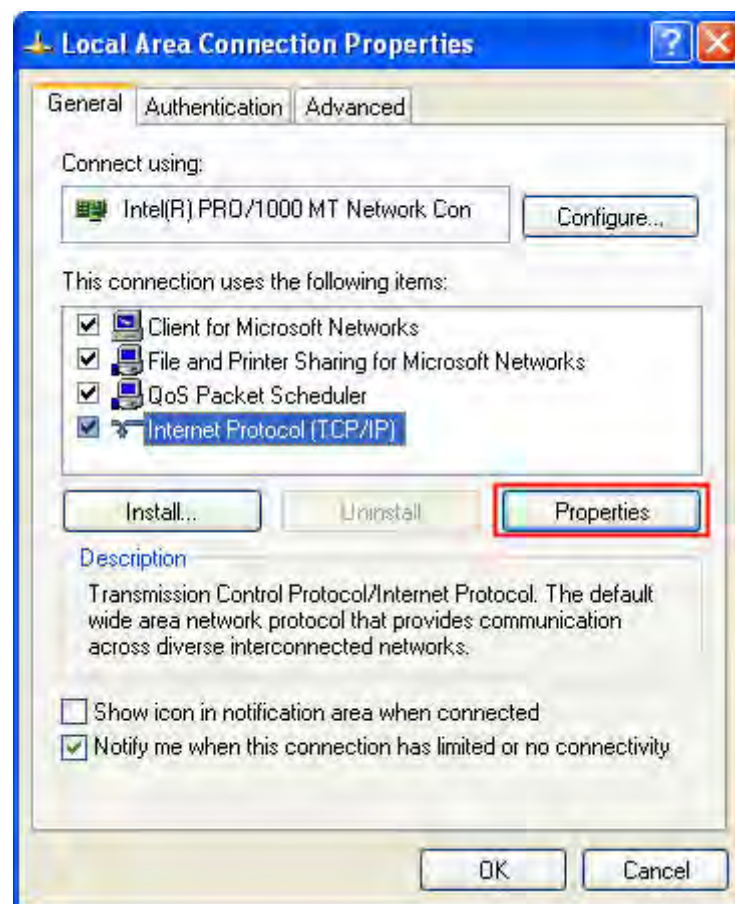
select Network Connections ().



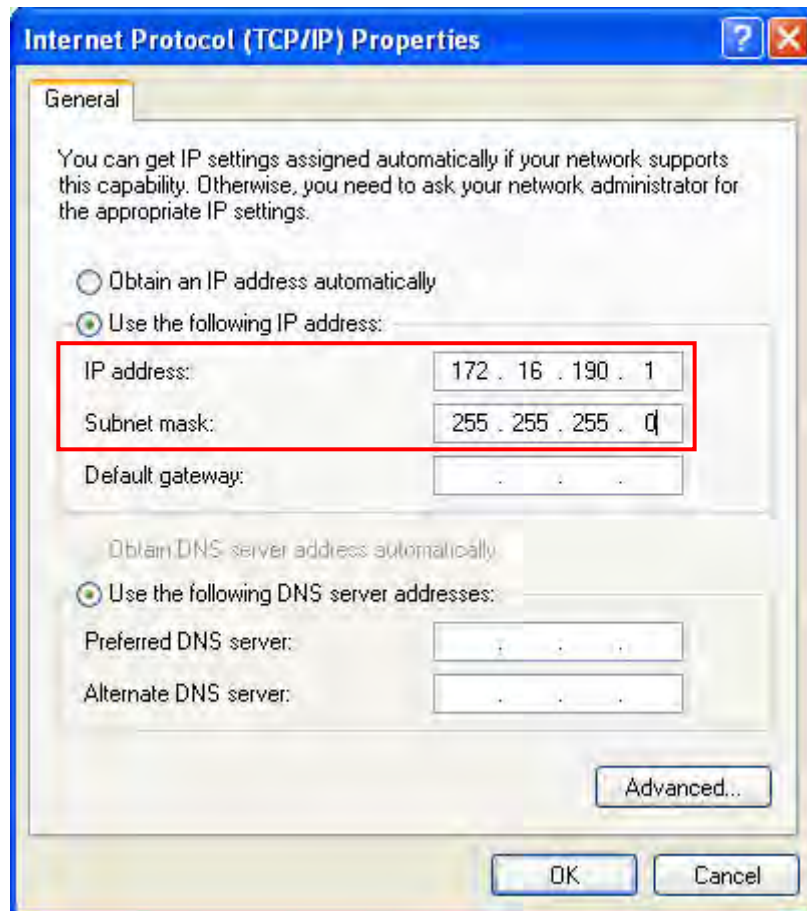
Double-click **Network Connections** icon, the following windows will appear. Right-click the **Local Area Connection** icon, and then select **Properties** from the pop-up menu.



The **Local Area Connection Properties** dialog box will open. Use **General** tab to select **Internet Protocol (TCP/IP)**. Then, press **Properties** button.



The **Internet Protocol (TCP/IP) Properties** dialog box will open. Choose **Use the following IP address** and enter the IP address numbers of the PC into the field of **IP address** and **Subnet mask**.



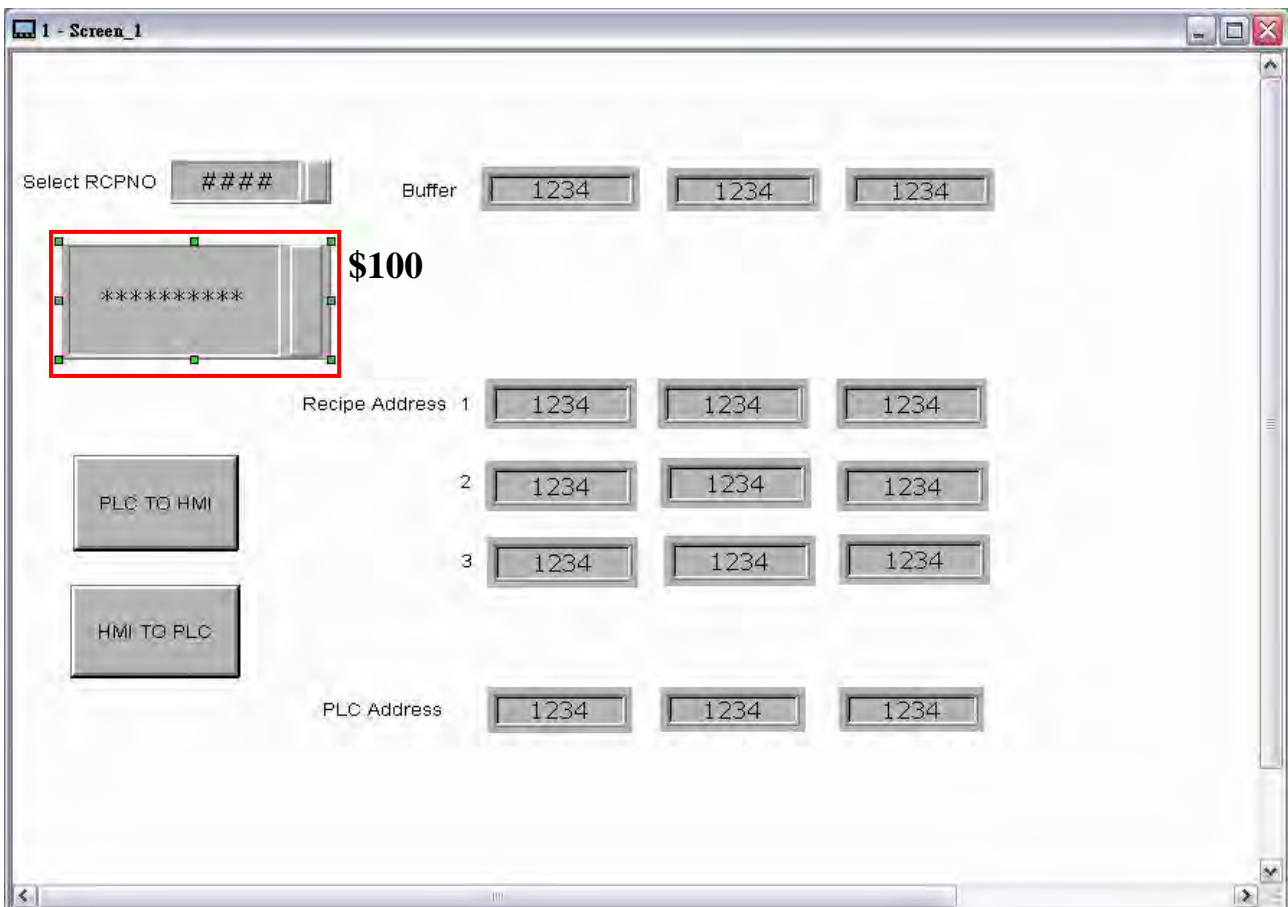
Then, press **OK** button to finish the settings.

Setting IP Address in HMI

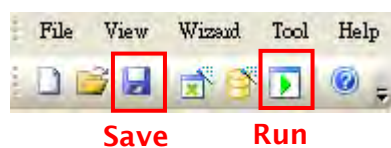
Enter into the system menu and set IP address to 172.16.190.11. Please see the figure below:




After completing all the settings and make sure that the communication is good, use the most updated Screen Editor program editing software to open the selected .dpb file which just has been modified on eServer. Create a character input element and set its address to \$100.




Then, compile it and download the recipe data to HMI. After recipe data is downloaded to HMI successfully, return to eServer, save the file first and then run the recipe data. Next, trigger the character input element on HMI, and the system will save the imported file to the destination path. Please see the figure below:

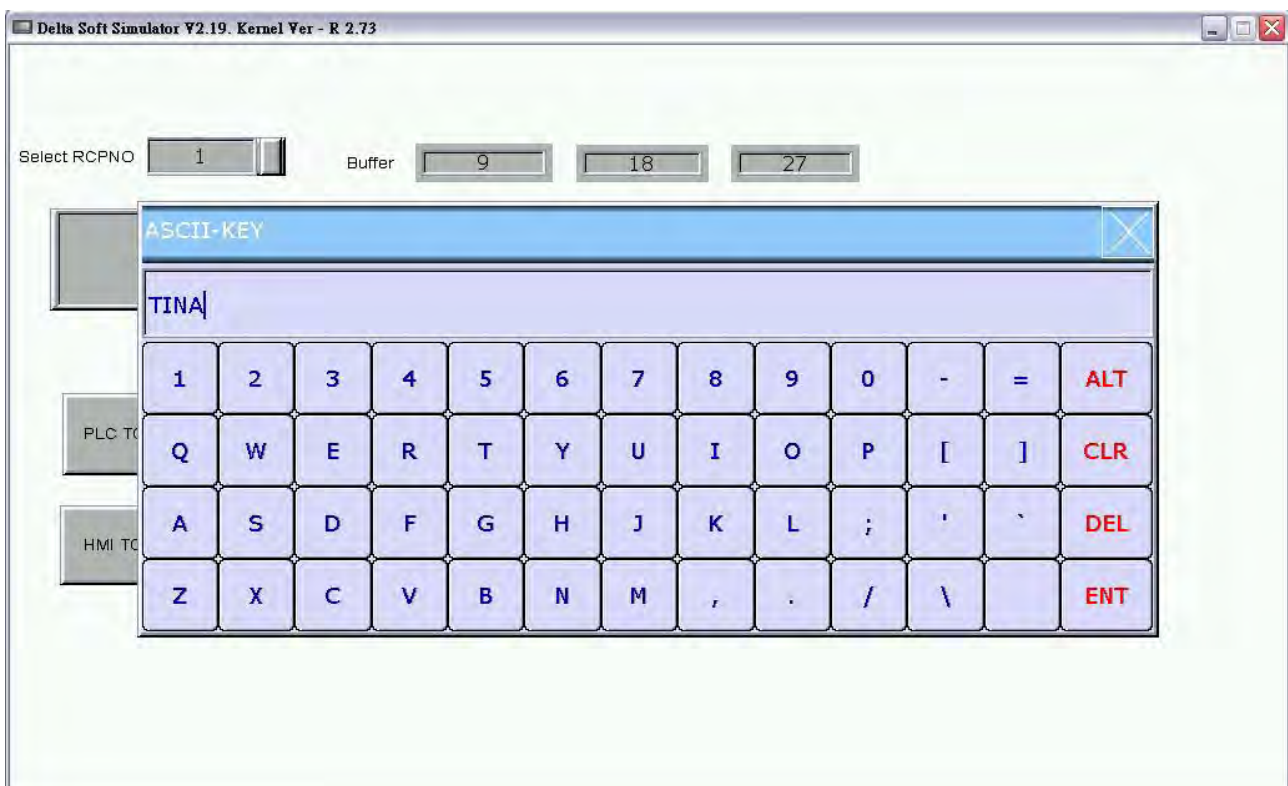


Press  icon. The following dialog box will pop-up and ask the users to enter the password.



Please enter 12345678 in the field of the password at the first time (12345678 is the default setting value and the users can change it freely). After the correct password is entered, the  icon will display on the tool bar at the left-bottom corner.

When eServer performs reading, please trigger the character input element on HMI and enter TINA these four characters. Please refer to the figure below:



Then, the system will examine and check if the saved file name is saved in the destination



path or not. Please refer to the figure such as

On the other hand, if incorrect or invalid password is entered, the following error message dialog box will appear to alert the users.



11.1.4 Setting and Condition - Export

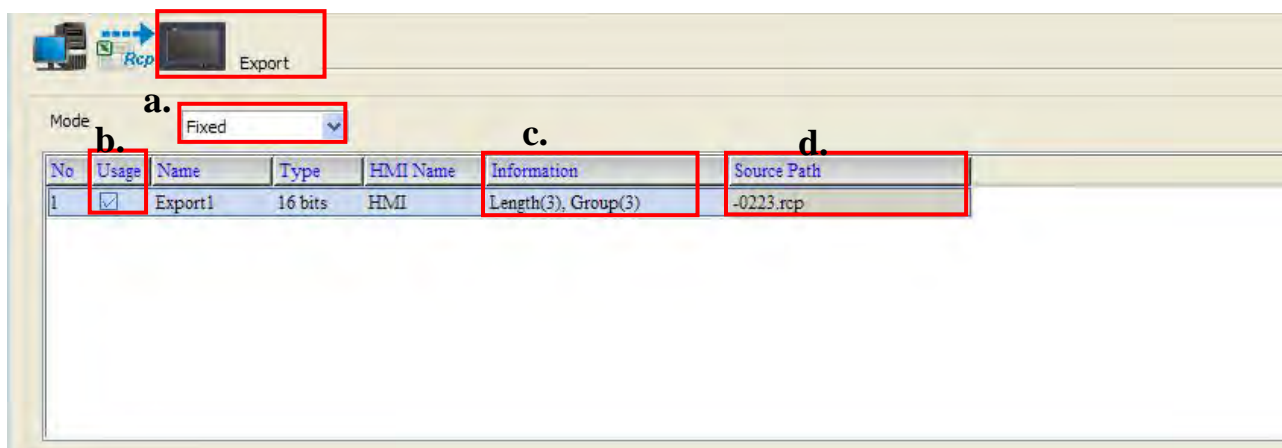
Export – Fixed

Setting :

- Select **Fixed**.
- Check the check box to use **16-bit recipe** as the example.
- Information** shows the length and the group of the recipe data.
- Set **Destination Path** (destination location) where the imported file is located.

Please note: the value of the selected -0223.rcp file (item d.) is the downloading value when the element is triggered on HMI.

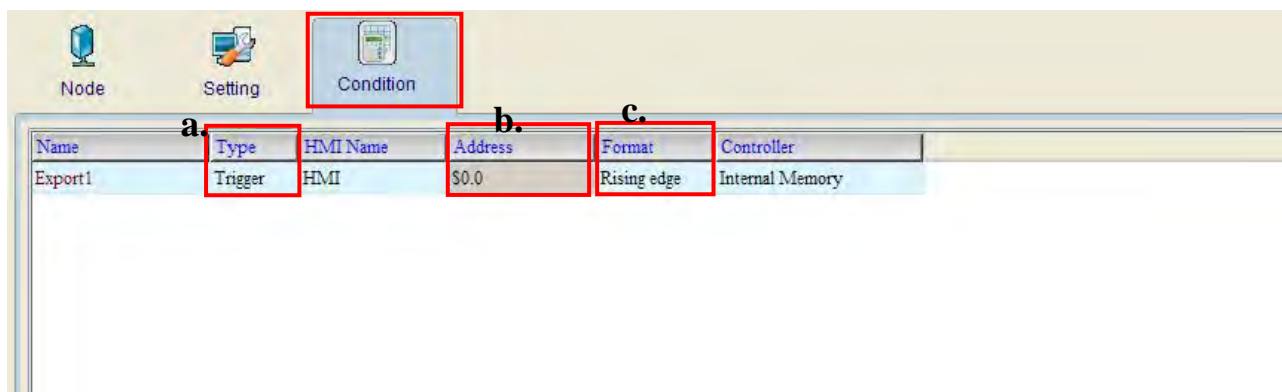
	A	B	C
1	3	3	
2	111	222	333
3	444	555	666
4	777	888	999



Condition :

As for the method of sampling condition, select **Trigger (Execute sampling when the trigger conditions are satisfied)**.

- Select **Trigger**.
- Set **Address** to the register address of the trigger element. (In this case the trigger element is a maintained button element and its address is set to \$0.0)
- Select **Format**. There are two options for selection: **Rising edge** and **Falling edge**. (In this case it is set to Rising edge)

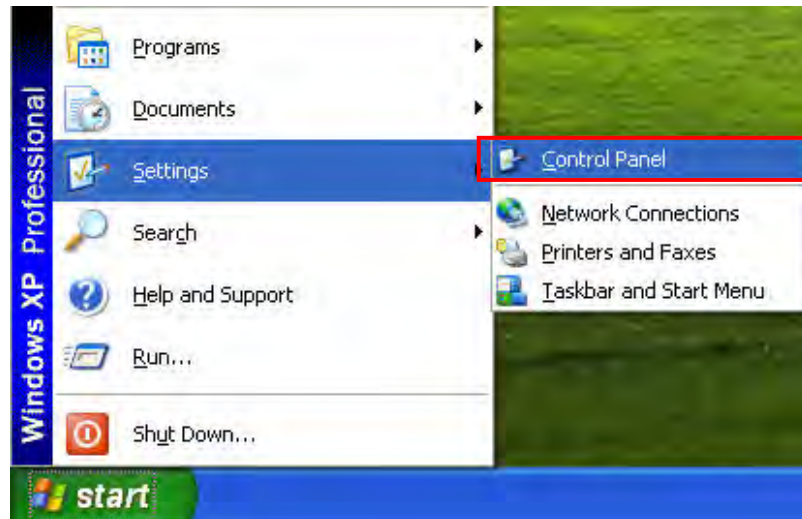


After completing all the settings, please make sure that the IP address numbers of subnet masks of the PC (172.16.190.1) and HMI (172.16.190.11) are the same; otherwise, HMI may not be displayed in the list when finding node.

Networking Settings

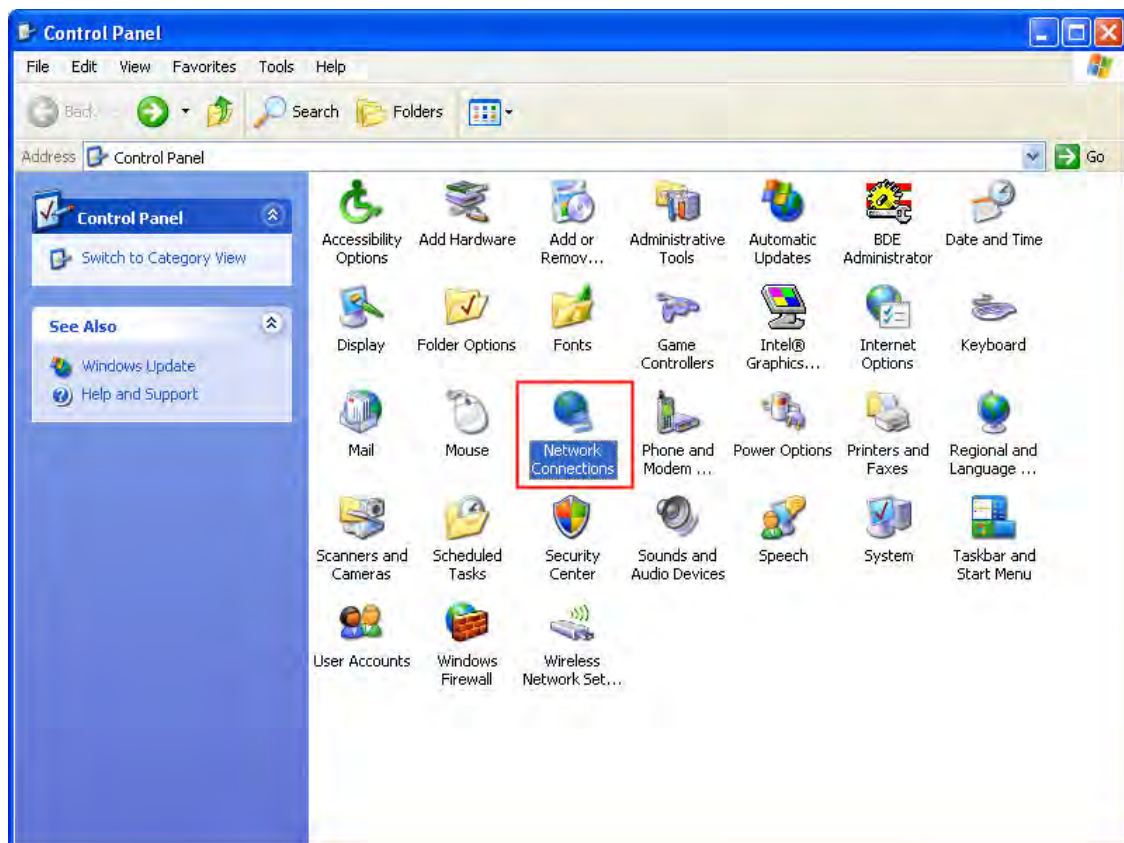
Ensure to observe the following instructions to complete PC networking settings before eServer operation.

Setting PC Network

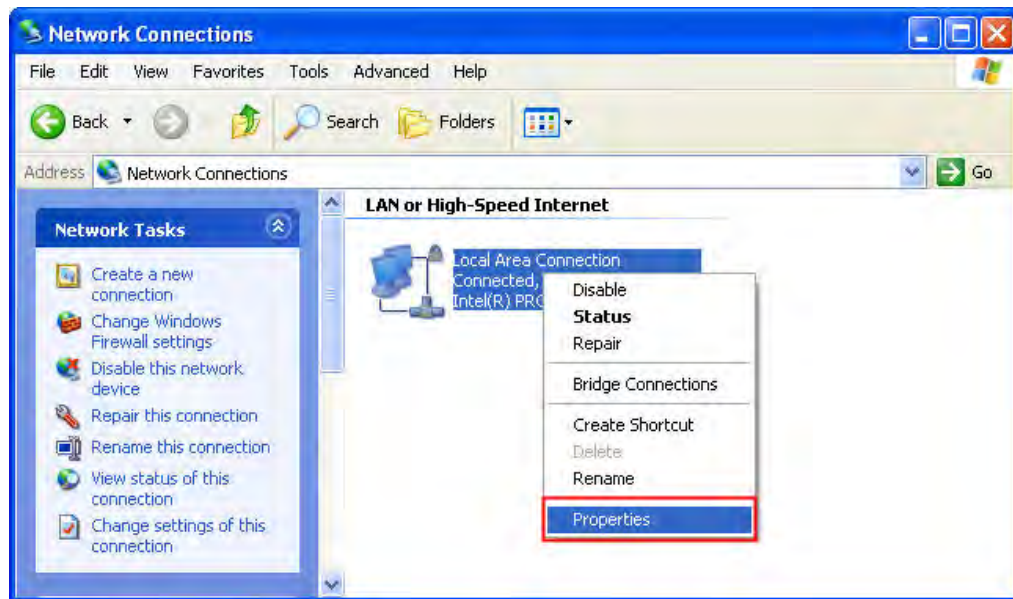


Power on PC and start Windows. Click **Start > Programs**, point to Control Panel, and then

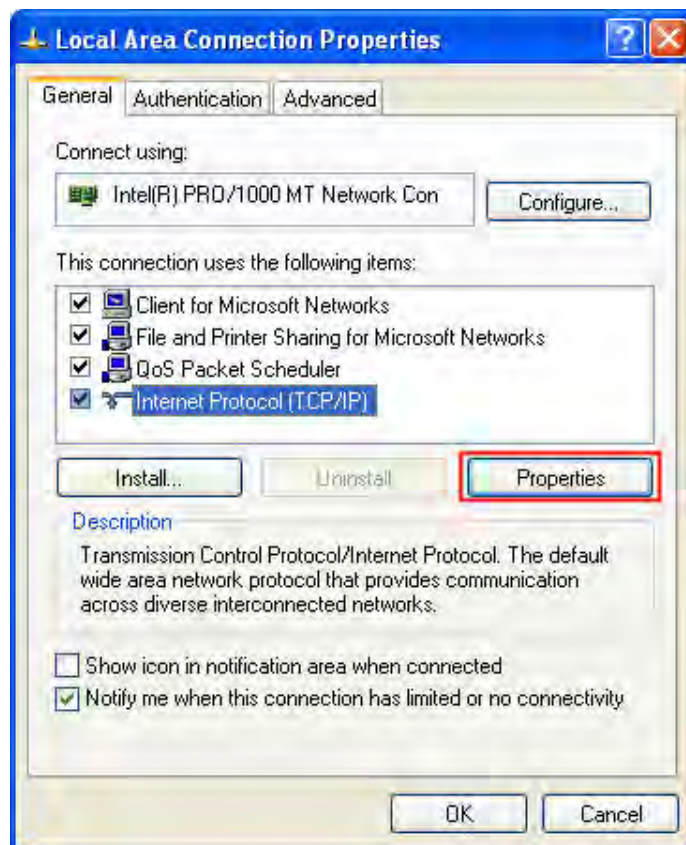
select Network Connections ().



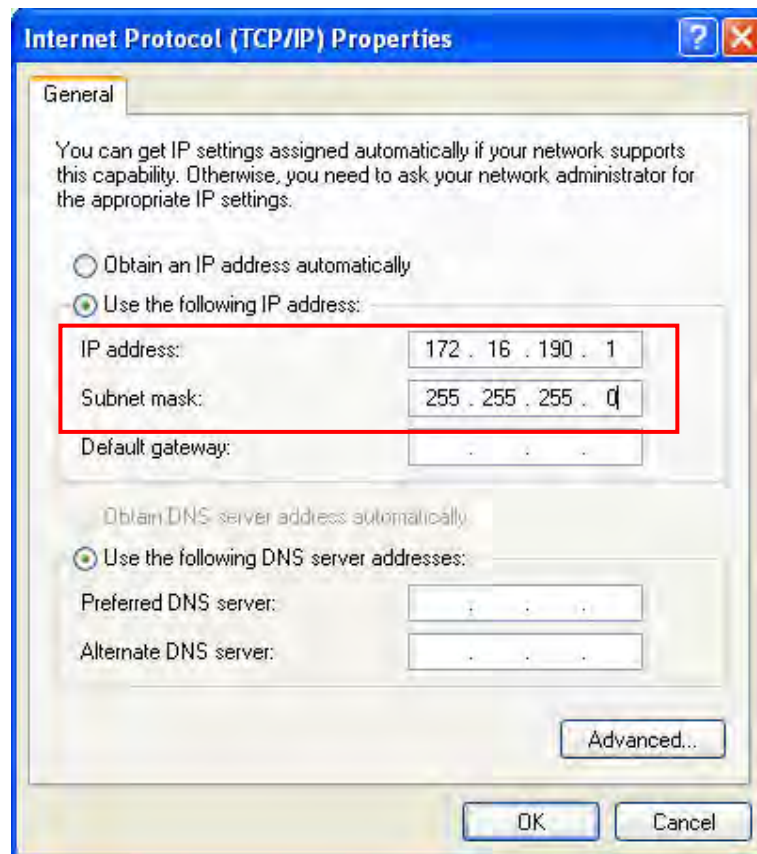
Double-click **Network Connections** icon, the following windows will appear. Right-click the **Local Area Connection** icon, and then select **Properties** from the pop-up menu.



The **Local Area Connection Properties** dialog box will open. Use **General** tab to select **Internet Protocol (TCP/IP)**. Then, press **Properties** button.



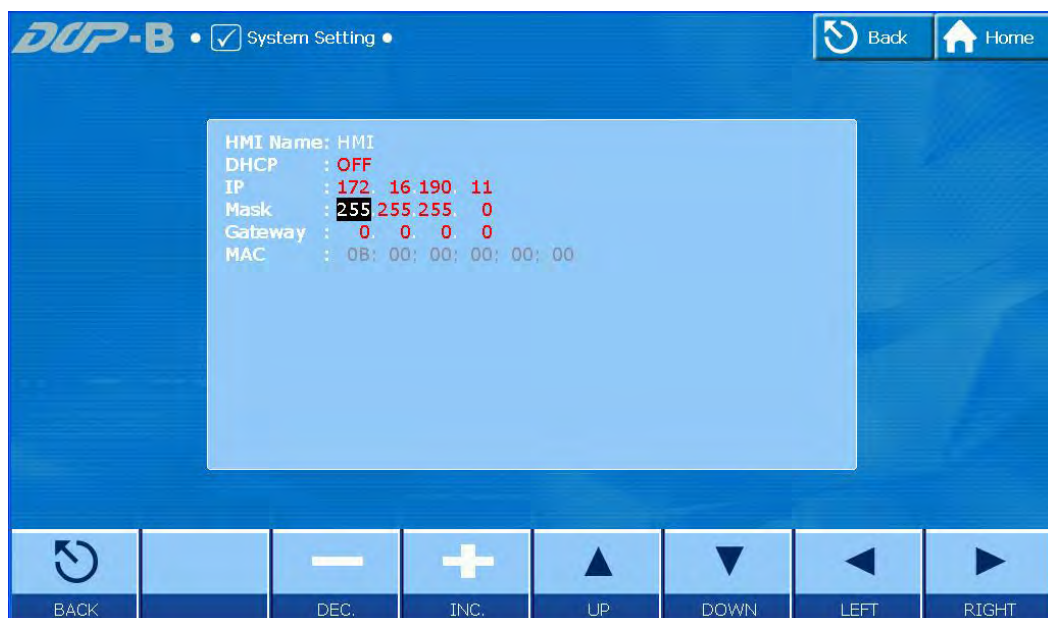
The **Internet Protocol (TCP/IP) Properties** dialog box will open. Choose **Use the following IP address** and enter the IP address numbers of the PC into the field of **IP address** and **Subnet mask**.



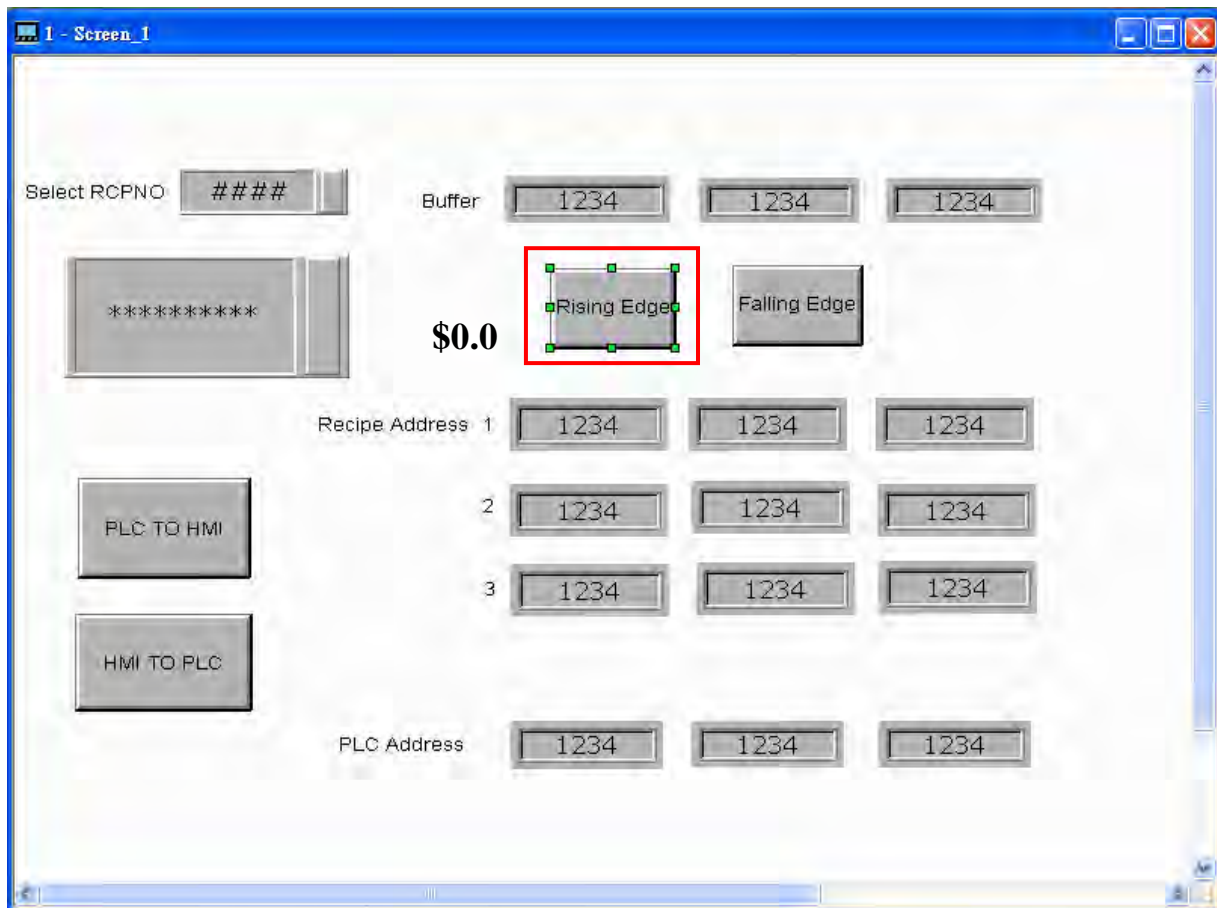
Then, press OK button to finish the settings.

Setting IP Address in HMI

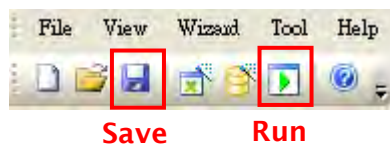
Enter into the system menu and set IP address to 172.16.190.11. Please see the figure below:




After completing all the settings and make sure that the communication is good, use the most updated Screen Editor program editing software to open the selected .dpb file which just has been modified on eServer. Create a maintained button element and set its address to \$0.0.




Then, compile it and download the recipe data to HMI. After recipe data is downloaded to HMI successfully, return to eServer, save the file first and then run the recipe data. Next, trigger the numeric input element on HMI, and the system will save the imported file to the destination path. Please see the figure below:



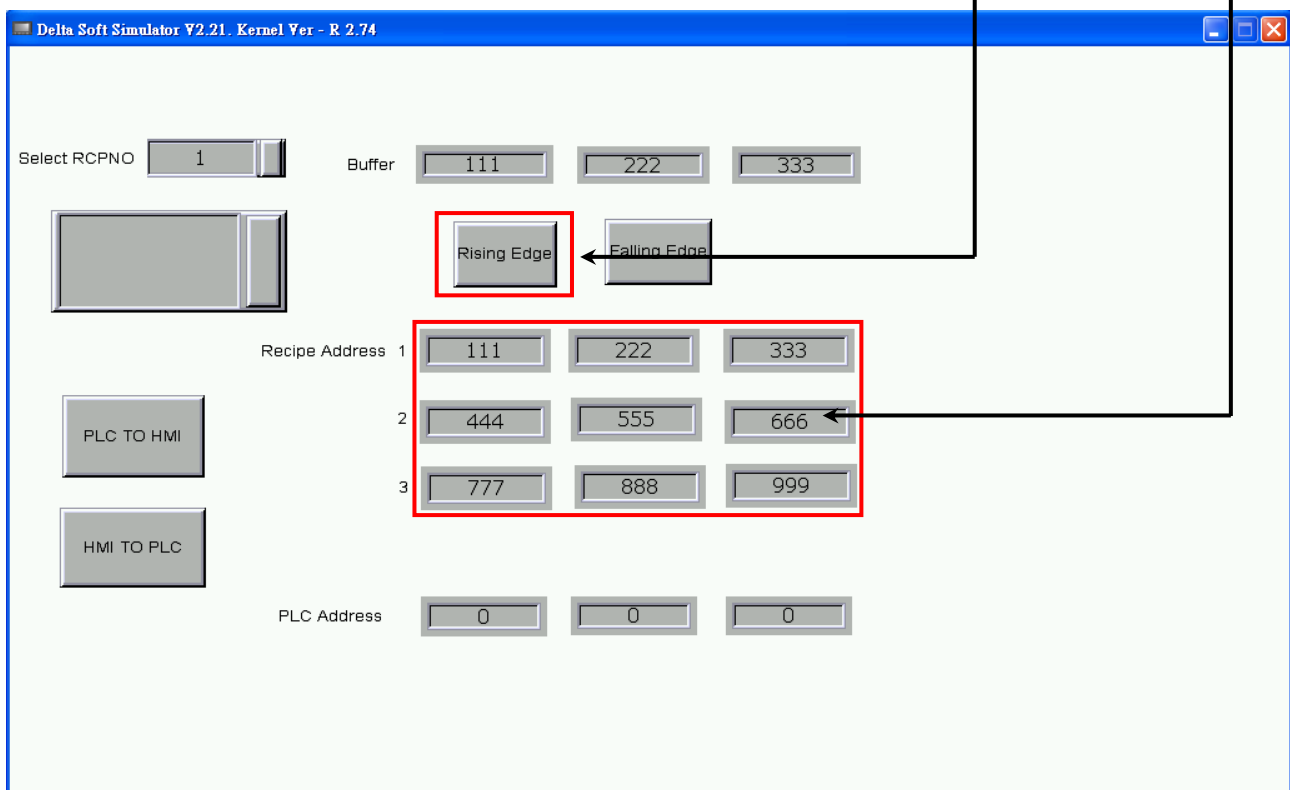
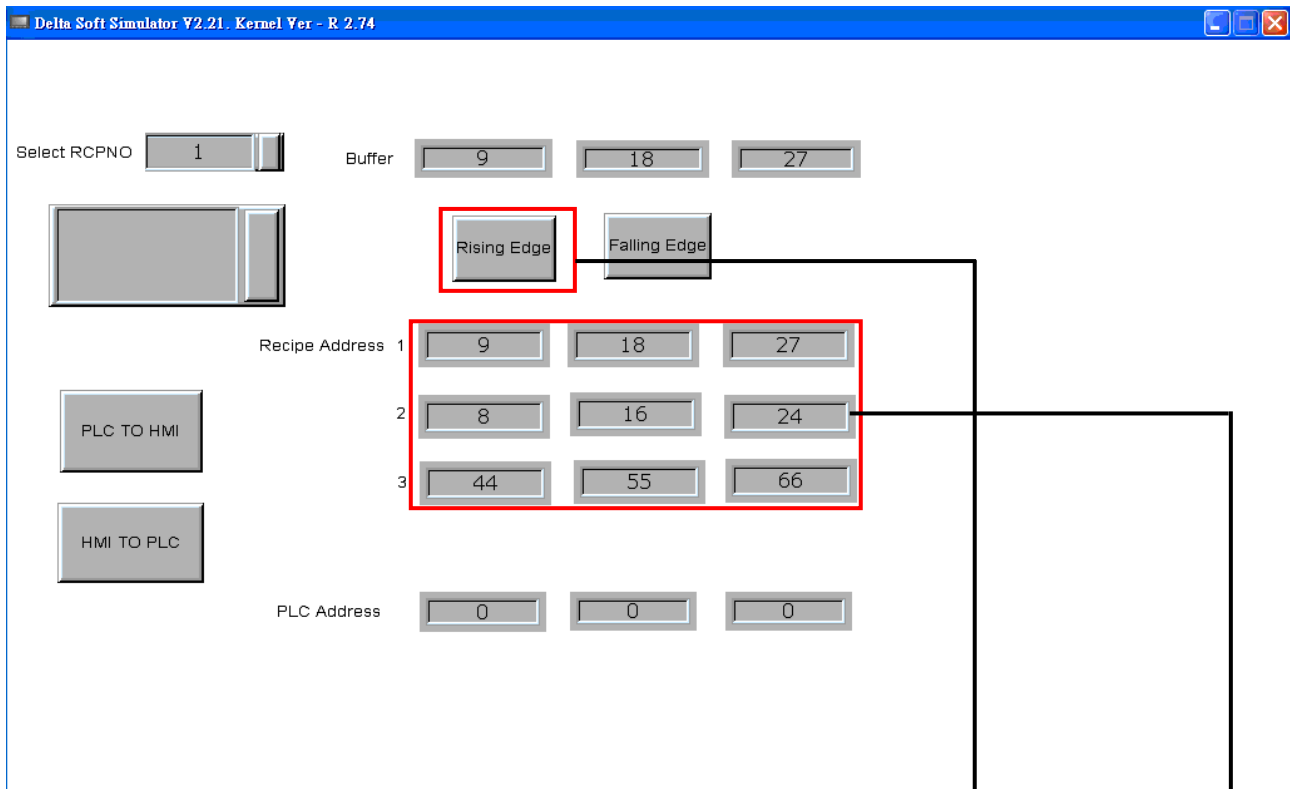
Press  icon. The following dialog box will pop-up and ask the users to enter the password.



Please enter 12345678 in the field of the password at the first time (12345678 is the default setting value and the users can change it freely). After the correct password is entered, the  icon will display on the tool bar at the left-bottom corner.

When eServer performs reading, please trigger the maintained button element on HMI and enter the value of 4. Then, the system will convert the recipe data to the data of -0223.rcp and show on HMI screen.

Please refer to the figure on next page:



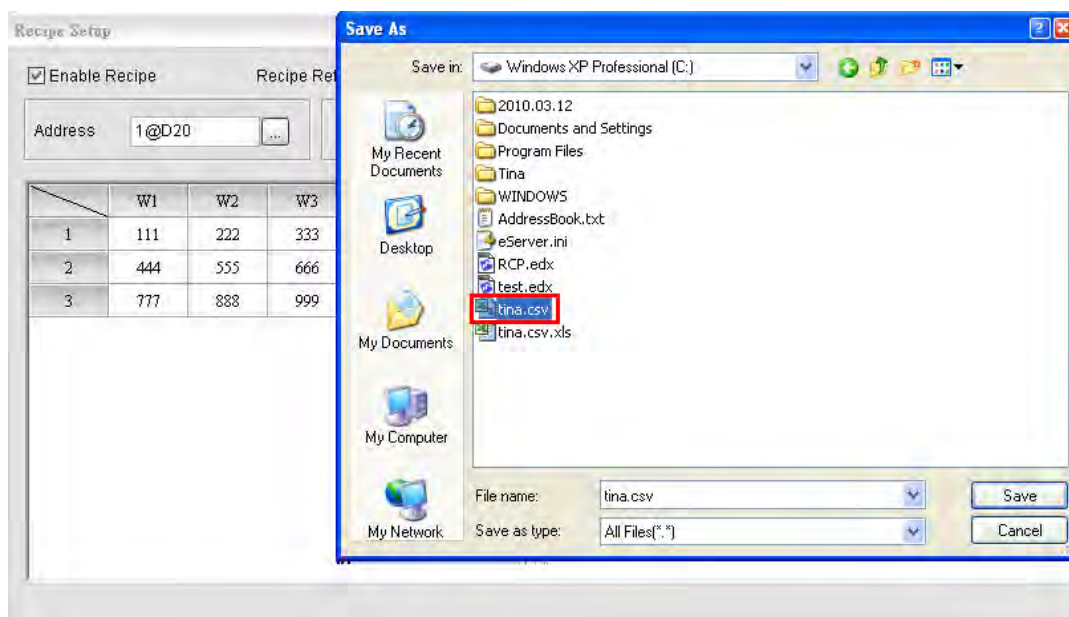
On the other hand, if incorrect or invalid password is entered, the following error message dialog box will appear to alert the users.

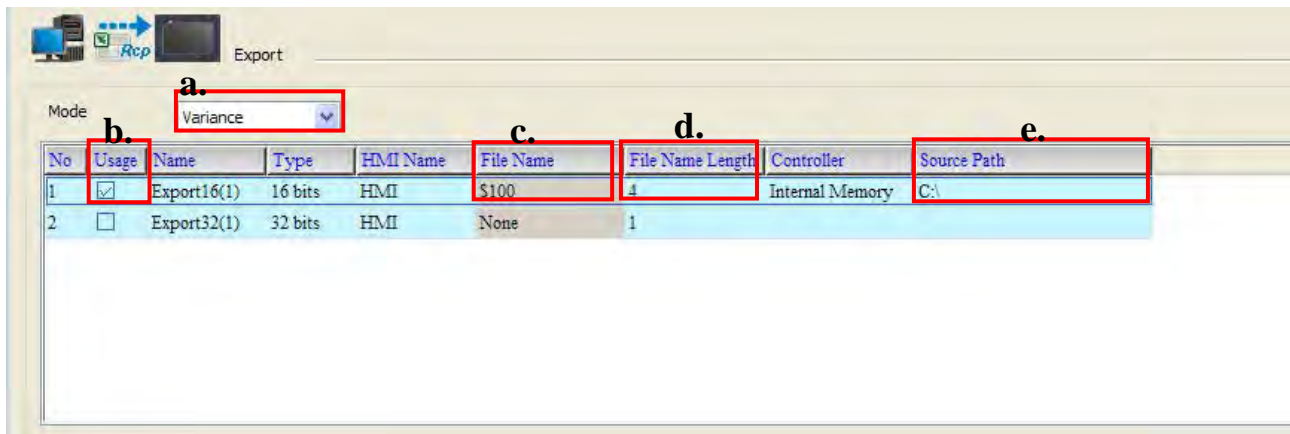


Export - Variance

Setting :

- Select **Variance**.
- Check the check box to use **16-bit recipe** as the example.
- Set the **File Name** (file name of the imported file) to be the same as the register address of HMI. (In this case \$110 character input element is used.)
- Set **File Name Length** (number of the imported characters). (In this case the File Name Length is set to 4. This is because the name of the exported file is Tina.csv. This file will be open in Screen Editor and save the value into .csv file.)
- Set **Source Path** (destination location) where the exported file is located (Tina.csv file is saved in C:\).

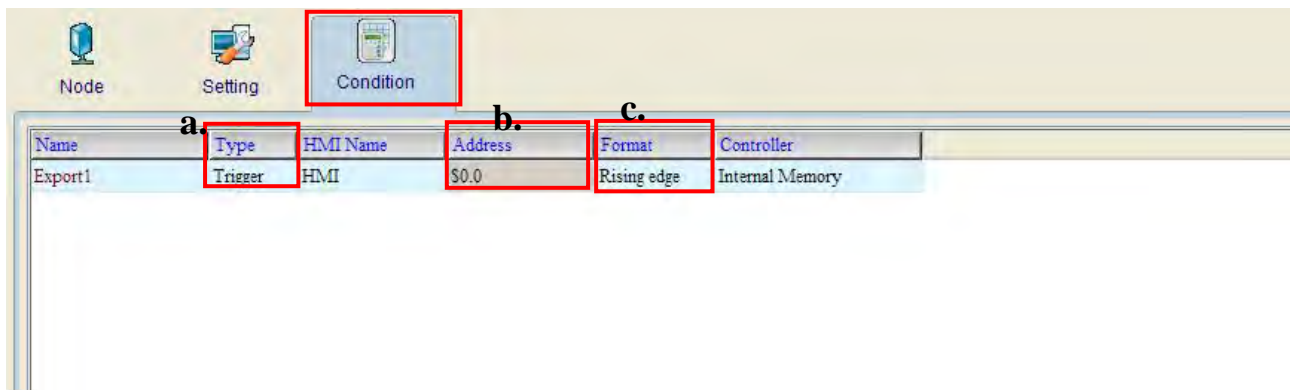




Condition :

As for the method of sampling condition, select **Trigger (Execute sampling when the trigger conditions are satisfied)**.

- Select **Trigger**.
- Set **Address** to the register address of the trigger element. (In this case the trigger element is a maintained button element and its address is set to \$0.0)
- Select **Format**. There are two options for selection: **Rising edge** and **Falling edge**. (In this case it is set to Rising edge)

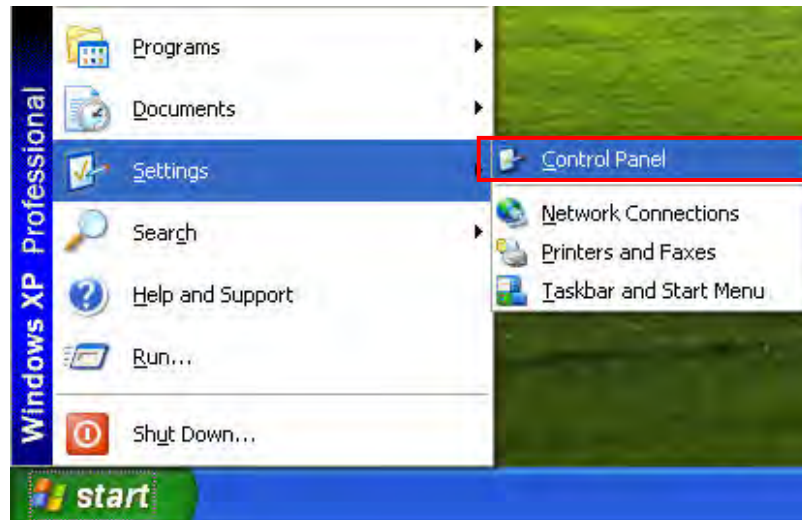


After completing all the settings, please make sure that the IP address numbers of subnet masks of the PC (172.16.190.1) and HMI (172.16.190.11) are the same; otherwise, HMI may not be displayed in the list when finding node.

Networking Settings

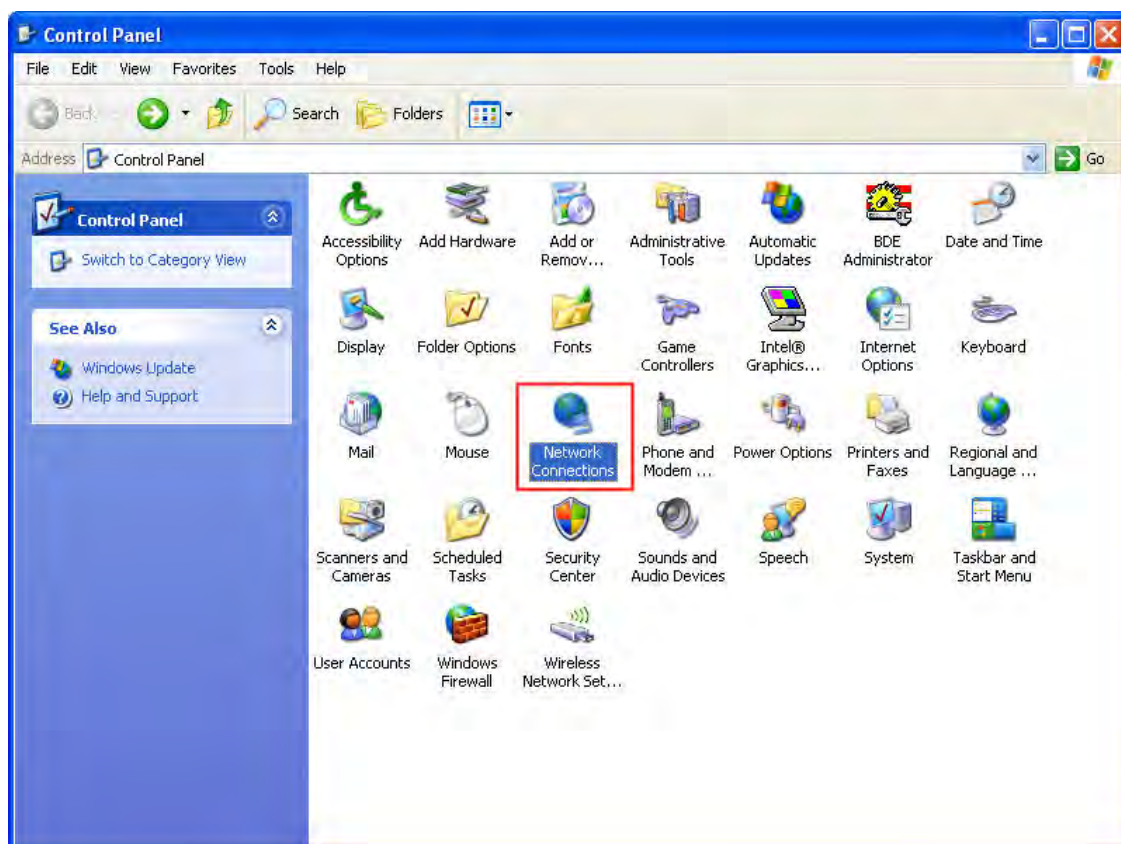
Ensure to observe the following instructions to complete PC networking settings before eServer operation.

Setting PC Network

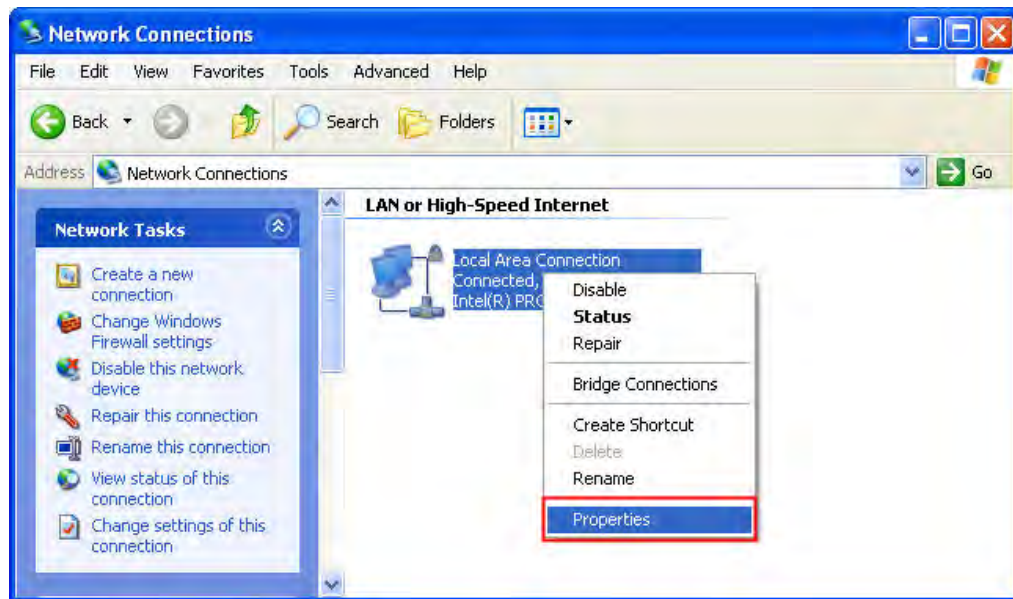


Power on PC and start Windows. Click **Start > Programs**, point to Control Panel, and then

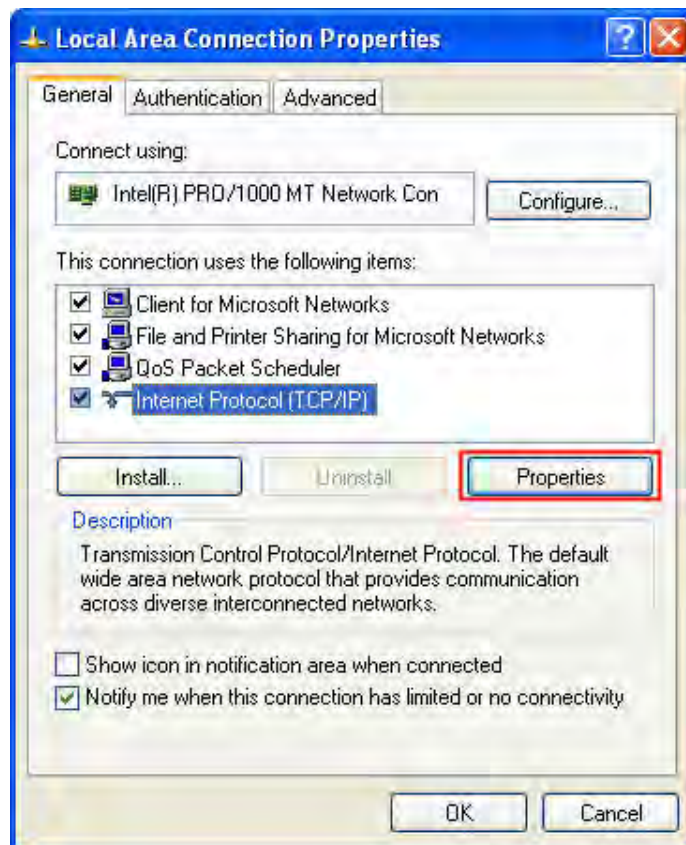
select Network Connections ().



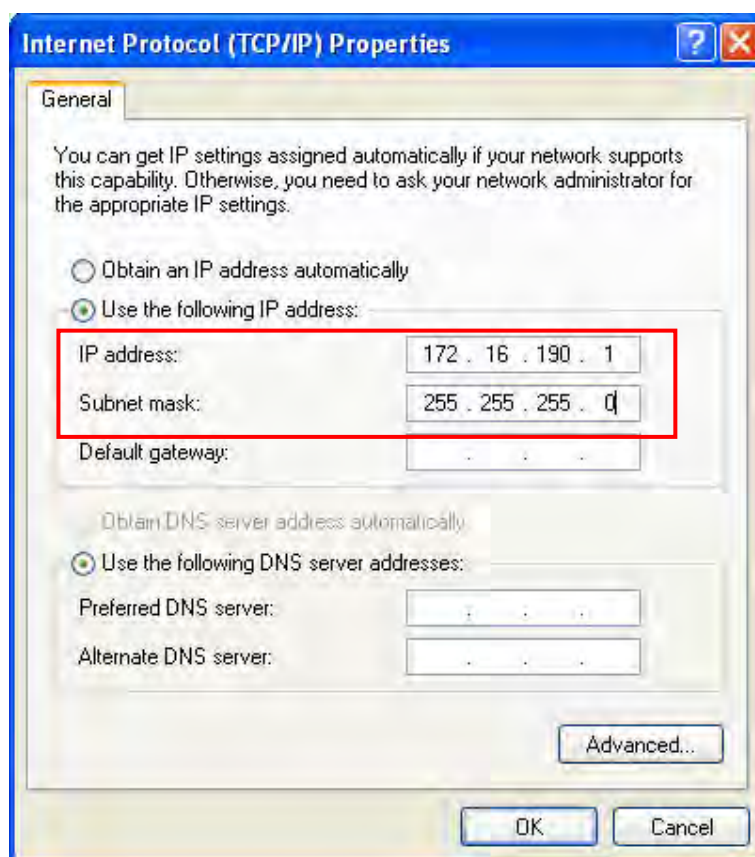
Double-click **Network Connections** icon, the following windows will appear. Right-click the **Local Area Connection** icon, and then select **Properties** from the pop-up menu.



The **Local Area Connection Properties** dialog box will open. Use **General** tab to select **Internet Protocol (TCP/IP)**. Then, press **Properties** button.



The **Internet Protocol (TCP/IP) Properties** dialog box will open. Choose **Use the following IP address** and enter the IP address numbers of the PC into the field of **IP address** and **Subnet mask**.



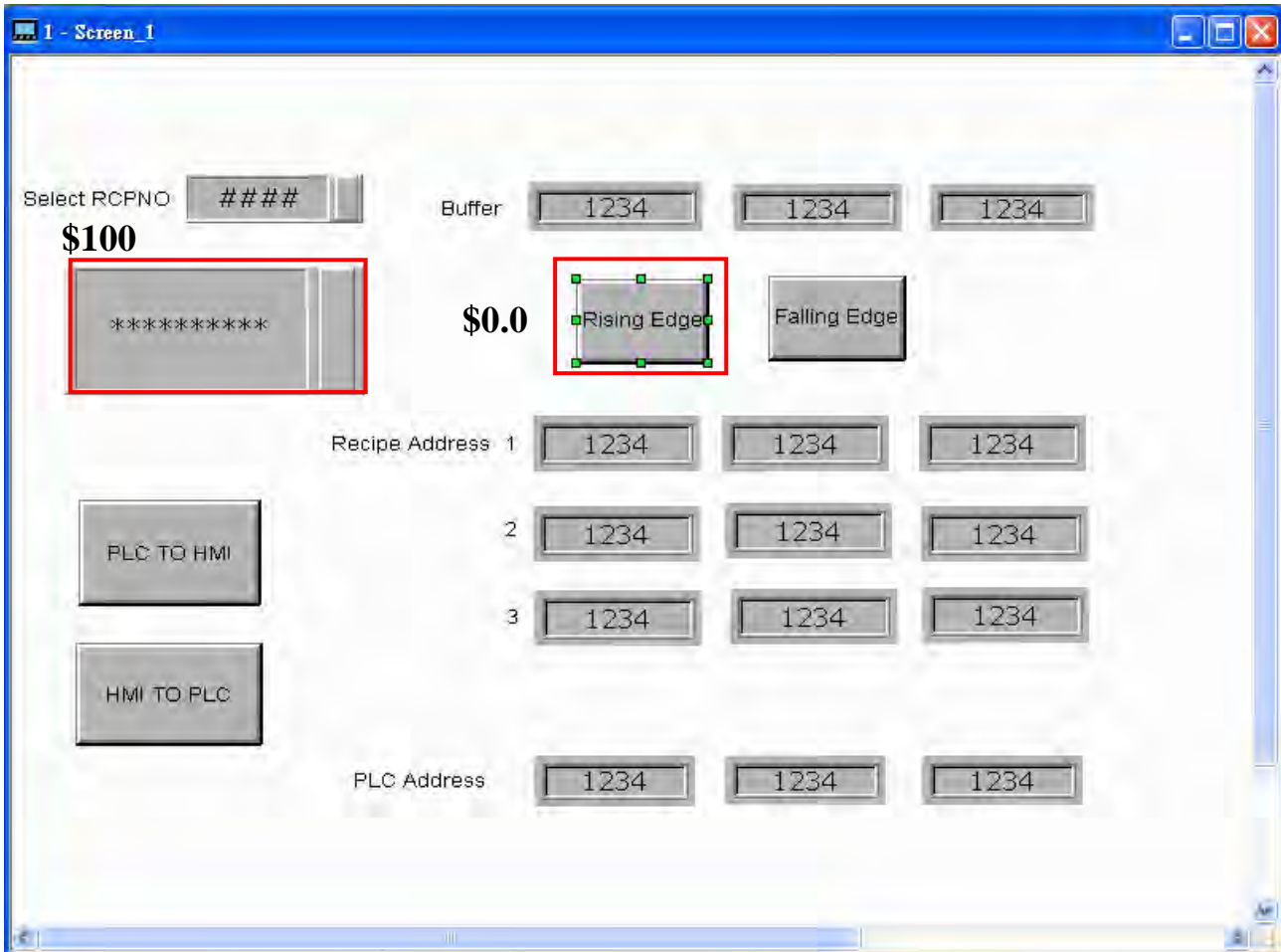
Then, press **OK** button to finish the settings.

Setting IP Address in HMI

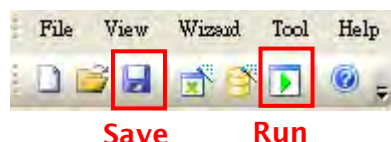
Enter into the system menu and set IP address to 172.16.190.11. Please see the figure below:




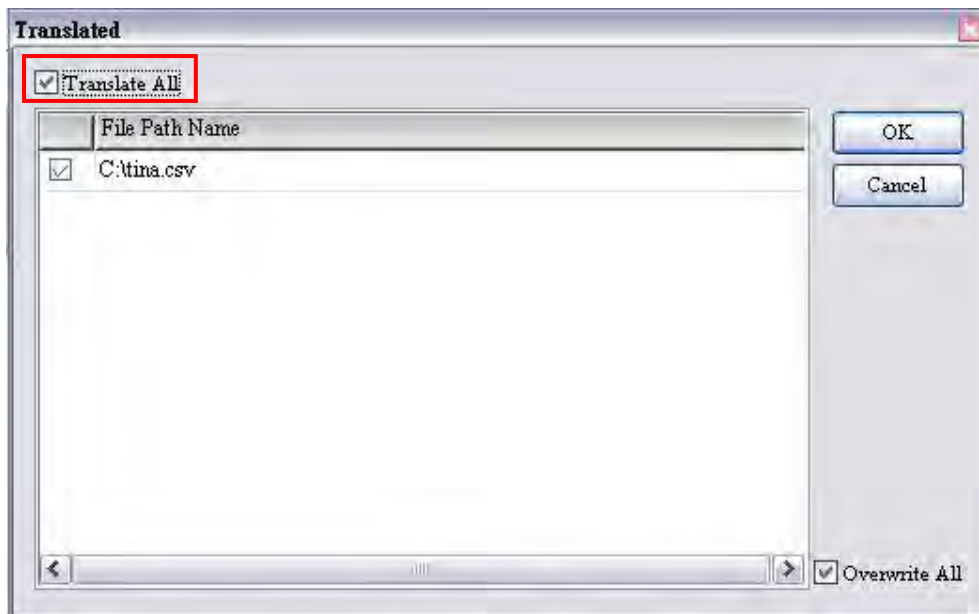
After completing all the settings and make sure that the communication is good, use the most updated Screen Editor program editing software to open the selected .dpb file which just has been modified on eServer. Then, create two elements. One is a character input element and its address is set to \$100. The other is a maintained button element and its address is set to \$0.0. Please refer to the figure below:



Then, compile it and download the recipe data to HMI. After recipe data is downloaded to HMI successfully, return to eServer, save the file first and then run the recipe data. Next, trigger the numeric input element on HMI, and the system will save the imported file to the destination path. Please see the figure below:




Press  icon. The following dialog box will pop-up and ask the users if it is necessary to convert the file of Tina.csv.



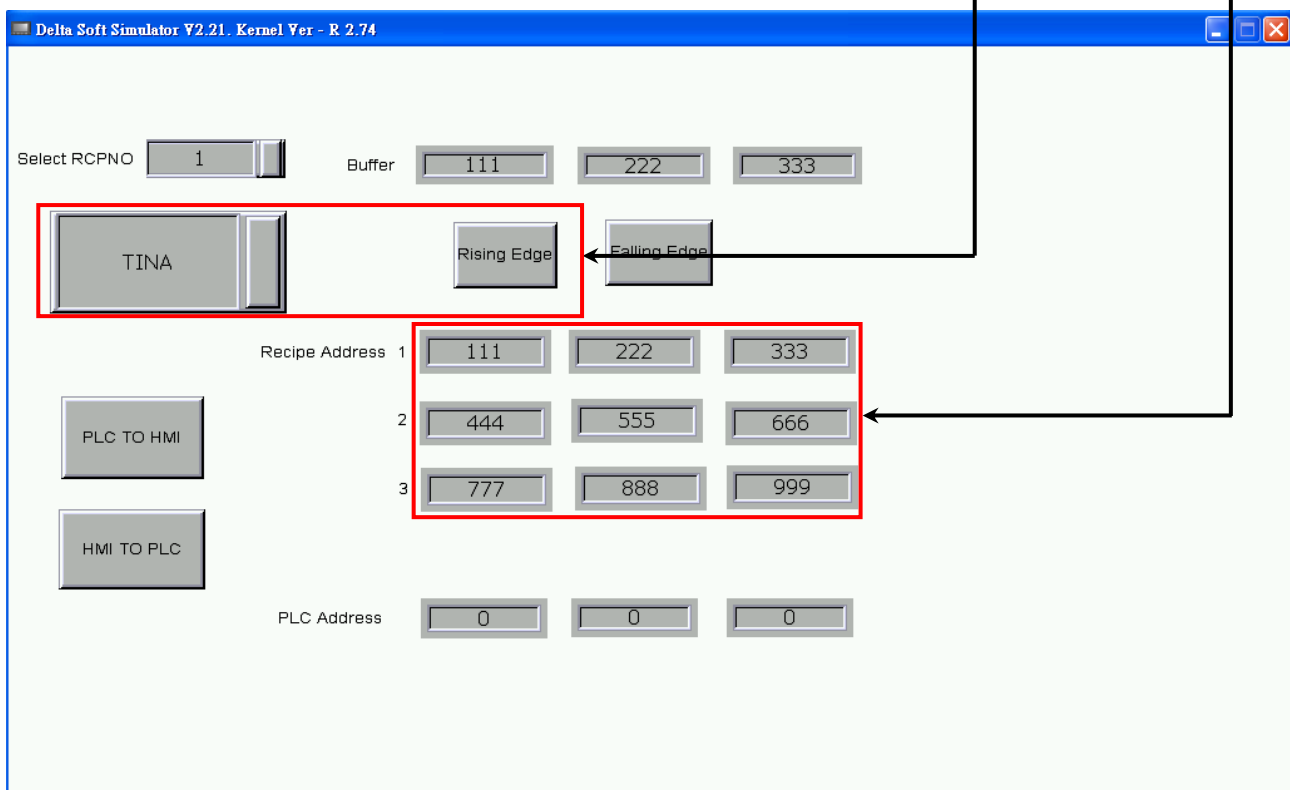
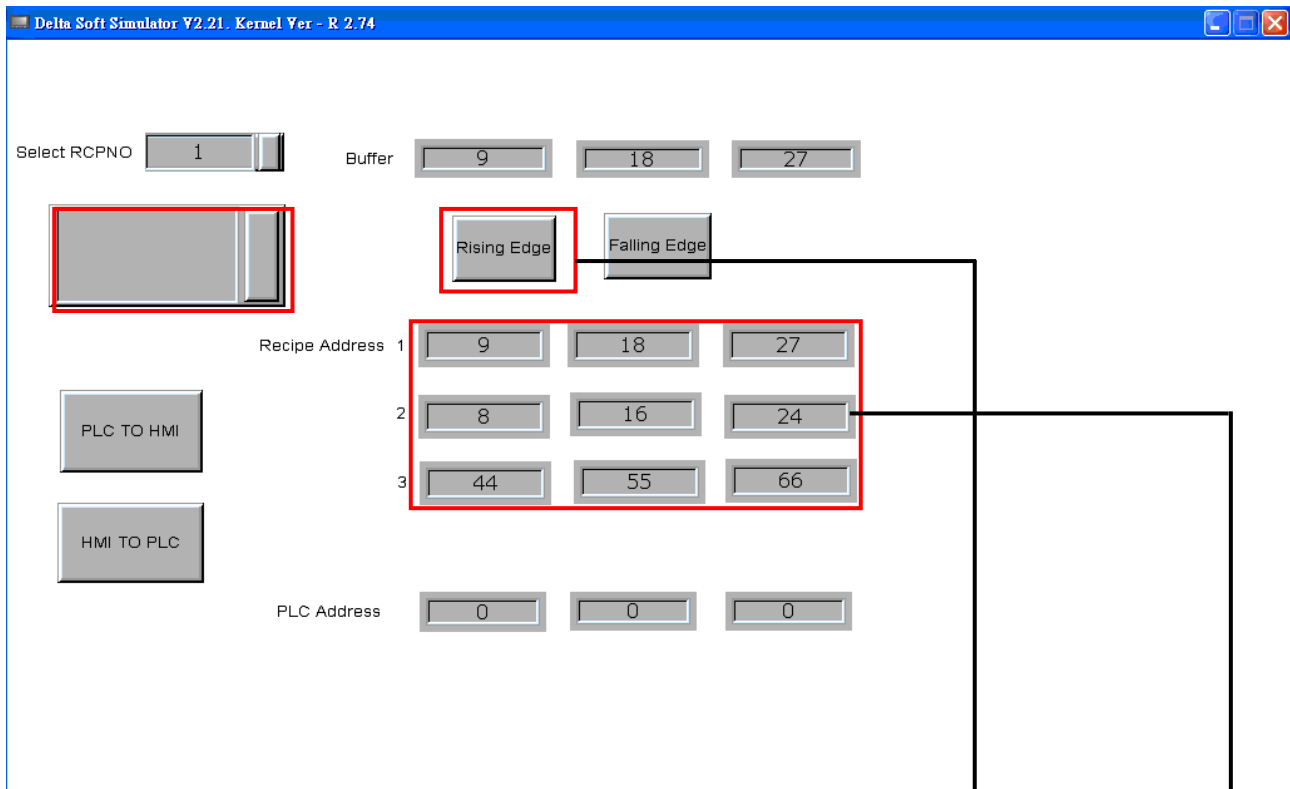
Check the box before **Translate All** and press **OK** button, the following dialog box will pop-up and ask the users to enter the password.



Please enter 12345678 in the field of the password at the first time (12345678 is the default setting value and the users can change it freely). After the correct password is entered, the  icon will display on the tool bar at the left-bottom corner.

When eServer performs reading, please trigger the character input element (TINA) and the maintained button element on HMI. Then, the system will convert the recipe data to the record data of Tina.csv file.

Please refer to the figure on next page:



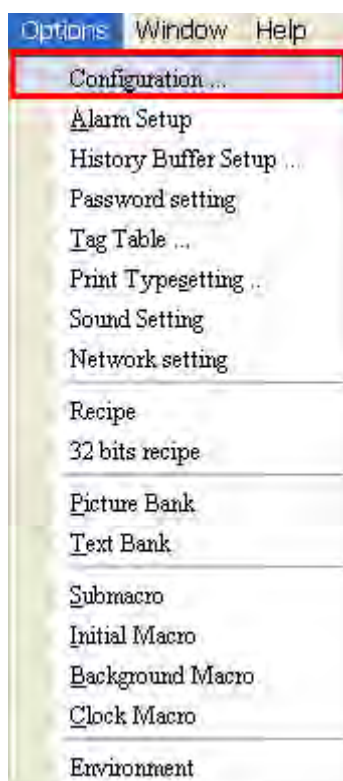
On the other hand, if incorrect or invalid password is entered, the following error message dialog box will appear to alert the users.



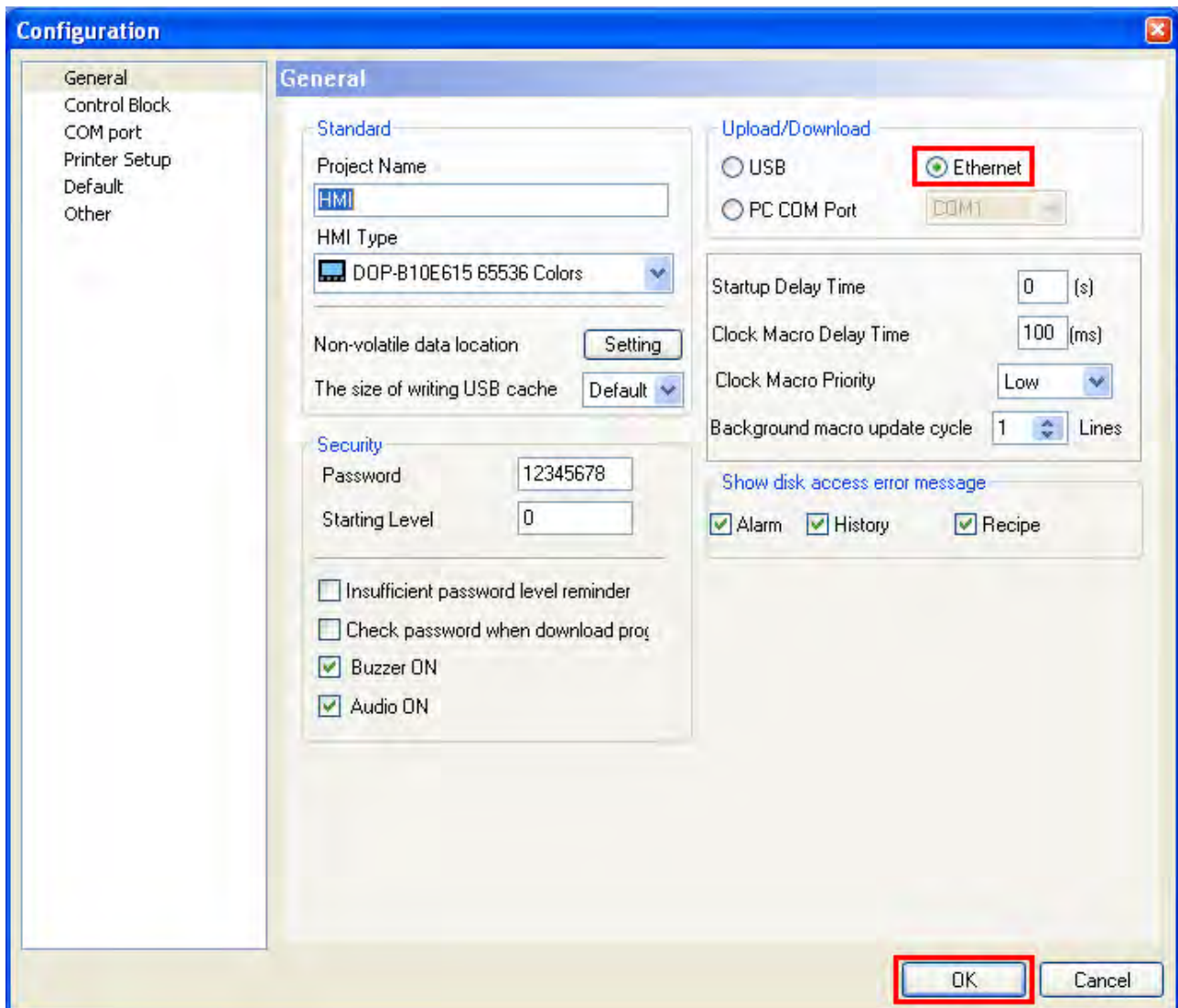
Appendix A Upload/Download via Ethernet

A.1 Configuration Settings

The default setting of upload and download on Screen Editor is via **USB**. If the users need to use **Ethernet**, please activate Screen Editor and select **Options > Configuration** to access the configuration options and change the upload and download setting.

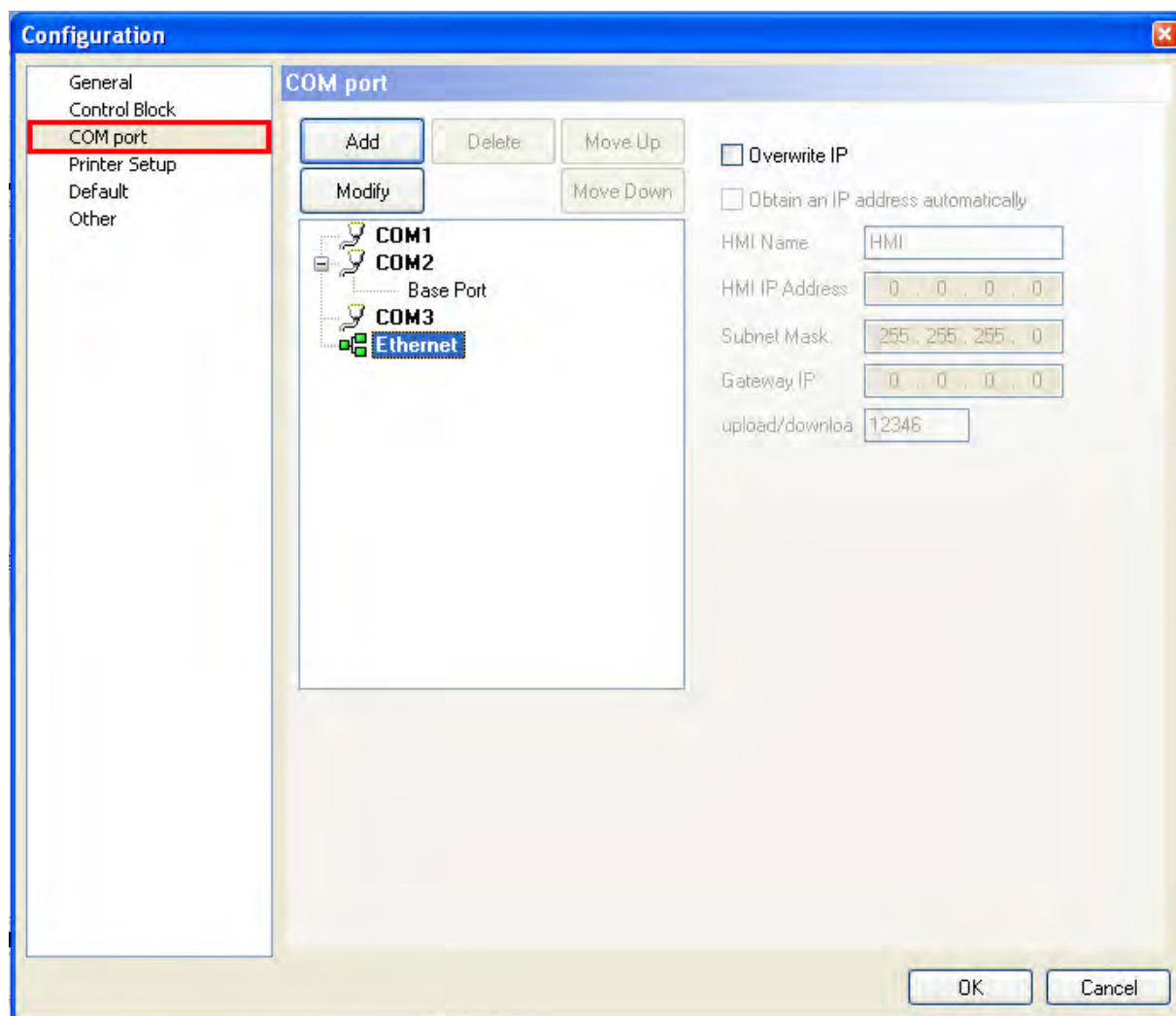


In **Configuration** dialog box, change the default setting of upload and download to **Ethernet**. Then, press **OK** to complete the setting.

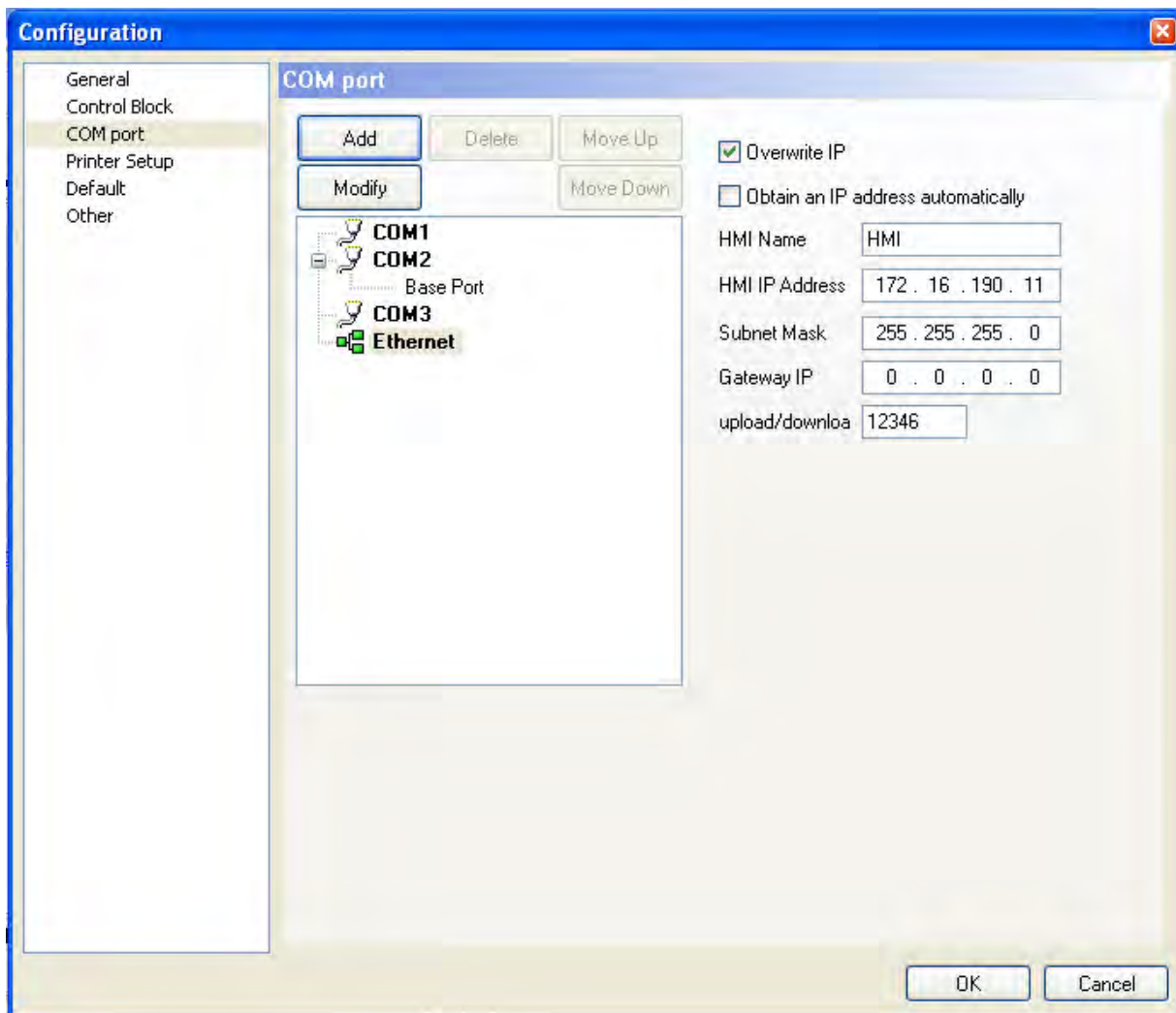


A.2 COM Port Settings

If the users choose to use DHCP mode, it is not necessary to set Ethernet IP address in COM Port tab.



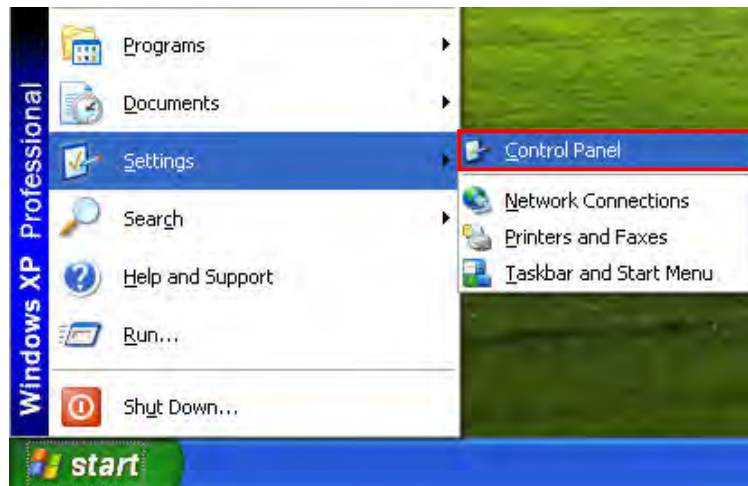
If the users choose to use user-defined IP address, please set Ethernet IP address in COM Port tab and ensure that the domain name is the same as the IP address of the personal computer.



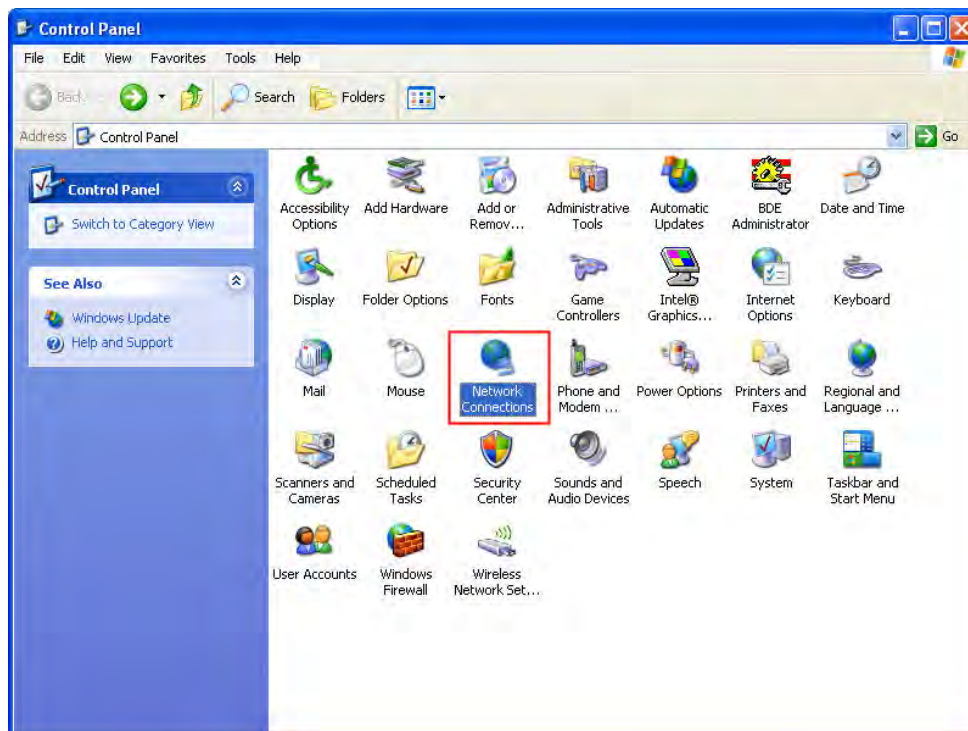
After Ethernet IP address is set, the users can enter into the system menu to verify if the IP address is written correctly or not.



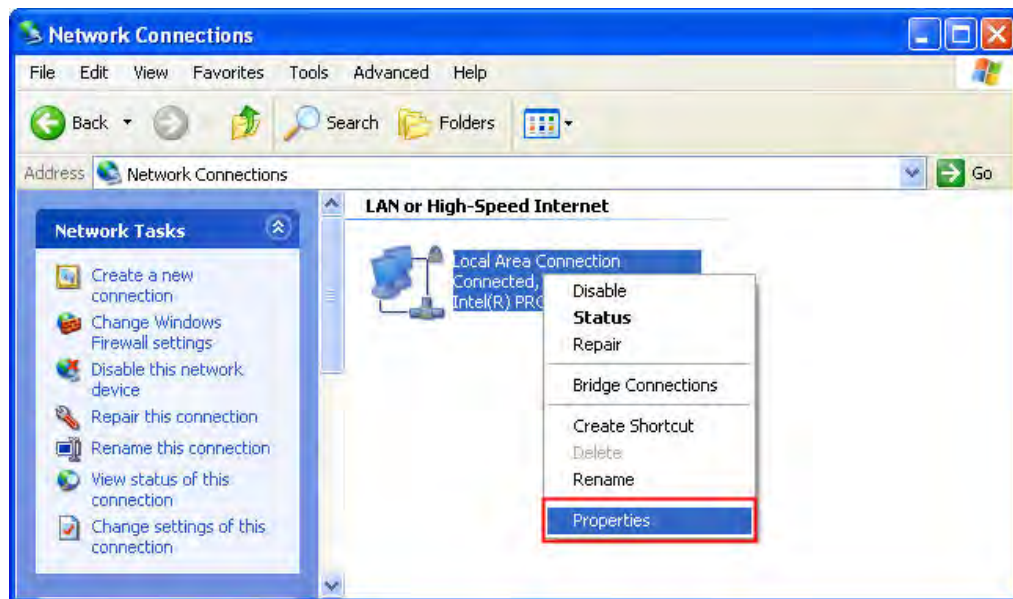
Then, observe the following instructions to complete PC networking settings.



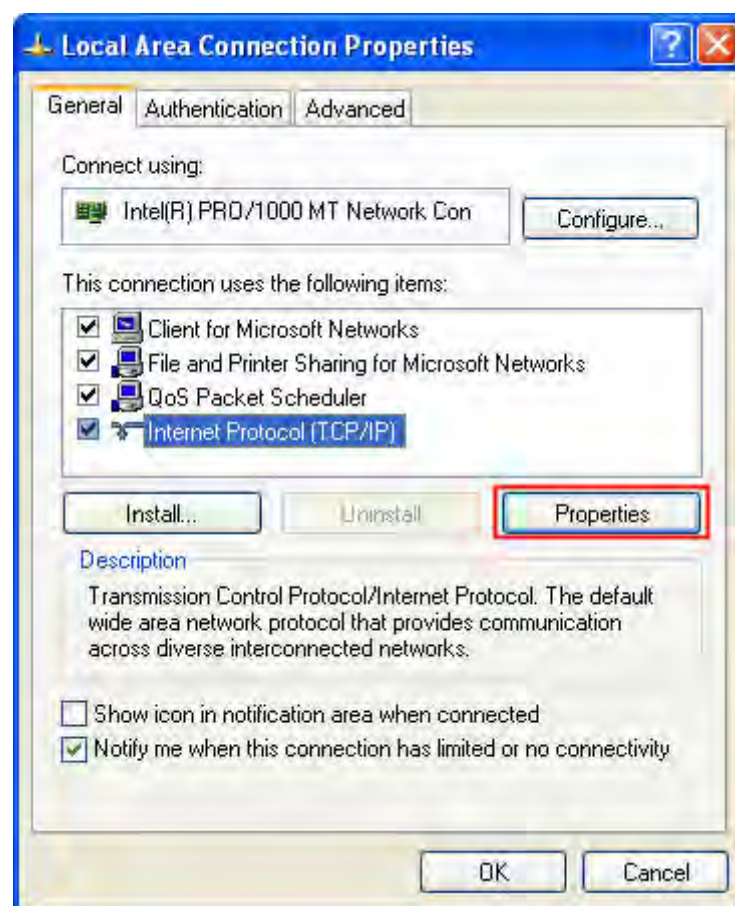
Power on PC and start Windows. Click **Start > Programs**, point to **Control Panel**, and then select **Network Connections**.



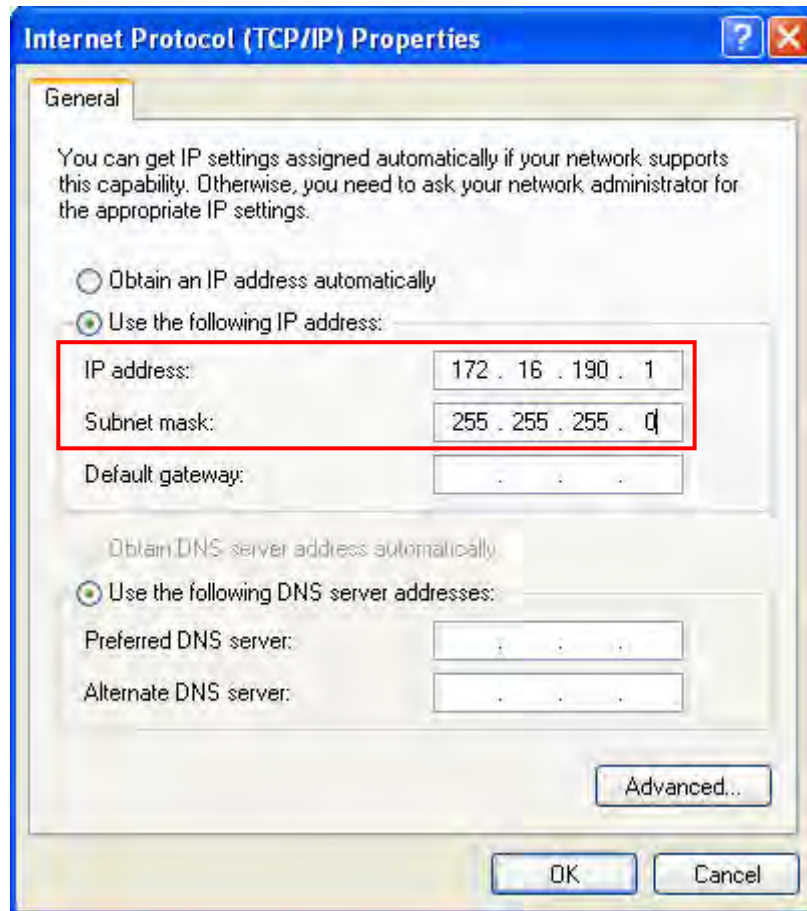
Double-click **Network Connections** icon, the following windows will appear. Right-click the **Local Area Connection** icon, and then select **Properties** from the pop-up menu.



The **Local Area Connection Properties** dialog box will open. Use **General** tab to select **Internet Protocol (TCP/IP)**. Then, press **Properties** button.



The **Internet Protocol (TCP/IP) Properties** dialog box will open. Choose **Use the following IP address** and enter the IP address numbers of the PC into the field of **IP address** and **Subnet mask**.

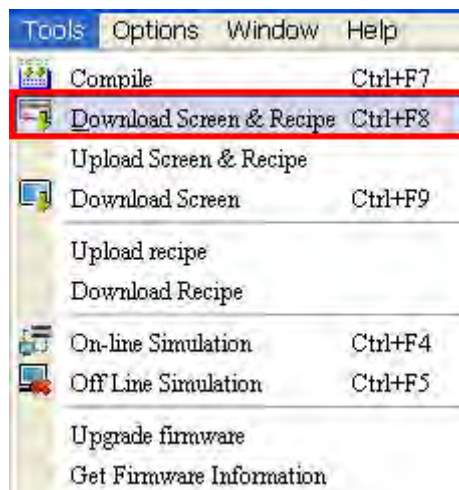
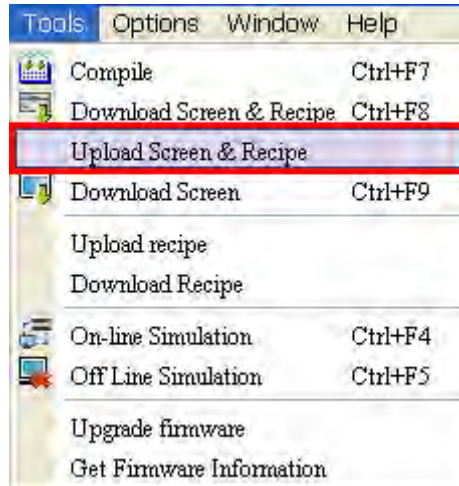


Then, press **OK** button to finish the settings.

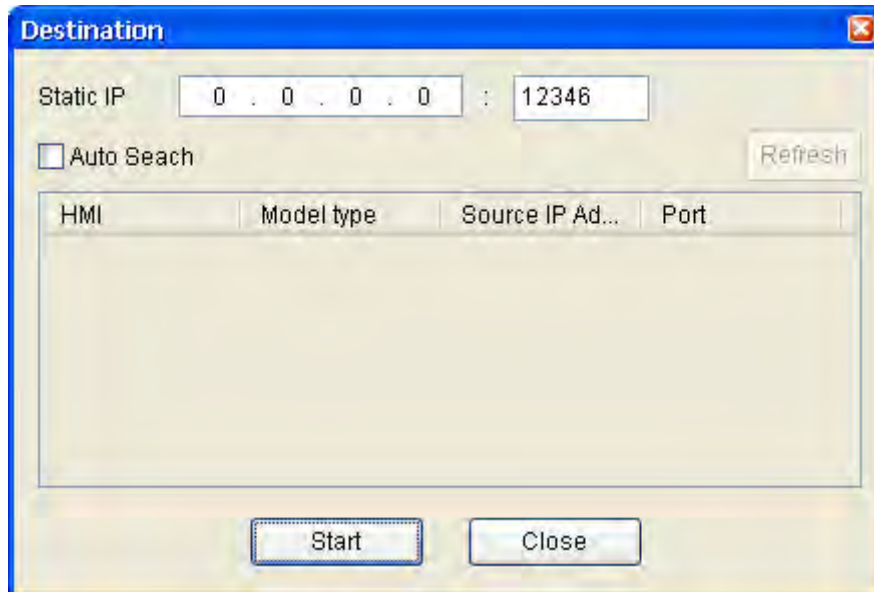
Please note that if the IP address numbers of subnet masks of the PC and HMI are different, HMI may not be displayed in the list when finding node.

A.3 Compile and Upload / Download Screen & Recipe

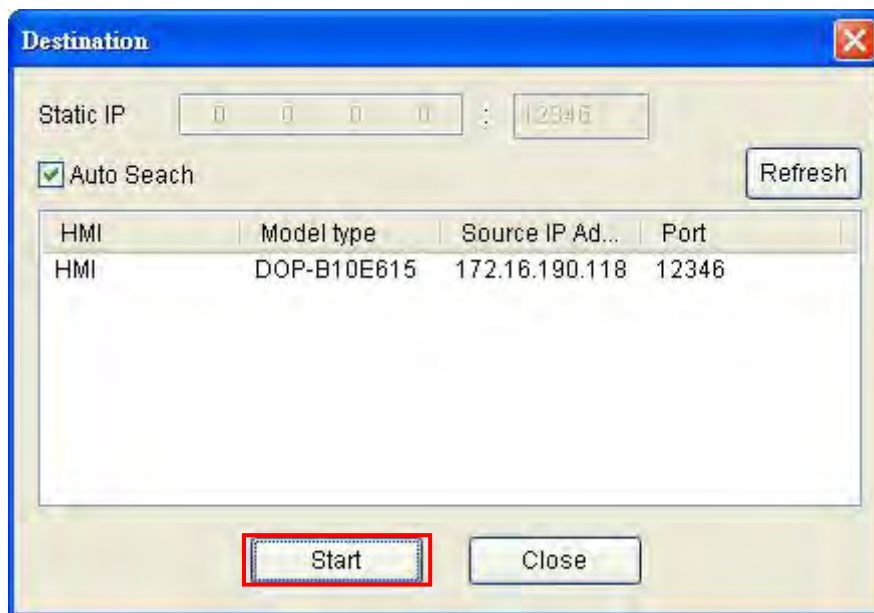
After completing PC networking settings, compile the editing program immediately. When compile operation is performed successfully, choose **Upload Screen & Recipe** or **Download Screen & Recipe** next.



Then, the following dialog box will appear.



The users can check the box before **Auto Search**, and the system will detect the connecting HMI automatically.



When the connecting HMI is found, press Start button, and the system will start to upload or download the screen data via Ethernet immediately.

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