

ICP DAS PMC Data Server Quick Start Guide

[Version 2.1.4]



ICP DAS CO., LTD.

泓格科技股份有限公司

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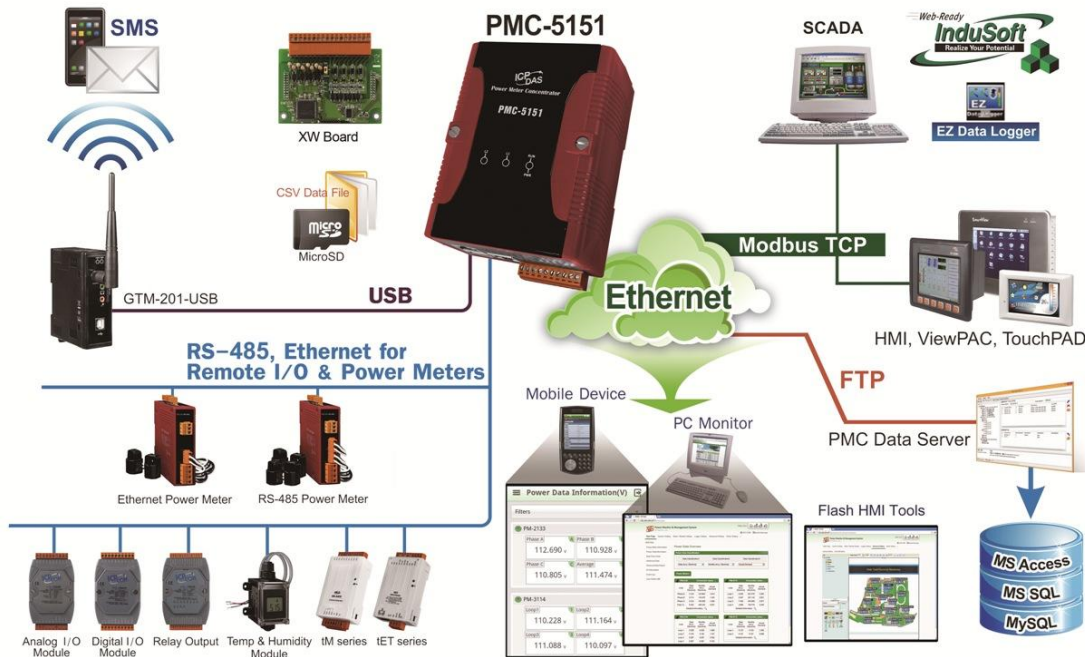
1 Overview

The PMC Data Server is a Database utility developed by ICP DAS. It is designed for connections to the ICP DAS PMC concentrators to read the power data measured by the power meters, and import the power data into the Database system for further statistics and analysis, so that enables a complete power management solution.

The ICP DAS PMMS (Power Monitoring and Management Solution) consists of three parts: ICP DAS PMC Data Server, ICP DAS PMC concentrator and ICP DAS power meter. The PMC is used for connections to ICP DAS PM-2133/PM-3133/PM-311x(-MTCP) power meters to read power data of the devices measured by the power meters by RS-485 (or Ethernet) interface, and save these power data to the PMC. When PMC Data Server is connected to these PMC concentrators by Ethernet, the PMC concentrators will automatically send the power data files at pre-defined scheduled time to the PMC Data Server through the FTP protocol, then PMC Data Server will receive these power data logger files and import the content of these files into the Database system for further operations.

By using PMC Data Server to build a power management system, during the whole process of system development, no programming is required; by a few settings of the connection parameters for Database; the user could quickly convert the power data of the devices into Database system. The ICP DAS PMC Data Server, PMC concentrator and Power Meters is an easy-to-use and easy-to-build solution for power management that makes more efficient energy usage.

The system architecture of ICP DAS PMMS solution is as below.



PMC Data Server Features:

- ◆ Connect to PMC concentrators through Ethernet interface to receive the power data logger files (in CSV format) that are sent by PMC concentrators.
- ◆ Support Database import function to import the content of CSV file to the MS SQL, MS Access or MySQL Database system.

Currently the PMC Data Server support ICP DAS PMC-5141 and PMC-5151. This document is intended to give a full-range instruction of PMC Data Server. For detailed operations and setting information of PMC-5141 or PMC-5151, please refer to the user manual of PMC-5141 or PMC-5151.

2 Before Installation


PMC Data Server can be installed on Windows XP, Windows Vista, Windows 7 and Windows 8. Before the installation of PMC Data Server, please confirm the Microsoft .NET Framework 3.5 has been installed on the target computer.

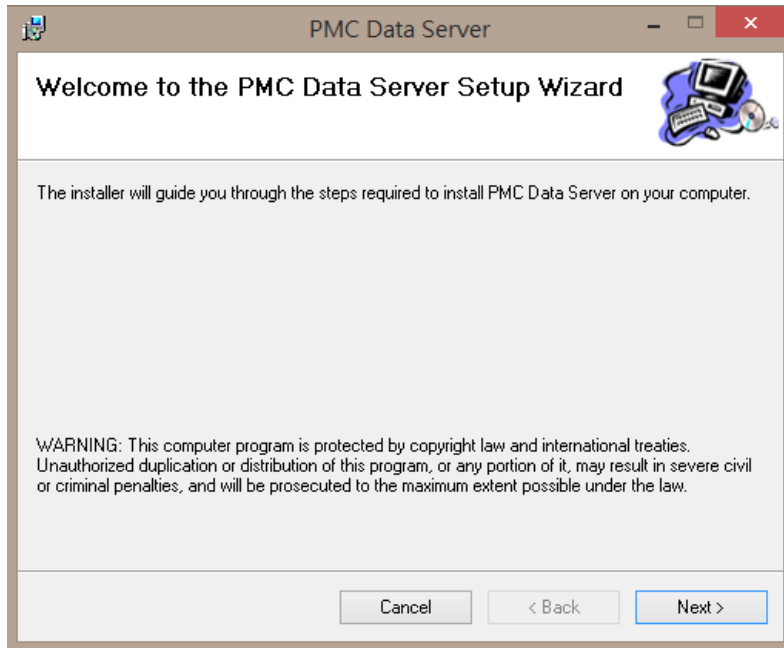
If the target computer does not install the framework package, please visit the link as below to download the file directly from Microsoft and install it.

◆ **Download Microsoft .Net Framework Version 3.5:**

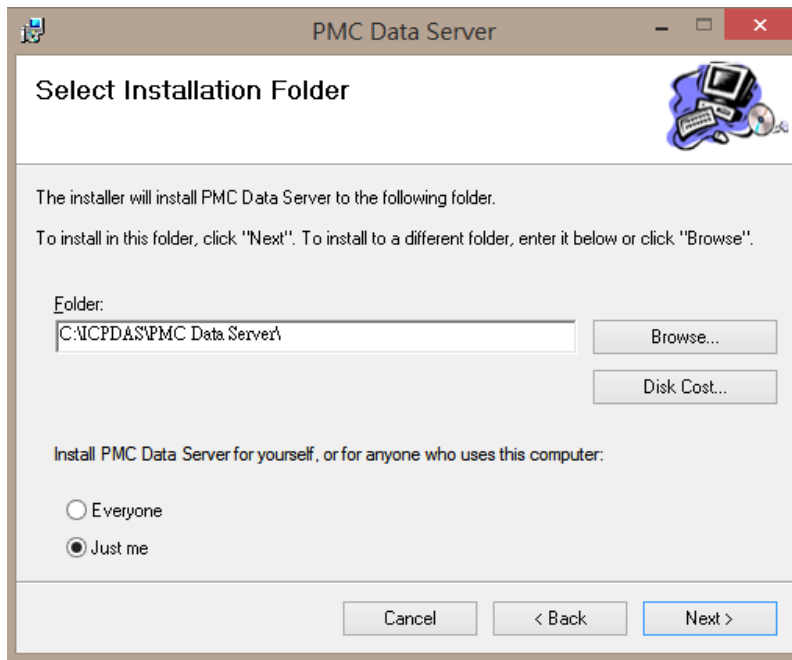
<http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=21>

3 Software Installation

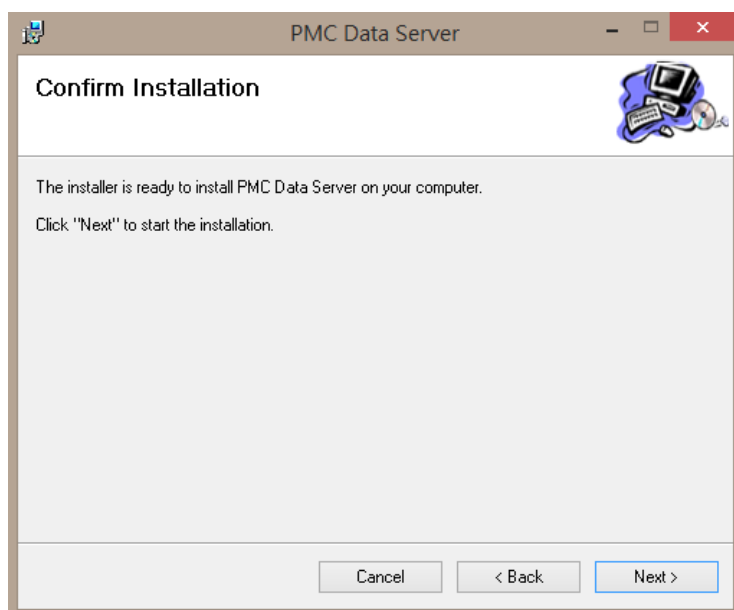
Please contact ICP DAS service to obtain the latest version of PMC Data Server installation file  (PMC Data Server_Setup.msi). Double click on the installation file to start the installation, click **【Next】** to continue.



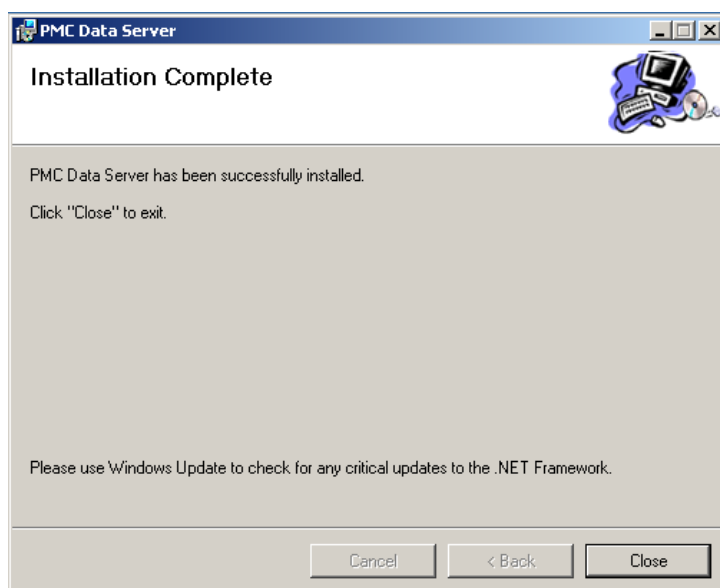
On **【Select Installation Folder】** window, input path or browse through file dialog box to select the destination folder, and then click **【Next】** to continue.




Click **【Next】** to start the installation.



When the installation process is completed, click **【Close】** to finish the installing process.



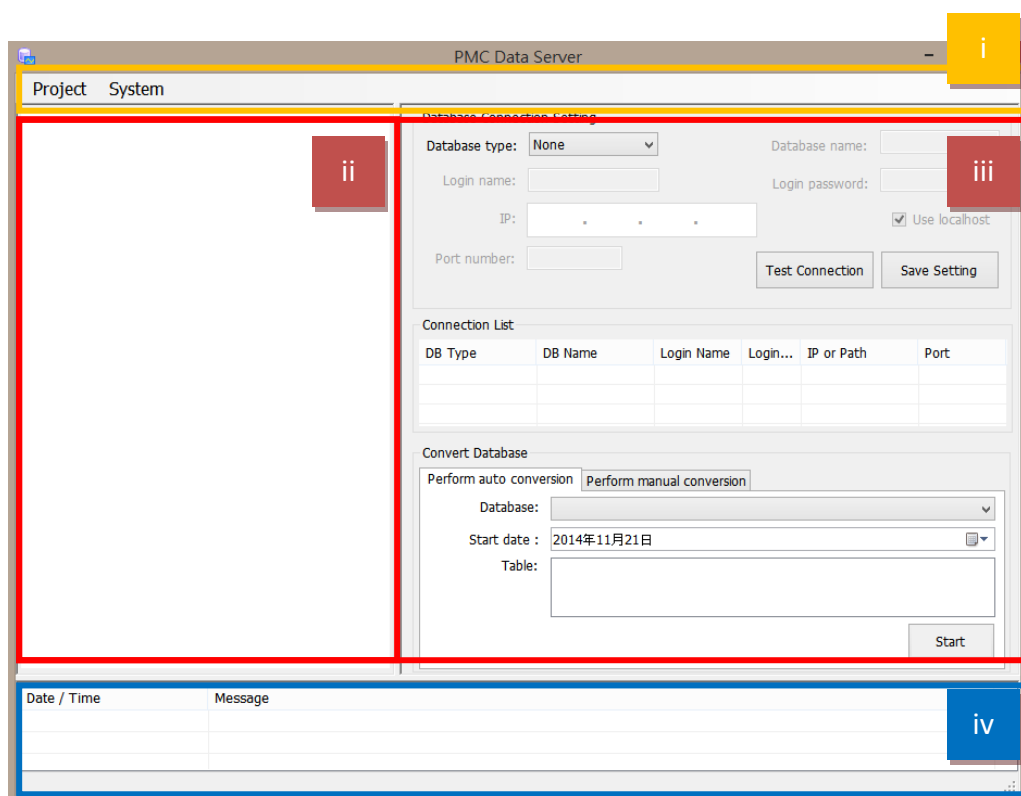
After the installation is completed, user will find PMC Data Server shortcut (icon) on the desktop and in the program menu: **【Start】** → **【All Programs】** → **【ICPDAS】** → **【PMC Data Server】** . The icon is shown as .



4 User Interface Introduction

PMC Data Server main window contains the following areas:

- i. **System Function Area** : It contains the menu bar for user to select the function.
- ii. **Function Operation Area** : User can define the content of the data table and the related power meters which will be using to import the power data into the Database system. User also can review the setting here.
- iii. **Database Operation Area** : It provides the parameter setting for both the Database connection and Database importing functions.
- iv. **System Message Area** : Display the system messages during the function execution.



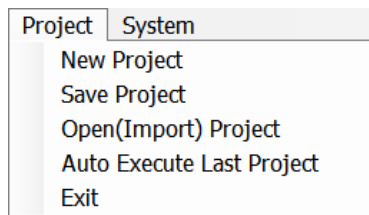
5 System Operating Procedure

PMC Data Server is connected to ICP DAS PMC concentrators via Ethernet interface. The historical power data logger files generated by PMC concentrators will be automatically sent back to PMC Data Server via FTP protocol. After the PMC Data Server receives the files, the power data files will be processed and then the power data of the devices measured by power meters can be imported into the Database system.

The following section will introduce how to perform PMC Data Server functions.

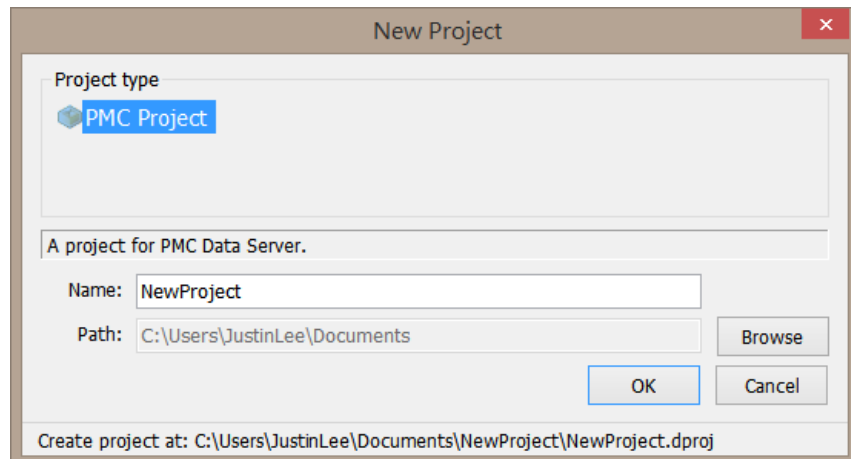
5.1 Project Setting

This section describes how to create, save and open (import) project in PMC Data Server. When check【Auto Execute Last Project】, the PMC Data Server will be launched and import last project setting automatically after the computer being rebooted.



5.1.1 Create New Project

On the 【Project】 function list, click 【New Project】 and the 【New Project】 window will appear. Enter the project Name in the text field; the corresponding storage path will be displayed at the bottom area of the window. After entering project name and project storage path, click “OK” button to create a new project.



5.1.2 Save Project

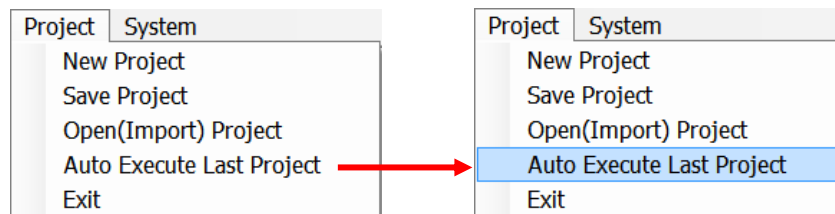
On the **【Project】** function list, click **【Save Project】** to save current project settings so that the user can use the same PMC Data Server project next time.

5.1.3 Open(Import) Project

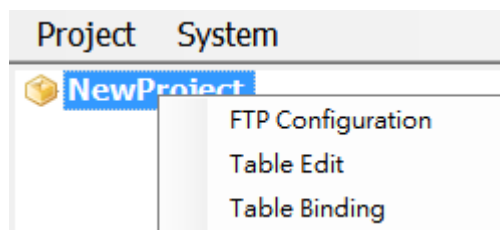
On the **【Project】** function list, click **【Open(Import) Project】** and the **【Open】** window will be shown. Browse through to select the desired project file (*.dproj) and click on **【Open】**. PMC Data Server will import the project settings.

5.1.4 Auto Execute Last Project

If user check the **【Auto Execute Last Project】**, when user reboot the computer; The computer will automatically launch the PMC Data Server and import the last project setting. **If the user has set last project to perform auto Database conversion function; PMC Data Server will also launch the Database auto conversion function for user to continue the original Database conversion operation. Please see [chapter 5.5](#) for more detailed about how to perform auto Database conversion.**



In addition, there will be a menu when user right-click on the project name with mouse. Each function in the menu will describe in section 5.3 and 5.4, respectively.



5.2 System Setting

The user can view the version number of the utility and determine what language to be used in the system. After confirms the language setting, user can get to next step for project setting.

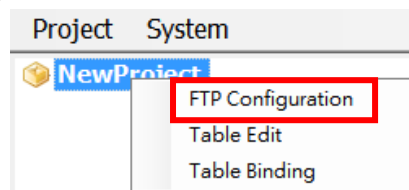
Please Note :

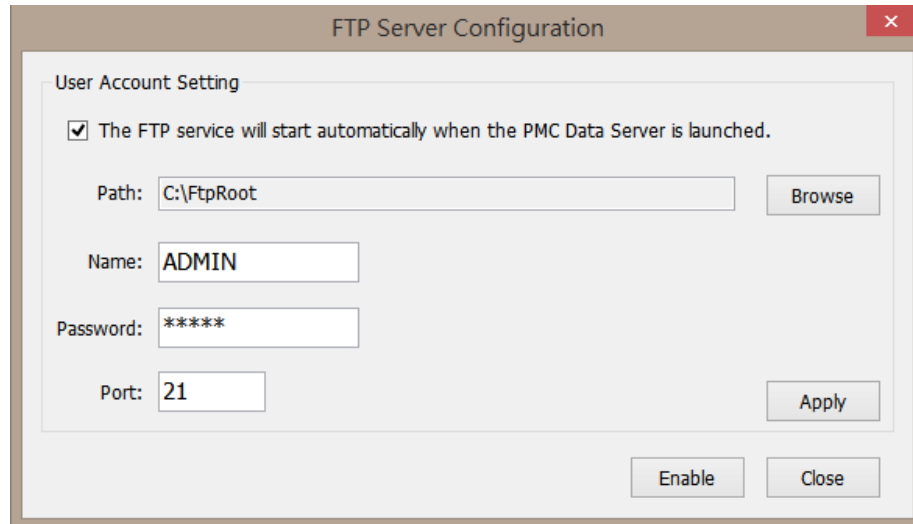
- (1) The system need to be restarted when user changes the language setting. Please make sure the project setting and save it as requires before change the language setting.
- (2) In PMC Data Server, the default language of Database columns will be based on the system language setting of PMC Data Server. That is, if Chinese is selected as system language, the default language of Database columns will be in Chinese, and if English is selected as system language, the default language of Database columns will be in English. User can also see [section 5.4](#) for more detailed about how to customizing the names of Database columns.

5.3 FTP Server Settings

PMCs send stored power data files to the PMC Data Server regularly through the FTP server. Therefore, it is required for user to setup the built-in FTP server of PMC Data Server for PMCs to send back the power data logger file to the PMC Data Server. Following is the steps.

- i. Mouse right-click on the project name and select【FTP Configuration】. The configuration window will be shown as below.

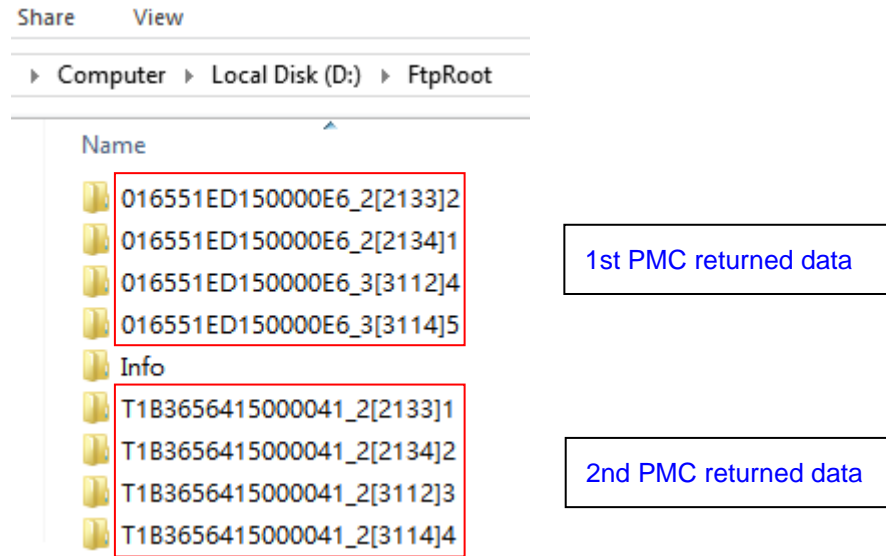




By default, the system will not launch FTP service automatically. If the user would like to launch the service, please first complete the following settings and click “Apply” button.

- Check or uncheck if the FTP service will start automatically when the PMC Data Server is launched.
- Path : Setup the download path for saving the received power data files that PMCs send to the PMC Data Server.
- Name and Password : Set up the username and the password for the built-in FTP Server of the PMC Data Server. **Please make sure the FTP settings on the PMC Web page is also the same as the FTP account settings on the PMC Data Server, so that the PMCs can successfully login and send back power data files to the PMC Data Server.**
- Port : Setup the port for the built-in FTP server of the PMC Data Server.

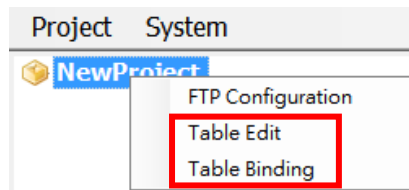
- ii. After the FTP server setting is completed; implement the network connection of the front-end PMCs and the PMC Data Server; click the “Enable” button; the PMC will start to transfer power data files to the specified FTP server download folder. The specified FTP server download folder will contain an “Info” subfolder and other subfolders for each power meters. The following figure is an example that shows the power data folder structure of the FTP server download path after the PMC sending back the power data files:



If user want to stop the FTP function or change the FTP setting, please mouse right-click on the project name and select **【FTP Configuration】**, then the configuration window will be shown. Click the “Stop” button to stop the FTP functions or change the FTP parameter setting.

5.4 Data Table Editing and Binding

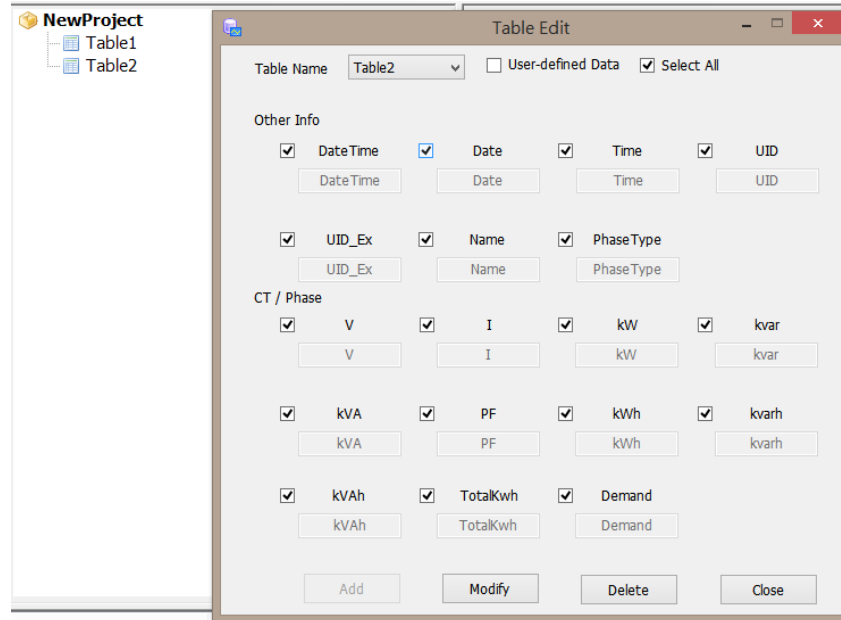
PMC Data Server takes the CT(or phase) of power meter as the basic unit. After user complete the setting of CT(or phase) of the power meter as this section, the PMC Data Server will extract the content of the power data files sent back by the PMC for Database conversion. The detail description of the editing of the Data Table and the binding of Data Table and CT(or phase) of the power meter is as below.



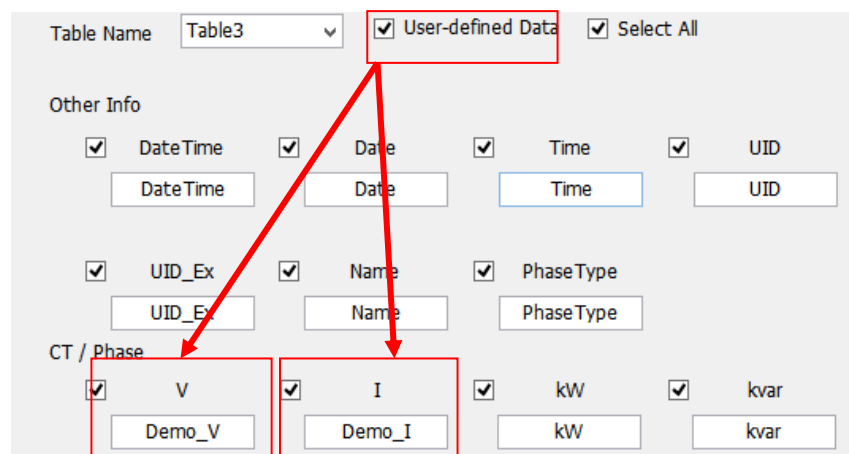
5.4.1 Data Table Editing

It is used to define which power data will be selected to import into the Database system, and also the definition of the Database Column. Mouse right-click on the project name and select **【Table Edit】**, then the Table Edit window will be shown as below. Input the name of the Data Table in the “Table Name” field, and select the data items which will be used in the Database import

operation. After complete all setting, clicking “Add” button to add the Data Table in the system. User can modify the Data Table setting which already exists by clicking “Modify” button; Clicking “Delete” button will delete the Data Table which user define before.



User can customize the content of the Database column for the data table as requires. For example, both "V" and "I" columns are the default Database column of the Data Table. They can be renamed as “Demo_V” and “Demo_I” as following, so the data from the CT (or phase) of the power meter will be converted into the Database with this new customized Database column.

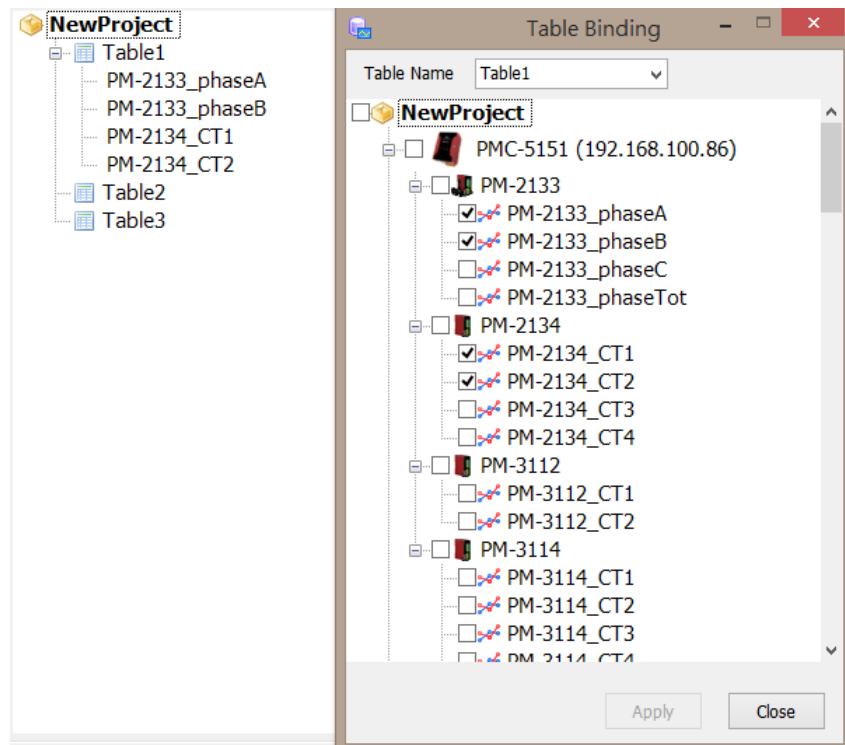


5.4.2 Data Table Binding

After complete the setting of “5.4.1 Data Table Editing”, now user

have to setup the binding relation between the Data Table and its data source (The CT or phase of the power meter). Mouse right-click on the project name and select **【Table Binding】** then a tree architecture list of the CT(or phase) of power meter of PMC will be shown as below. User can check or uncheck the checkboxes which is in the front of each CT(or phase) to add or remove the CT(or phase) from the binding list of the Data Table. Each CT(or phase) can be bound to multiple Data Tables. The CT(or phase) binding list is the data source of the Data Table. When PMC Data Server start the Database conversion operation, the system will perform the power data files processing according to the definition of the CT(or phase) which is added into the binding list or not. After complete the setting, the Database conversion function will be performed and store data into the Database system regularly.

If the user would like to remove the specified CT(or phase) from the binding list, just uncheck the checkboxes of the CT(or phase). Please remember to click “Apply” button after completing all setting.



5.5 Database Settings and Conversion

The Database convert function supports 3 types of Database: MS Access,

MS SQL and MySQL. The user could freely define the ways to connect to the Database. In addition, PMC Data Server also provides automatic Database conversion function to automatically convert the content of the power data files into the specific Database system regularly.

5.5.1 Create Database Connection Setting

The user interface of the Database connection setting is shown as follow. Follow the steps below to set up it.

- i. The Database convert function supports 3 types of Database. Select the Database type, the corresponding setting textboxes for the Database type will be shown for user to fill in.
- ii. PMC Data Server provides connection testing function for MS SQL and MySQL Database. For MS Access connection setting, it doesn't require connection testing, the user only needs to make sure if the storage path is available or not.

5.5.2 Save Database Connection Setting

After complete the settings of "Database Connection Setting", the user could test the connection by clicking "Test Connection" button before the normal operation. User could also skip the test step and save the connection setting directly to the "Connection List" by clicking "Save Setting" button.

The Database connection settings list will be showed as below:

DB Type	DB Name	Login Name	Login...	IP or Path	Port
MS SQL	TestDB	sa	****	localhost	1433
MySQL	TestDB	root	*****	192.168.100.50	3306

5.5.3 Modify and Delete Database Connection Setting

Double click the database connection setting on the "Connection List", the PMC Data Server will bring out the saved setting and the setting information will be showed on the "Database

Connection Setting” automatically. User can modify the setting to fit their requirements. **After the modification is completed, click “Save Setting” button to save the settings back to the “Connection List”.**

In addition, user can also delete the previous saved database connection setting on the “Connection List” by mouse right-clicking on the selected database connection setting, and select “Delete”.

DB Type	DB Name	Login Name	Login...	IP or Path	Port
MS SQL	TestDB	sa	****	localhost	1433
MySQL	TestDB	sa	****	192.168.100.50	3306

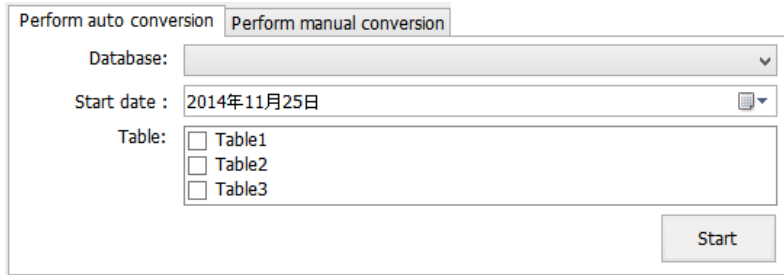
5.5.4 Database Conversion

There are 2 ways to perform the database conversion function as “Auto Conversion” and “Manual Conversion”. Before user performs the database convert function, please make sure if the Database connection setting to the database works properly.

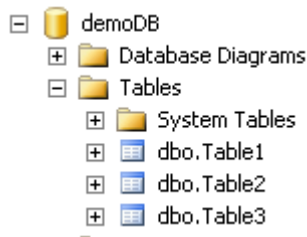
- Auto Conversion

Enable this function will let PMC Data Server automatically transferred the power data files of PMC into the Database system based on the format setting of [“5.4 Data Table Editing and Binding”](#). The process to perform “Auto Conversion” function is as follows:

In the “Perform auto conversion” tab, select a database connection from the “Database” drop down list; Select the start time for the operation and at least one Data table in the “Table” checkbox list. After completing the setting, click “Start” button to start database conversion function. When this function is executed, all operations on the user interface will be locked to prevent possible error, and “Start” button will become “Stop” button. If the user would like to perform any operation immediately, the user can stop the convert function by clicking “Stop” button. The operations on the user interface will go back to normal again.

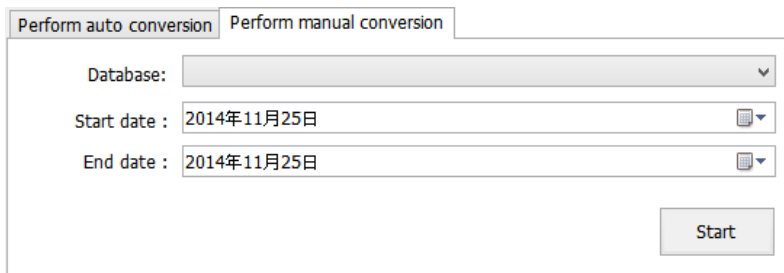


After the power data is converted and saved in the database, the database structure will be similar to that shown below:



- Manual Conversion

In the “Perform manual conversion” tab, select a database connection from the “Database” drop down list, identify the start time and end time of the Database conversion operation and then click on “Start” button to perform the database conversion operation with the setting which user define manually.

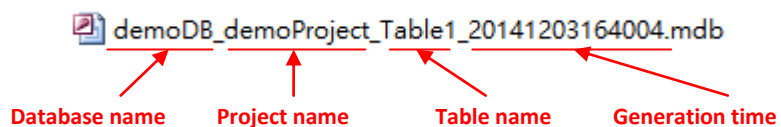


The status of the manual conversion operation will be displayed on the message list under the user interface.

If MS Access is selected as the destination database, the MS Access (*.mdb) file will be named as below.

“DatabaseName_ProjectName_TableName_GenerationTime.mdb”.

Following is an example of MS Access file for reference:



If MS SQL or MySQL is selected as the destination database, all names of the tables in the database will be consistent as the setting in [5.4.1“Data Table Editing”](#).