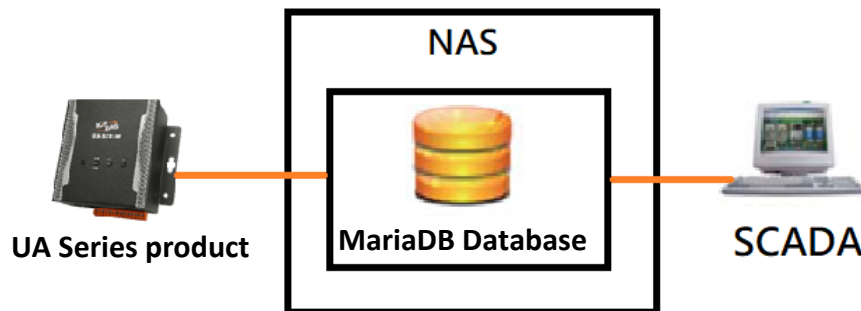


Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	1 / 45

● **How to save the UA collected data into MariaDB in NAS and then show the trend chart in InduSoft? (Take NAS DS712+ as an example)**

UA series products of ICP DAS provide a useful service to transfer TCP/RTU data into the database. The NAS can be used to store the database data, and then by using InduSoft can retrieve the data to manage the database easily. Due to the time format written by UA being different from the reading format of InduSoft, here is how InduSoft read data.

(In this example, we use UA-5231M-4GE / Windows 10 64 bits OS / MariaDB 10 Database / NAS DS712+ / DL-302 with Modbus RTU protocol)



This FAQ will introduce:

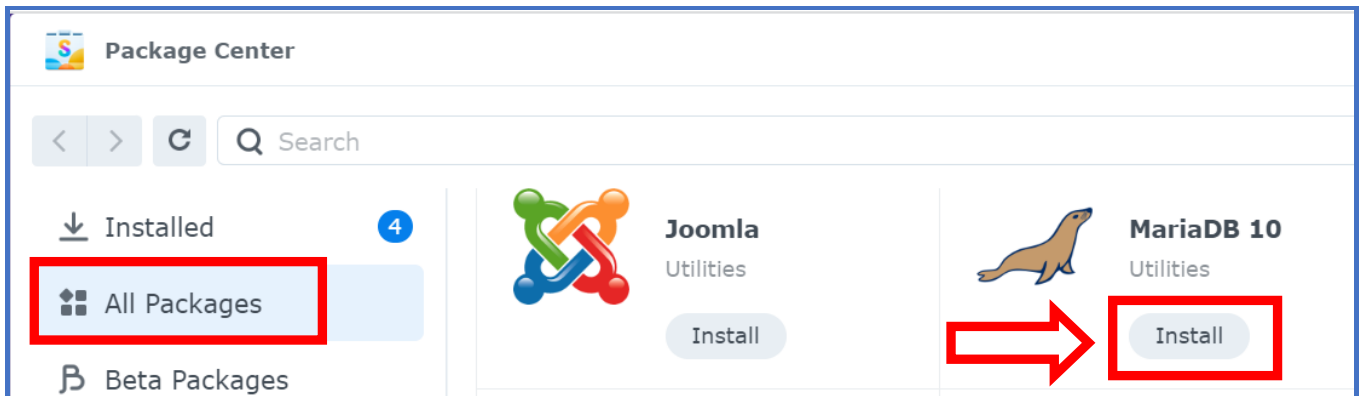
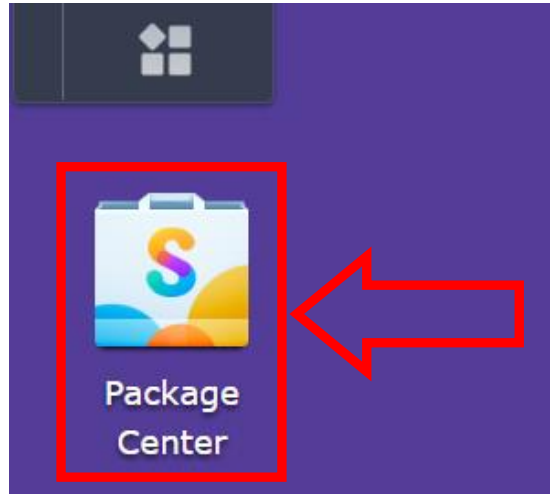
1. How to Create MariaDB Environment in NAS?
2. How to set up UA products to save Modbus RTU data into the Database?
3. After transferring UA data into Database, how to combine the Date and Time columns?
4. How InduSoft read data in the Database?

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	2 / 45

1. How to Create MariaDB Environment in NAS?

First, go to [Package Center] of NAS.

In the [All Packages], select [MariaDB 10] and click on the [Install].



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	3 / 45

Fill in the password to install the package.

MariaDB 10 - Install

Set up MariaDB

New password:
 Confirm password:
 Port:

Password does not meet the current strength rules. The minimum password length is 10 characters and must include mixed case, numeric characters, and special characters; it must also exclude common passwords or using username as password.

Next

MariaDB 10 - Install

Confirm settings

The wizard will apply the following settings and start to install the package.

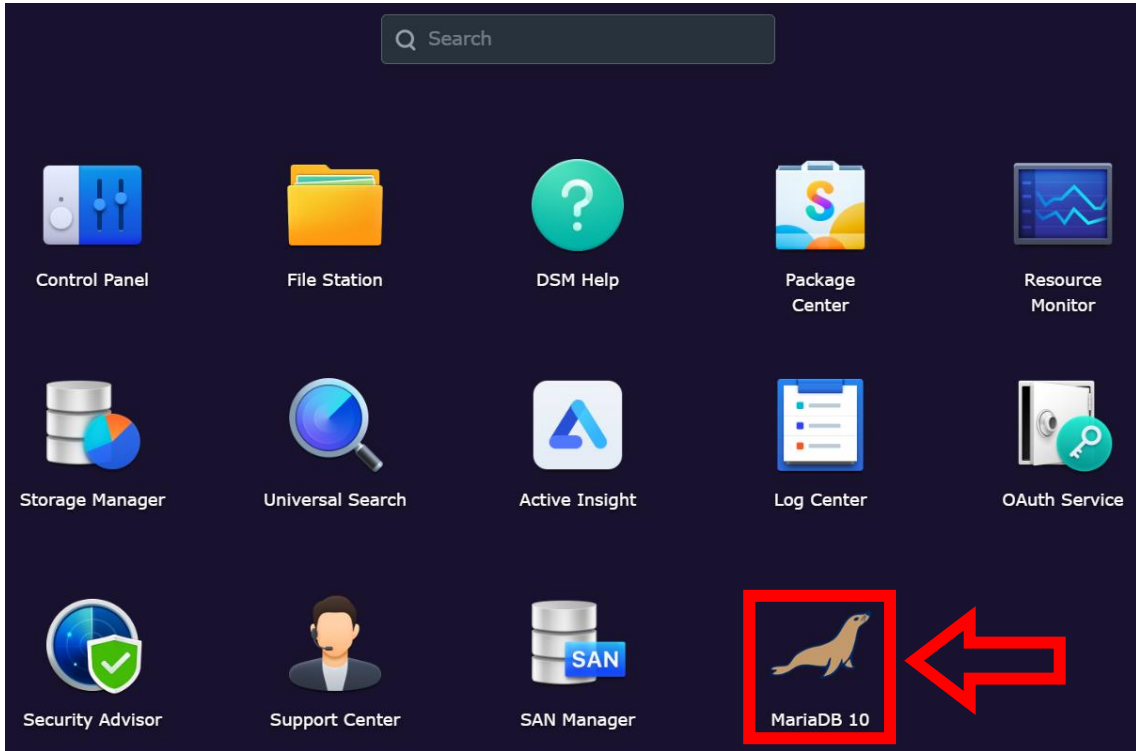
Item	Value
Package name	MariaDB 10
Newest online version	10.3.32-1040
Developer	MariaDB Foundation
Publisher	Synology Inc.
Description	MariaDB is a community-developed fork of MySQL and is one of the most widely used open-source relational database management system (RDBMS). It is highly compatible with MySQL and allows users to effortlessly

Run after installation

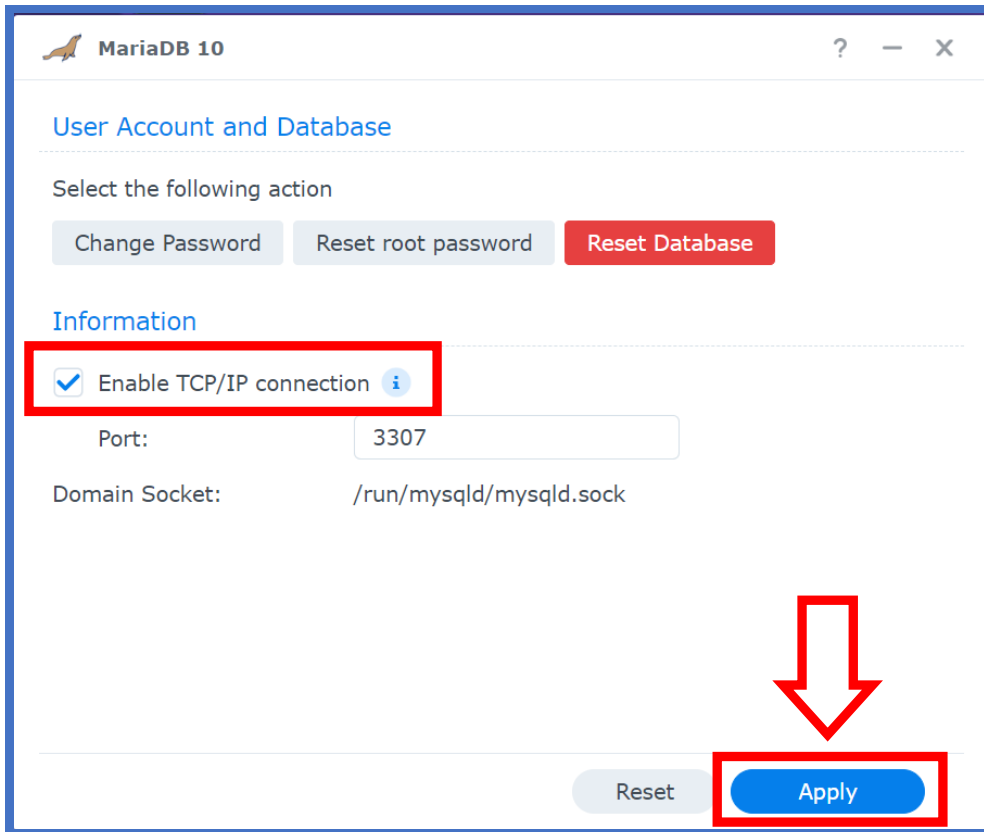
Back Done

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	4 / 45

Run the MariaDB 10.

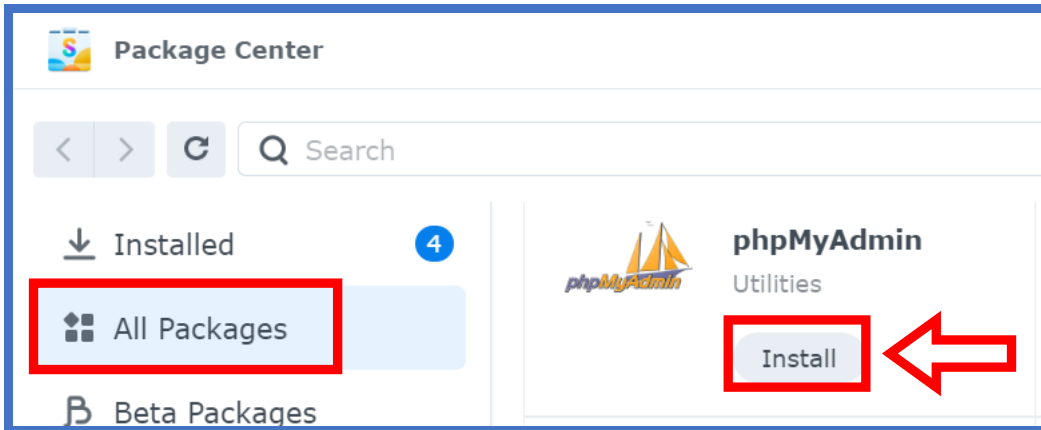


Check the [Enable TCP/IP connection] and click [Apply].

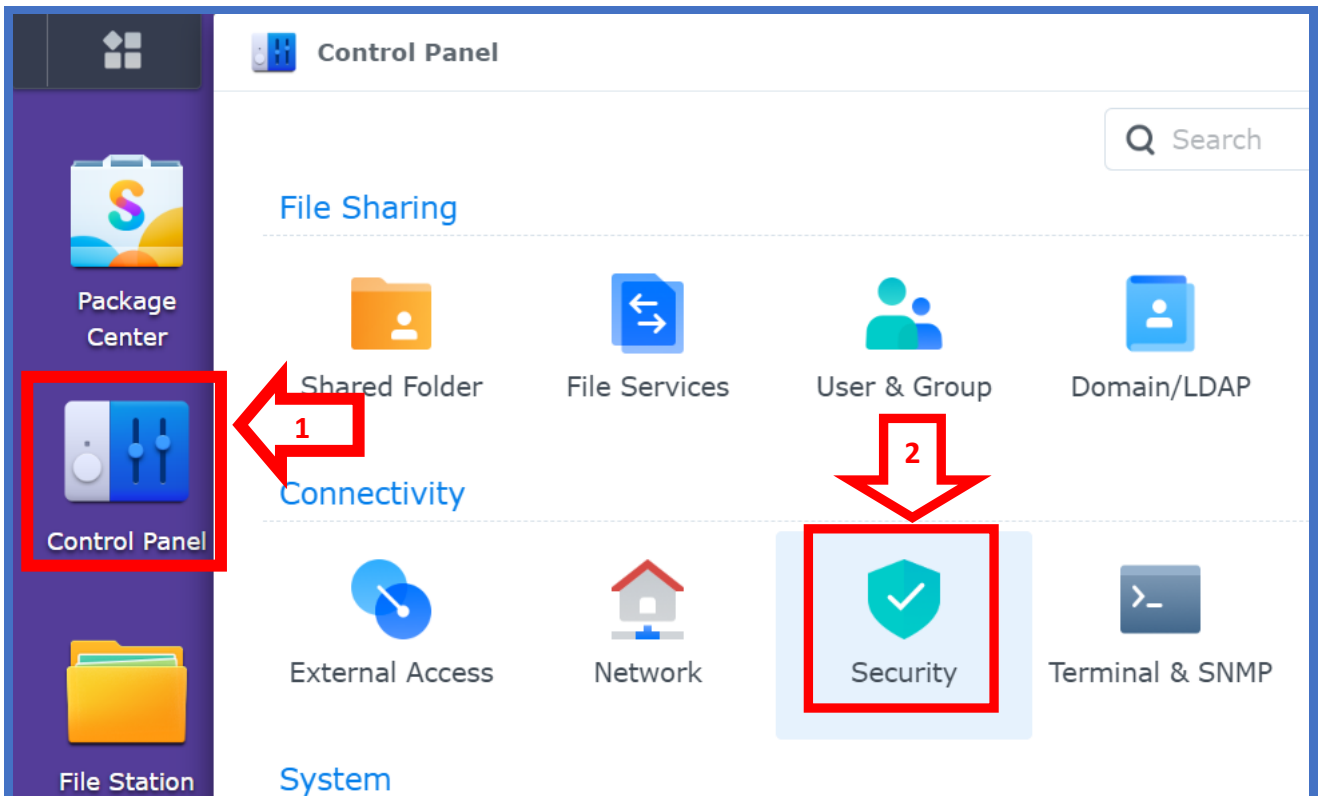


Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	5 / 45

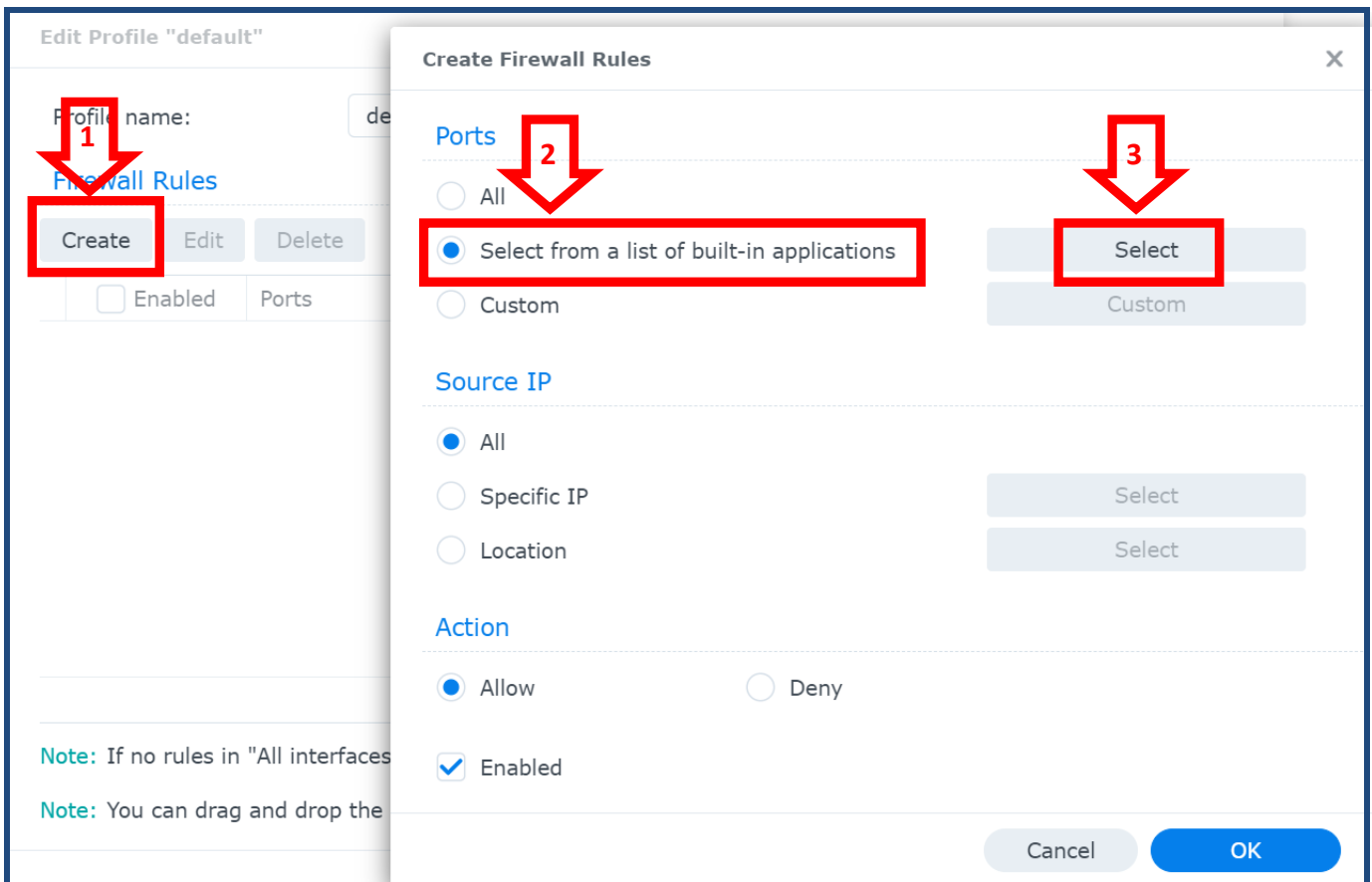
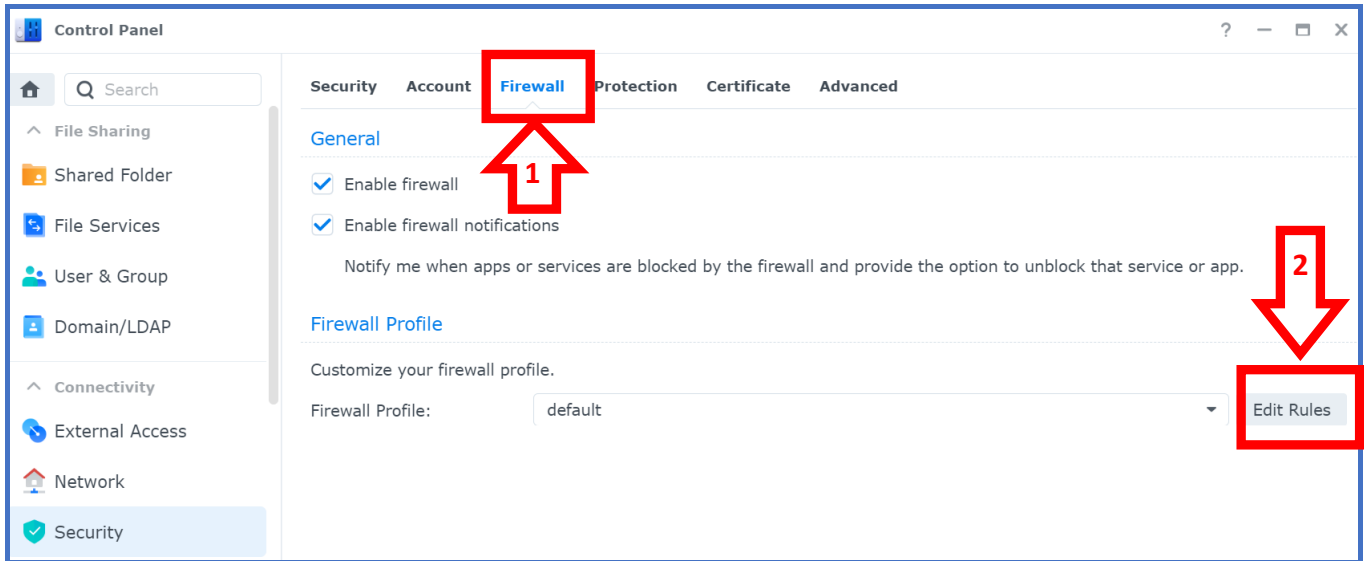
In the [All Packages], select [phpMyAdmin] and click on the [Install].



If the firewall is enabled, go to [Control Panel] and then the [Security] to set it up.

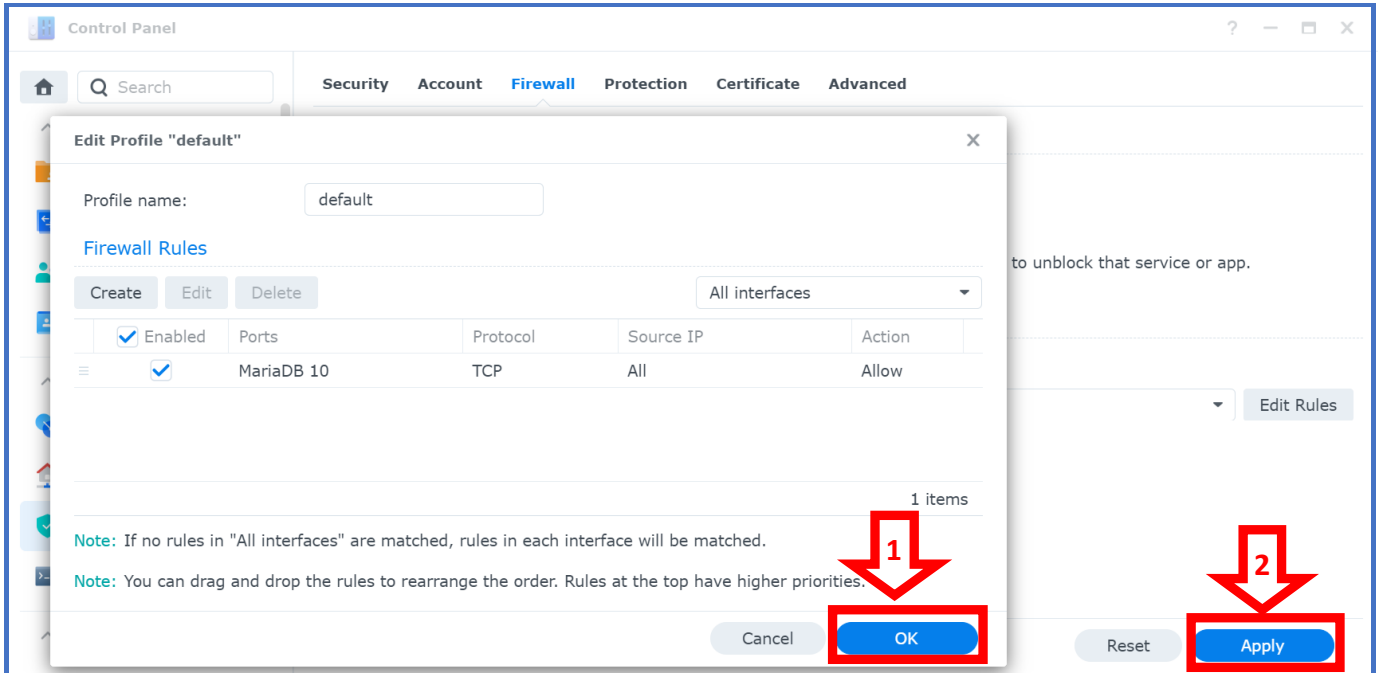
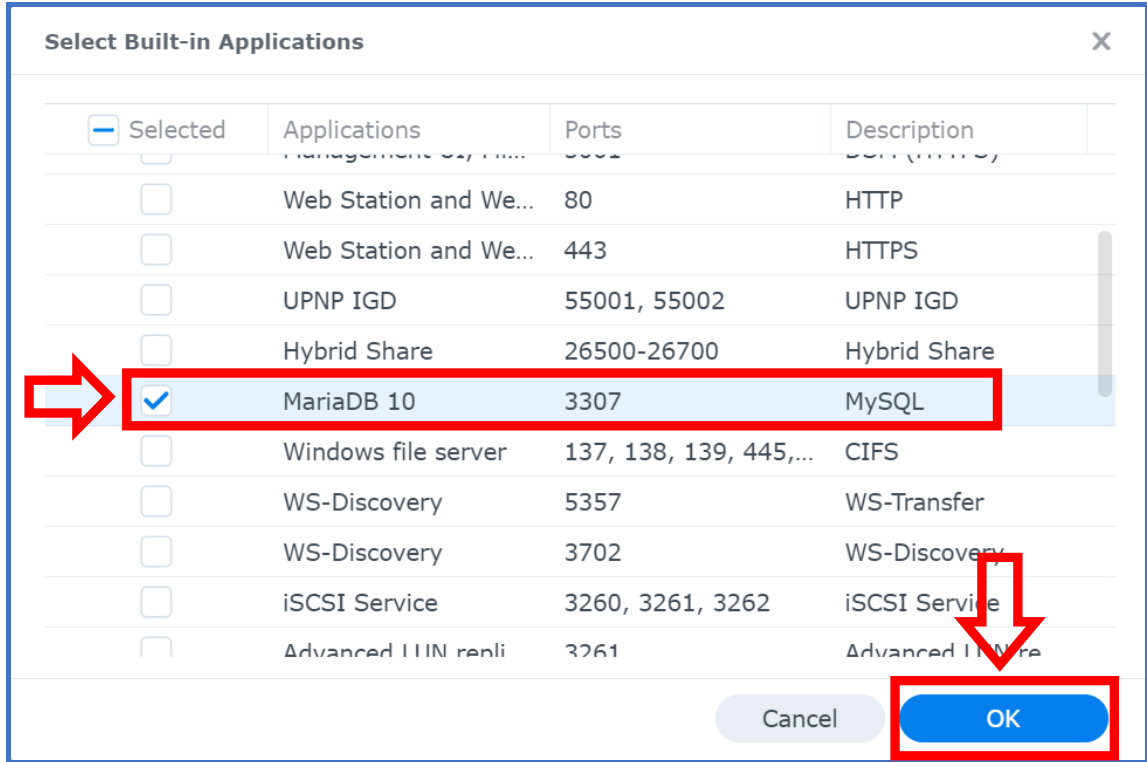


Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	6 / 45	



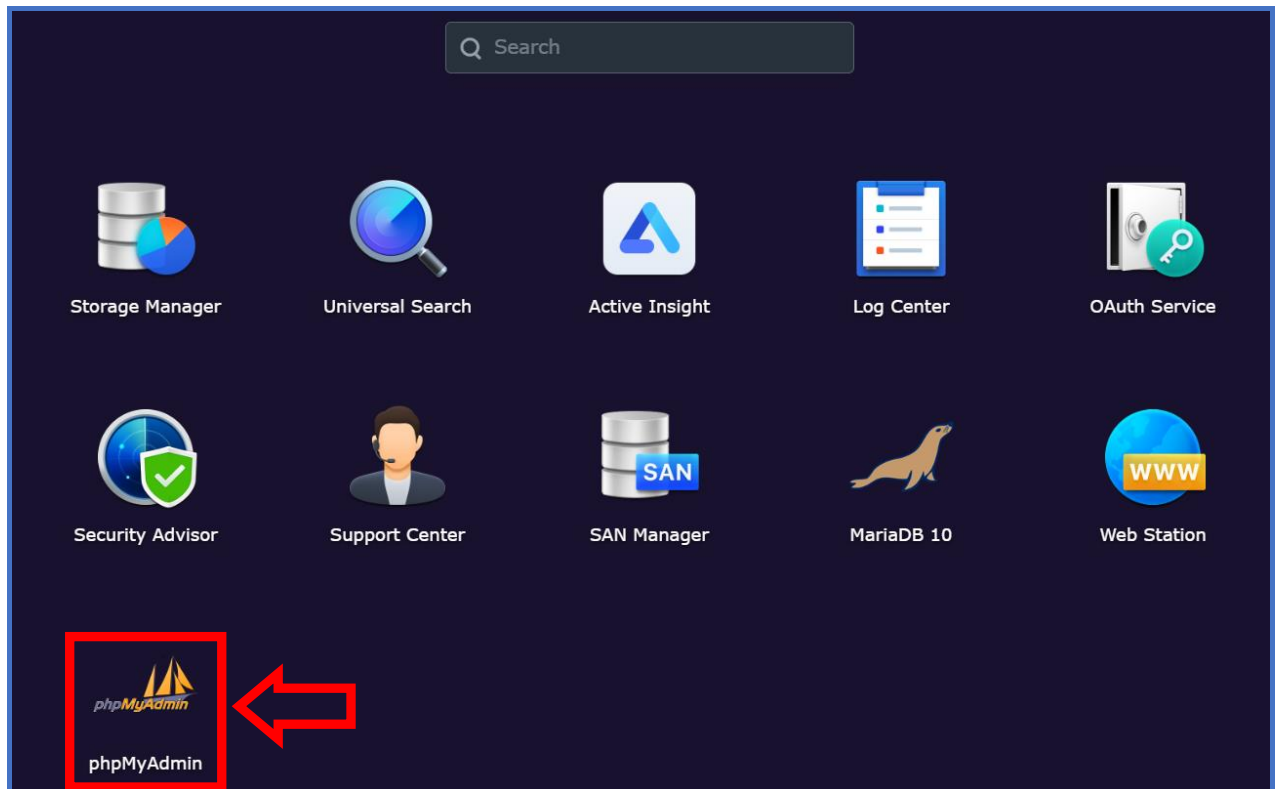
Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	7 / 45

Add the MariaDB 10 to the Allow list.



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	8 / 45

After settings, click the Menu icon on the left top, and run the **phpMyAdmin**.



Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	9 / 45	

Default Username: root

Password: password entered during installation

Add user account.

Server: MariaDB 10

Databases SQL Status **User accounts** Export Import Settings

User accounts overview

	User name	Host name	Password	Global privileges	Grant	Action
<input type="checkbox"/>	root	127.0.0.1	Yes	ALL PRIVILEGES	Yes	Edit privileges Export
<input type="checkbox"/>	root	:::1	Yes	ALL PRIVILEGES	Yes	Edit privileges Export
<input type="checkbox"/>	root	localhost	Yes	ALL PRIVILEGES	Yes	Edit privileges Export

↑ Check all With selected: Export

New

Add user account

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	10 / 45	

Add User accounts, allow any host to be [%], and set [password].

Server: MariaDB 10

Databases SQL Status User accounts Export Import Settings

Add user account

Login Information

User name: Use text field (1)

Host name: Any host % (2)

Password: Use text field Strength: (3)

Re-type:

Authentication plugin: Native MySQL authentication

Generate password:

Database [Permission] setting, check [Check All], and click [Go].

Global privileges Check all

Note: MySQL privilege names are expressed in English.

Data

- SELECT
- INSERT
- UPDATE
- DELETE
- FILE

Structure

- CREATE
- ALTER
- INDEX
- DROP
- CREATE TEMPORARY TABLES
- SHOW VIEW
- CREATE ROUTINE
- ALTER ROUTINE
- EXECUTE
- CREATE VIEW
- EVENT
- TRIGGER

Administration

- GRANT
- SUPER
- PROCESS
- RELOAD
- SHUTDOWN
- SHOW DATABASES
- LOCK TABLES
- REFERENCES
- REPLICATION CLIENT
- REPLICATION SLAVE
- 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

SSL

REQUIRE NONE

REQUIRE SSL

REQUIRE X509

SPECIFIED

REQUIRE CIPHER

REQUIRE ISSUER

REQUIRE SUBJECT

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	11 / 45	

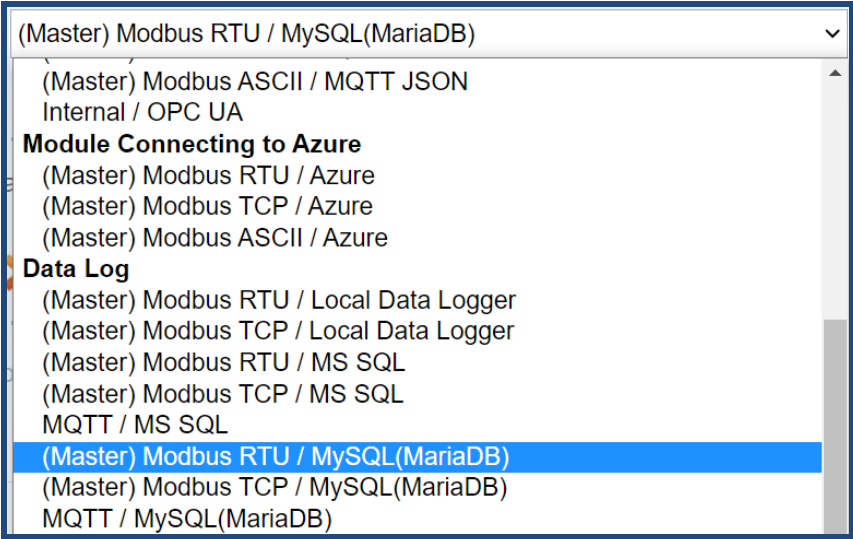
2. How to set up UA products to save Modbus RTU data into the Database?

Enter `http://192.168.255.1` in the URL bar and after the Web UI login page appears, log in with the default Web UI account/password `root/root`.

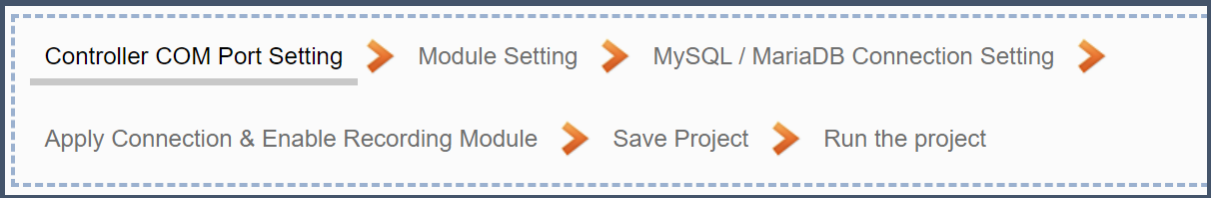
After successful login, go to [System Setting] => [Network Setting] => [Network Setting (LAN1)] to change the network settings according to the actual network environment.

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	12 / 45	

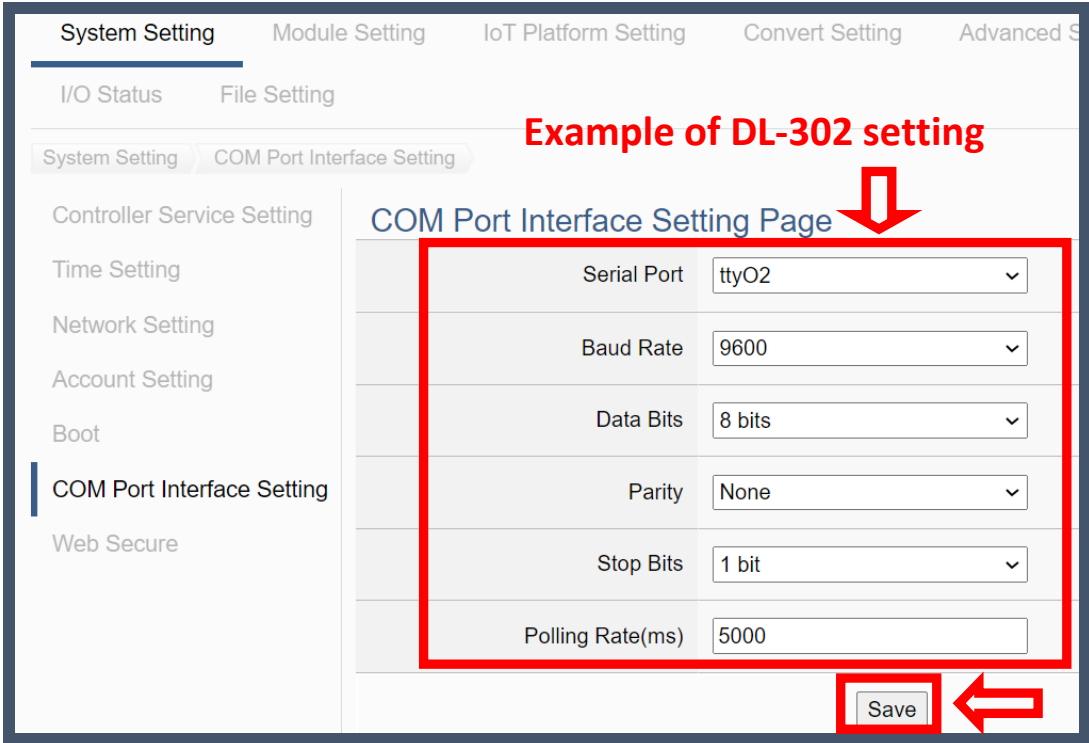
After re-entering the page, select [(Master) Modbus RTU / MySQL(MariaDB)] from the menu in the upper right corner.



Simply follow the steps on the screen to set up and complete your project!



COM Port settings are based on the DL-302 as an example.



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	13 / 45

Address: Sets the address for a module.
 Default: 1
 Range: 0 ~ 255

Protocol: Sets the communication protocol.
 - ModbusRTU (default)
 - DCON
 - DCONChkSum: uses DCON protocol and enables checksum validation feature

Baud Rate
 Default: 9600
 Support Baud Rate: 1200/ 2400/ 4800/ 9600/ 19200/ 38400/ 57600/ 115200 (unit: bps)

Parity
 Default: N,8,1
 Support format: N81, N82, E81, O81

Response Delay (ms): Sets the delay time between receiving the command and sending the data.
 Default: 0 ms
 Range: 0 ~ 30 (unit: ms)

Save: Saves the modification and returns to the Settings menu.
 All the changes take effect immediately after saving changes.

Skip: Returns to the Settings menu without saving any changes.

System Setting **Module Setting** IoT Platform Setting Convert Setting Advanced Setting Logger Setting

I/O Status File Setting

1. Select [Serial Port]

Module Setting RTU Module (Master)

Modbus

RTU Module (Master)

TCP Module (Master)

ASCII Module (Master)

MQTT

MQTT Module

EtherNet/IP

ICPDAS Module

Internal

Modbus RTU Module List

Serial Port: ttyO2

Load ICPDAS Module: Select The Module Update ICPDAS Module List

Select All	No.	*Module Name / Nickname	Edit
<input type="checkbox"/>	1	Name	

Copy Remove < 0 / 0 >

3. Select to add Save 4. Click [Save]

2. Enter Name

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	14 / 45	

System Setting **Module Setting** IoT Platform Setting Convert Setting Advanced Setting Logger Setting

I/O Status File Setting

Module Setting > RTU Module (Master)

Modbus

- RTU Module (Master)
- TCP Module (Master)
- ASCII Module (Master)

MQTT

- MQTT Module

EtherNet/IP

- ICPDAS Module

Internal

- Internal Module

Modbus RTU Module List

Serial Port: ttyO2

Load ICPDAS Module: Select The Module [Update ICPDAS Module List](#)

Select All	No.	*Module Name / Nickname	Edit
<input type="checkbox"/>	2	Name	
<input type="checkbox"/>	1	Name	Edit

Copy Remove < 1 / 1 >

[Remove all](#) [Save](#)

Module Content Setting

No.	1
Module Name	Name
Slave ID	1
Timeout(ms)	500
Write Retry	<input type="checkbox"/> 1

Modbus Mapping Table Setting

Data Model	01 Coil Status(0x)
Start Address	0
Data Number	1
Create Tables	Add

Set it according to the Modbus Mapping Table, Provided in the module manual, and click [Add]

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	15 / 45

Module Content Setting

No.	The module number in the module list (Not editable here)
Module Name	Give a name, e.g. model number or name. Default: Name.
Slave ID	Set the module Slave ID of the UA. (Range: 1 ~ 247)
Timeout	Set the timeout value for the module. Default: 500 ms

Modbus Mapping Table Setting

Data Model	System provides 4 Modbus data models "01" ~ "04" for mapping to address of DO, DI, AO and AI. (ex. 01: DO channels, 02: DI, 03: AO, 04: AI)	<div style="border: 1px solid black; padding: 2px;"> 01 Coil Status(0x) 02 Input Status(1x) 03 Holding Registers(4x) 04 Input Registers(3x) </div>
Start Address	The start address of the Modbus command. Note: the Start Address of UA is bass on 0, even if some modules are bass on 1, here it needs to follow UA to set bass on 0.	
Data Number	The number of the Modbus address. Need to give enough number for the DO, DI, AO, AI channels of the module. Default: 1.	
Type	This item only when the data model is 03 or 04. Choose the suitable data type: 16-bit Short, 16-bit Unsigned Short, 32-bit Long, 32-bit Unsigned Long, 32-bit Float, 64-bit Double.	
Create Tables	Click [Add] button, it will add a table in the Modbus mapping table.	

DL-302 Modbus Address Mappings (Base 1)

Address	Description	Attribute
30001 ~ 30006	Analog input value of channel 0 to 5. channel 0: CO ₂ in 1ppm,	R
40001 ~ 40006	channel 1: relative humidity in 0.01%, channel 2: temperature in 0.01°C, channel 3:temperature in 0.01°F, channel 4: dew point temperature in 0.01°C, channel 5: dew point temperature in 0.01°F	

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	16 / 45	

Address Setting: Modbus Mapping Table Display and Edit

Modbus Mapping Table **Address** Nickname Scaling Bitwise

Coil Status(0x) Input Status(1x) Holding Registers(4x) Input Registers(3x)

Take the address 40001-40006 (Base 1) in the DL-302 manual as an example.

Address	0
Number	6
Type	Short
<input type="button" value="Edit"/>	

Nickname Setting: If you want to set the variable name or add a description, you can click [Nickname Setting] to add it.

Modbus Mapping Table Address **Nickname** Scaling Bitwise

01 Coil Status(0x)

(1)

Table Display

Address	Variable name	Data Type	Description
---------	---------------	-----------	-------------

02 Input Status(1x)

Table Display

Address	Variable name	Data Type	Description
---------	---------------	-----------	-------------

03 Holding Registers(4x)

Table Display

Address	Variable name	Data Type	Swap	Description
---------	---------------	-----------	------	-------------

04 Input Registers(3x)

Table Display

Address	Variable name	Data Type	Swap	Description
0	<input type="text" value="CO2"/>	Short	<input type="checkbox"/>	<input type="text"/>
1	<input type="text" value="RH"/>	Short	<input type="checkbox"/>	<input type="text"/>
2	<input type="text" value="TC"/>	Short	<input type="checkbox"/>	<input type="text"/>
3	<input type="text" value="TF"/>	Short	<input type="checkbox"/>	<input type="text"/>
4	<input type="text" value="DC"/>	Short	<input type="checkbox"/>	<input type="text"/>
5	<input type="text" value="DF"/>	Short	<input type="checkbox"/>	<input type="text"/>

(2)

(3)

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	17 / 45	

I/O Status File Setting

Advanced Setting MySQL / MariaDB

PID Operation

IFTTT Condition Trigger

Data Logger

Local Data Logger

MS SQL

MySQL / MariaDB

Block List

MySQL / MariaDB List

Remove	Identification Name
<input type="checkbox"/>	
<input checked="" type="checkbox"/>	MariaDB
<input type="checkbox"/>	

Remove

Save

2.New → ← *1.Enter Name*

MySQL / MariaDB List

Remove	Identification Name	Status	Edit
<input type="checkbox"/>			
<input checked="" type="checkbox"/>	<input type="text" value="Name1"/>		
<input type="checkbox"/>	MariaDB	Enable	<input checked="" type="button" value="Edit"/>
	<input type="button" value="Remove"/>	<input <="" td="" type="button" value=" < 1 / 1 > "/>	

Save

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	18 / 45

Enter the name of the database and table, and click [OK].

MySQL / MariaDB Connection Settings

Identification Name	<input type="text" value="MariaDB"/>
Database Name	<input type="text" value="chris_test"/>
Table Name	<input type="text" value="test"/>
IP	<input type="text" value="192.168.85.123"/>
Port	<input type="text" value="3307"/>
Account	<input type="text" value="chris"/>
Password	<input type="password" value="....."/>
Log Mode	<input type="text" value="Cycle"/> ▾
Interval Seconds	<input type="text" value="5"/>
Date Time Format	<input type="text" value="[yyyy-MM-dd], [HH:mm:ss]"/> ▾
Enable	<input checked="" type="checkbox"/>
Test Connection	<input type="button" value="Connection"/> Success.

➔

Modbus RTU Module List

No.	*Module Name / Nickname	Edit	Database Name	All Enabled
1	Name	➔ <input style="border: 2px solid red; margin-left: 10px;" type="button" value="Edit"/>	<input type="text" value="MariaDB"/> ▾	<input checked="" type="checkbox"/>
			<input type="button" value="Apply"/>	
			<input type="button" value="Save"/>	

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	19 / 45	

Variable Table

Details

1. Select the database to match

Variable Name	Attribute	Data Type	Database Name	Enabled
CO2	Read	Short	MariaDB	<input checked="" type="checkbox"/>
RH	Read	Short	MariaDB	<input checked="" type="checkbox"/>
TC	Read	Short	MariaDB	<input checked="" type="checkbox"/>
TF	Read	Short	MariaDB	<input checked="" type="checkbox"/>
DC	Read	Short	MariaDB	<input checked="" type="checkbox"/>
DF	Read	Short	MariaDB	<input checked="" type="checkbox"/>

2. Projects to be enabled

3. Click [OK]

Modbus RTU Module List

No.	*Module Name / Nickname	Edit	Database Name	All Enabled
1	Name	<input type="button" value="Edit"/>	MariaDB	<input checked="" type="checkbox"/>

1. Confirm the selected database

2. Click [Apply]

3. Check [Enabled]

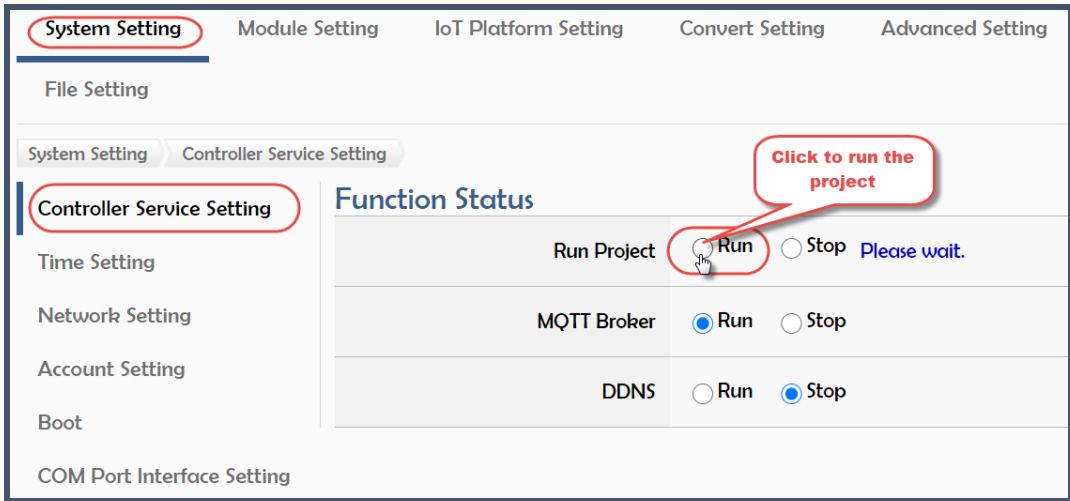
4. Click [Save]

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	20 / 45	

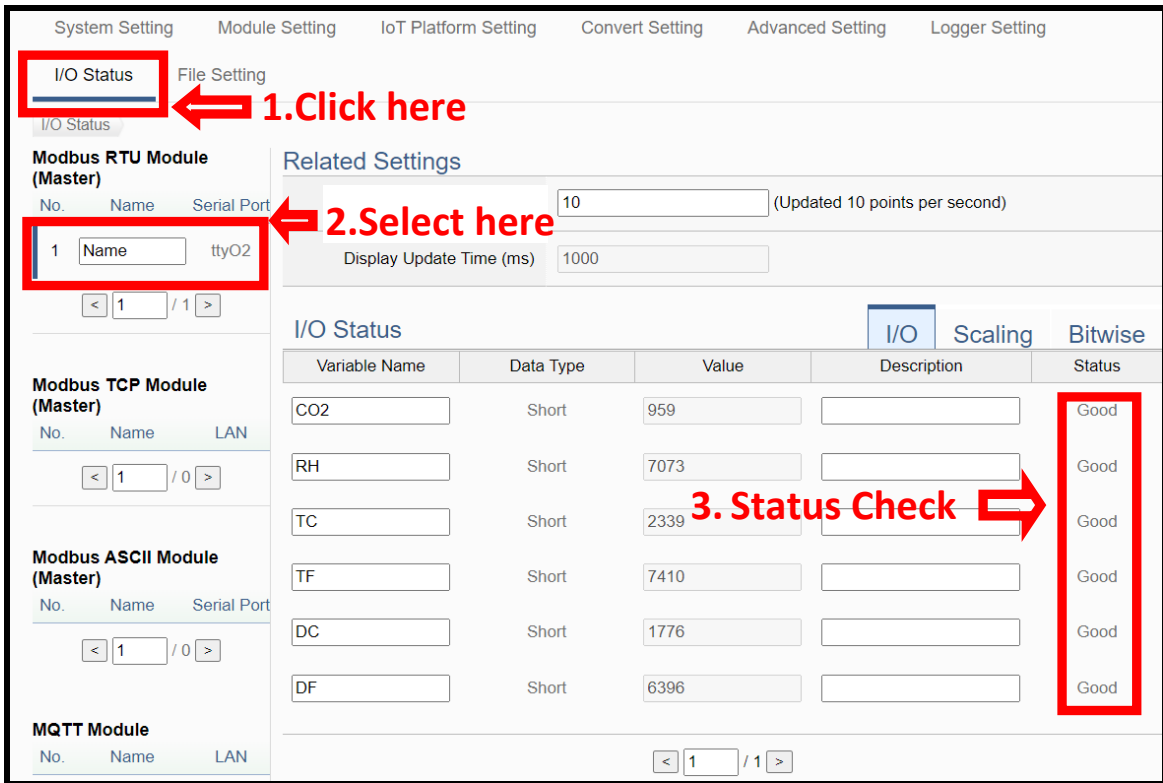
Click the next step [Save Project], the Step Box will show an animation as in the below picture which means the project is saving. When the animation vanished, the project was saved completely.



After saving, the project needs to execute. Click the next step [Run the Project]. This step can also be done via the [System Setting > Controller Service Setting > Run Project] to Stop and Run the project.



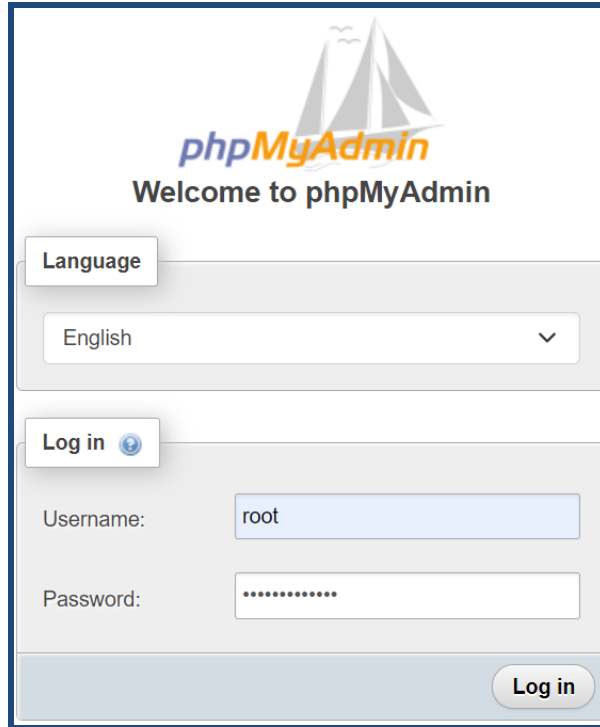
To check the I/O Status, click the [I/O status] and choose from the left-hand list. Confirm the connection value and status.



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	21 / 45

3. After transferring UA data into Database, how to combine the Date and Time columns?

Log in to phpMyAdmin, and enter your account and password.



Confirm the table and data written for the UA product and a warning message will appear at the top.

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 24 (246 total, Query took 0.0001 seconds.)

Confirm the table and the data being written

warning message

Date	Time	Name	Value	Status
2023-07-18	16:46:18	MRTU_No.1_Name_AI.CO2	962	GOOD
2023-07-18	16:46:18	MRTU_No.1_Name_AI.RH	7083	GOOD
2023-07-18	16:46:18	MRTU_No.1_Name_AI.TC	2337	GOOD
2023-07-18	16:46:18	MRTU_No.1_Name_AI.TF	7406	GOOD
2023-07-18	16:46:18	MRTU_No.1_Name_AI.DC	1777	GOOD
2023-07-18	16:46:18	MRTU_No.1_Name_AI.DF	6398	GOOD
2023-07-18	16:46:23	MRTU_No.1_Name_AI.CO2	961	GOOD
2023-07-18	16:46:23	MRTU_No.1_Name_AI.RH	7081	GOOD
2023-07-18	16:46:23	MRTU_No.1_Name_AI.TC	2337	GOOD

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	22 / 45	

After setting the primary key, the warning message will disappear.

Expand the Table and click on the [columns], check Date/Time/Name, and press the [Primary key].

The screenshot shows the phpMyAdmin interface for a table named 'test' in the 'chris_test' database. The table structure is displayed with columns: 1 Date (char(10)), 2 Time (char(22)), 3 Name (char(100)), 4 Value (char(30)), and 5 Status (char(9)). Columns 1, 2, and 3 are selected. The 'Primary' button is highlighted with a red box and arrow (3). The 'Columns' link in the left sidebar is highlighted with a red box and arrow (1). A red arrow (2) points to the selected columns.

The following picture shows the settings.

The screenshot shows the table structure settings in phpMyAdmin. The 'Date', 'Time', and 'Name' columns are marked as primary keys. The 'Indexes' section shows a PRIMARY index on columns Date, Time, and Name.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input checked="" type="checkbox"/>	Date	char(10)	utf8_general_ci		No	None		Primary	Change Drop More
<input checked="" type="checkbox"/>	Time	char(22)	utf8_general_ci		No	None		Primary	Change Drop More
<input checked="" type="checkbox"/>	Name	char(100)	utf8_general_ci		No	None		Primary	Change Drop More
<input type="checkbox"/>	Value	char(30)	utf8_general_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	Status	char(9)	utf8_general_ci		Yes	NULL			Change Drop More

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
<input checked="" type="checkbox"/>	PRIMARY	BTREE	Yes	No	Date Time Name	2 250 750	A A A	No No No	

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	23 / 45	

This warning message will not display anymore.

Server: MariaDB 10 » Database: chris_test » Table: test

Showing rows 0 - 24 (750 total, Query took 0.0001 seconds.)

```
SELECT * FROM `test`
```

Number of rows: 25 | Filter rows: Search this table | Sort by key: None

	Date	Time	Name	Value	Status
<input type="checkbox"/>	2023-07-18	16:46:18	MRTU_No.1_Name_AI.CO2	962	GOOD
<input type="checkbox"/>	2023-07-18	16:46:18	MRTU_No.1_Name_AI.DC	1777	GOOD
<input type="checkbox"/>	2023-07-18	16:46:18	MRTU_No.1_Name_AI.DF	6398	GOOD
<input type="checkbox"/>	2023-07-18	16:46:18	MRTU_No.1_Name_AI.RH	7083	GOOD
<input type="checkbox"/>	2023-07-18	16:46:18	MRTU_No.1_Name_AI.TC	2337	GOOD
<input type="checkbox"/>	2023-07-18	16:46:18	MRTU_No.1_Name_AI.TF	7406	GOOD
<input type="checkbox"/>	2023-07-18	16:46:23	MRTU_No.1_Name_AI.CO2	961	GOOD
<input type="checkbox"/>	2023-07-18	16:46:23	MRTU_No.1_Name_AI.DC	1776	GOOD
<input type="checkbox"/>	2023-07-18	16:46:23	MRTU_No.1_Name_AI.DF	6396	GOOD
<input type="checkbox"/>	2023-07-18	16:46:23	MRTU_No.1_Name_AI.RH	7081	GOOD
<input type="checkbox"/>	2023-07-18	16:46:23	MRTU_No.1_Name_AI.TC	2337	GOOD
<input type="checkbox"/>	2023-07-18	16:46:23	MRTU_No.1_Name_AI.TF	7406	GOOD
<input type="checkbox"/>	2023-07-18	16:46:28	MRTU_No.1_Name_AI.CO2	961	GOOD
<input type="checkbox"/>	2023-07-18	16:46:28	MRTU_No.1_Name_AI.DC	1777	GOOD
<input type="checkbox"/>	2023-07-18	16:46:28	MRTU_No.1_Name_AI.DF	6398	GOOD

Click [New] below the database where UA sends data, fill in the table name, fill in the name/type/length/values of the columns, and click [Save], then the columns will be combined in the new table.

Server: MariaDB 10 » Database: chris_test

Table name: test_change

(1) New

Name	Type	Length/Values
DateTime	DATETIME	
Name	VARCHAR	100
Value	CHAR	10
Status	CHAR	9

(2) test_change

(3) Table comments:

(4) Save

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	24 / 45	

Then set the primary key.

The screenshot shows the phpMyAdmin interface for the 'test_change' table. The table structure is displayed as follows:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input checked="" type="checkbox"/>	1 DateTime	datetime			No	None			Change Drop More
<input checked="" type="checkbox"/>	2 Name	varchar(100)	utf8_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 Value	char(10)	utf8_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 Status	char(9)	utf8_general_ci		No	None			Change Drop More

Annotations in the image:

- (1) Points to the 'Columns' link in the left sidebar.
- (2) Points to the 'Name' column in the table structure.
- (3) Points to the 'Primary' button at the bottom of the table structure.

Click on the table where UA is transferred data, go to the upper right corner of [Triggers], and click on [Create new trigger]

The screenshot shows the phpMyAdmin interface for the 'test' table, specifically the Triggers page. The page displays the following elements:

- The 'Triggers' tab is selected in the top right corner.
- The 'Create new trigger' button is visible in the upper right area.
- The main content area shows 'There are no triggers to display.'

Annotations in the image:

- (1) Points to the 'test' table in the left sidebar.
- (2) Points to the 'Triggers' tab in the top right corner.
- (3) Points to the 'Create new trigger' button.

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	25 / 45

Entry Trigger Name

TIME Select [**AFTER**]

Event Select [**INSERT**]

And paste the following code into the definition.

BEGIN

INSERT INTO **chris_test.test_change**(DateTime,Name,Value,Status)

VALUES (concat(new.Date,' ',new.Time) ,new.Name,new.Value,new.Status);

END

<Description>

In this program, chris_test.test_change, please follow the new database name and table name to modify.

When finished, as shown below, click [**Go**]

Create new trigger

Details

Trigger name: my_merge

Table: test

Time: AFTER

Event: INSERT

Definition

```
1 BEGIN
2
3 INSERT INTO
  chris_test.test_change(DateTime,Name,Value,Status)
4
5 VALUES (concat(new.Date,' ',new.Time)
  ,new.Name,new.Value,new.Status);
6
7 END
8
```

Go Close

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	26 / 45

Confirm the success of the Trigger.

The screenshot shows the phpMyAdmin interface. On the left sidebar, the 'test_change' table is highlighted with a red box. The main window displays the table structure and data. A red box highlights the table name 'test_change' in the sidebar. Another red box highlights the table data, which includes columns for 'Date Time', 'Name', 'Value', and 'Status'. A red arrow points from the text 'Confirm the success of the Trigger' to the table data.

	Date Time	Name	Value	Status
<input type="checkbox"/>	2023-07-18 18:09:50	MRTU_No.1_Name_AI.CO2	924	GOOD
<input type="checkbox"/>	2023-07-18 18:09:50	MRTU_No.1_Name_AI.DC	1737	GOOD
<input type="checkbox"/>	2023-07-18 18:09:50	MRTU_No.1_Name_AI.DF	6326	GOOD
<input type="checkbox"/>	2023-07-18 18:09:50	MRTU_No.1_Name_AI.RH	7083	GOOD
<input type="checkbox"/>	2023-07-18 18:09:50	MRTU_No.1_Name_AI.TC	2295	GOOD
<input type="checkbox"/>	2023-07-18 18:09:50	MRTU_No.1_Name_AI.TF	7331	GOOD
<input type="checkbox"/>	2023-07-18 18:09:55	MRTU_No.1_Name_AI.CO2	924	GOOD
<input type="checkbox"/>	2023-07-18 18:09:55	MRTU_No.1_Name_AI.DC	1736	GOOD
<input type="checkbox"/>	2023-07-18 18:09:55	MRTU_No.1_Name_AI.DF	6324	GOOD
<input type="checkbox"/>	2023-07-18 18:09:55	MRTU_No.1_Name_AI.RH	7081	GOOD
<input type="checkbox"/>	2023-07-18 18:09:55	MRTU_No.1_Name_AI.TC	2294	GOOD

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	27 / 45

4. How InduSoft read data in the Database?

[Go to the Download Center of Microsoft to download the program](#)

Select x86 : vc_redist.x86.exe to download and install

URL: <https://support.microsoft.com/zh-tw/help/2977003/the-latest-supported-visual-c-downloads>

Visual Studio 2015、2017 和 2019

下載 Download the [Microsoft Visual C++ Redistributable for Visual Studio 2015、2017 和 2019](#)。下列更新是 Visual Studio 2015、2017 和 2019 最新支援的 Visual C++ 可轉散發套件。包含的是通用 C 執行階段的基準版本，如需詳細資訊，請參閱 [MSDN](#)。

- x86 : [vc_redist.x86.exe](#)  **Click here to download**
- x64 : [vc_redist.x64.exe](#)
- ARM64 : [vc_redist.arm64.exe](#)

附註 Visual C++2015、2017 和 2019 共用相同的可轉散發檔案。

例如，安裝 Visual C++2019 會影響使用 Visual C++2015 和 2017 建置的程式。不過，安裝 Visual C++2015 可轉散發將不會取代 Visual C++2017 和 2019 可轉散發所安裝的新檔案版本。

這與所有先前的 Visual C++ 版本不同，因為它們都有各自不同的執行階段檔案，而不會與其他版本共用。

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	28 / 45

Install MySQL ODBC

Go to the MySQL website to download the program

Select Windows(x86, 32-bit), MSI Installer to download and install

URL: <https://dev.mysql.com/downloads/connector/odbc/>

MySQL Installer for Windows

All MySQL Products. For All Windows Platforms. In One Package.

Starting with MySQL 5.6 the MySQL Installer package replaces the standalone MSI packages.

Windows (x86, 32 & 64-bit), MySQL Installer MSI [Go to Download Page >](#)

Other Downloads:

Download Name	Version	Size	Action
Windows (x86, 64-bit), MSI Installer (mysql-connector-odbc-8.0.21-winx64.msi)	8.0.21	14.7M	Download
Windows (x86, 32-bit), MSI Installer (mysql-connector-odbc-8.0.21-win32.msi)	8.0.21	14.2M	Download
Windows (x86, 32-bit), ZIP Archive (mysql-connector-odbc-noinstall-8.0.21-win32.zip)	8.0.21	14.0M	Download
Windows (x86, 64-bit), ZIP Archive (mysql-connector-odbc-noinstall-8.0.21-winx64.zip)	8.0.21	14.5M	Download

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Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	29 / 45	

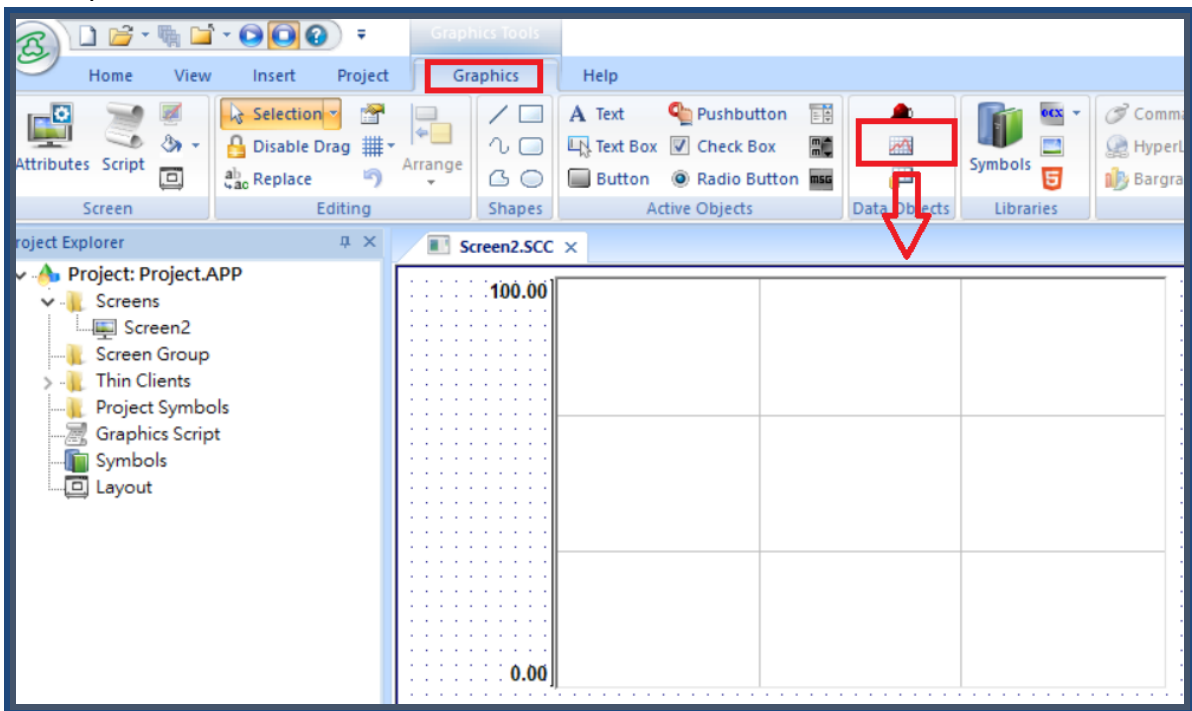
ODBC Settings

Before setting up InduSoft to read the database in this section, please make sure that the InduSoft (IWS) remote MariaDB database access function has been set up, if not, please complete it first, you can refer to the MySQL ODBC settings in the following appendix to set up.

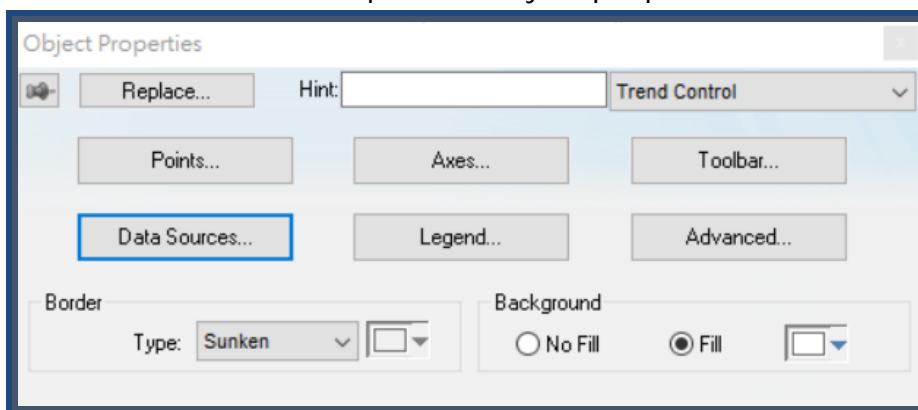
[5. Appendix: How IWS Accesses Remote MySQL Database via ODBC](#)

<Note> MariaDB 10 default port is 3307.

After completing the ODBC settings, enter InduSoft and click on the image of the trend chart in Graphics.



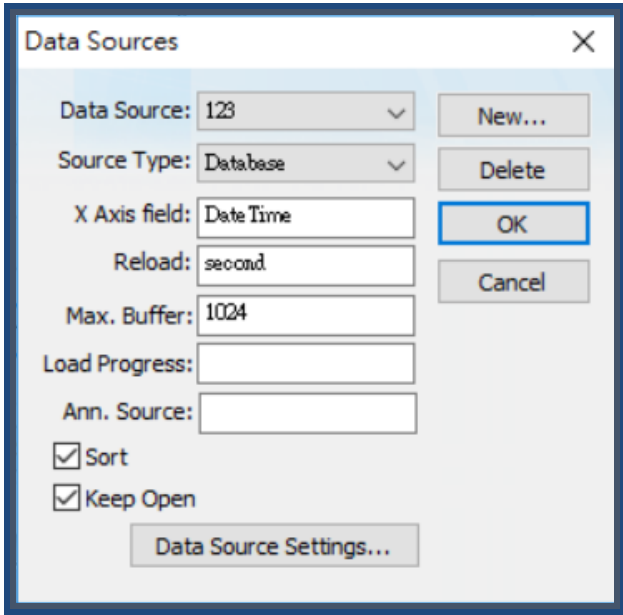
2. Double-click the trend chart to open the object properties window



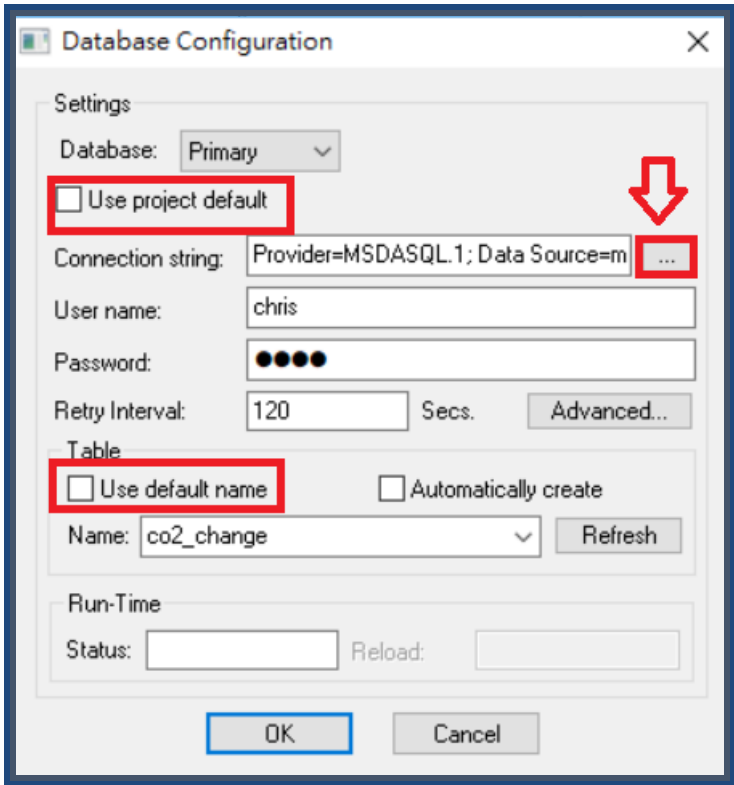
Click [Data Sources], click [New], enter a name, and then click the [Create] button.

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	30 / 45	

X Axis field is the name of the column in which the time record in the database is entered.

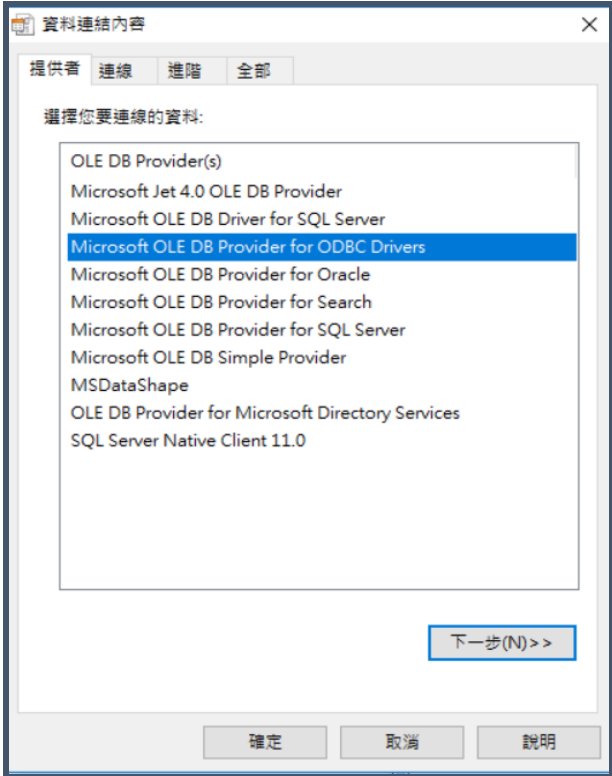


Click [Data Source Settings], cancel the checkbox of [Use project default] and [Use default name], and click the ... button.

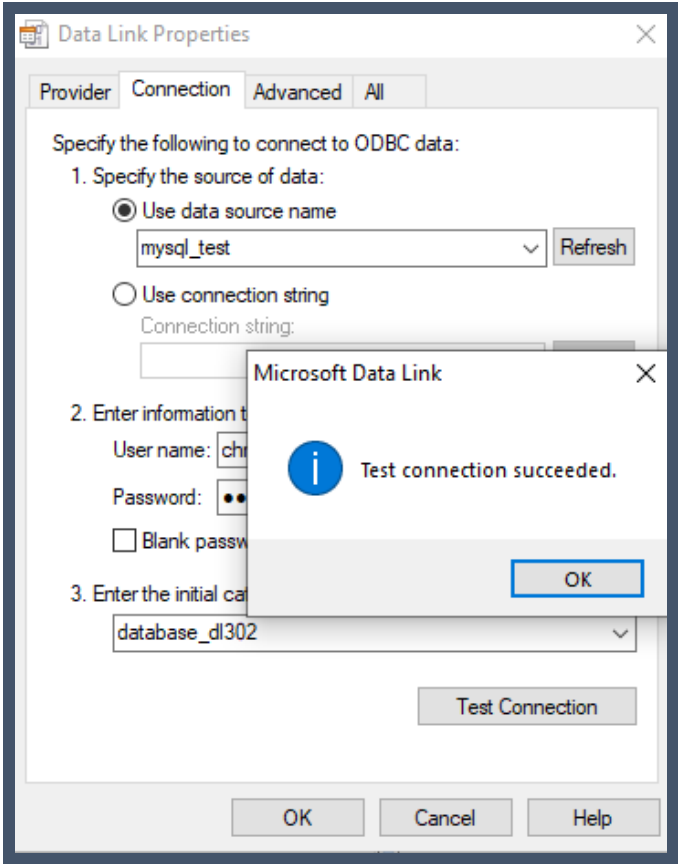


Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	31 / 45

After clicking [Microsoft OLE DB Provider for ODBC Drivers], click [Next].

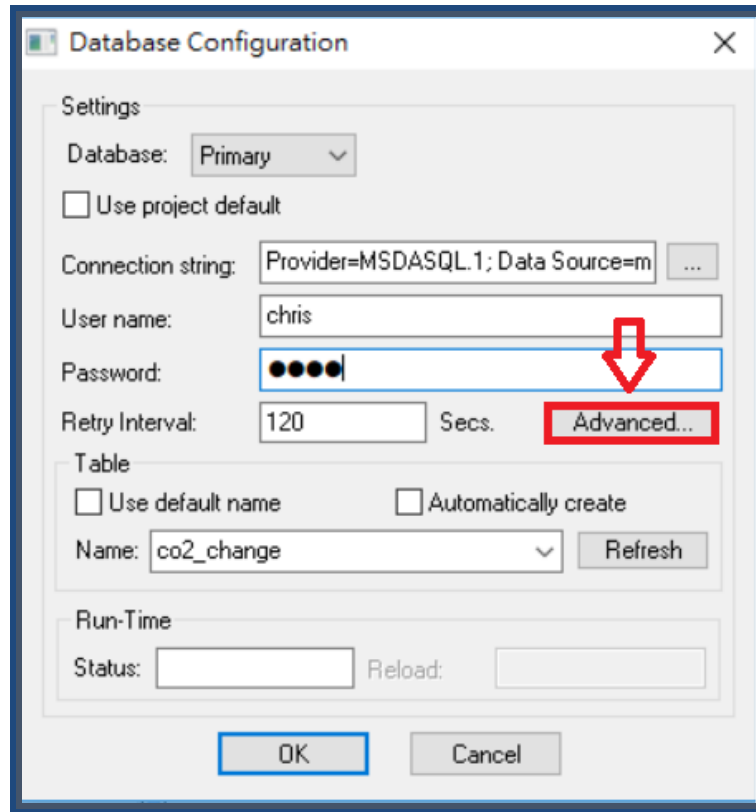


Fill in the content of [Connect], after the test connection is successful, click [OK]

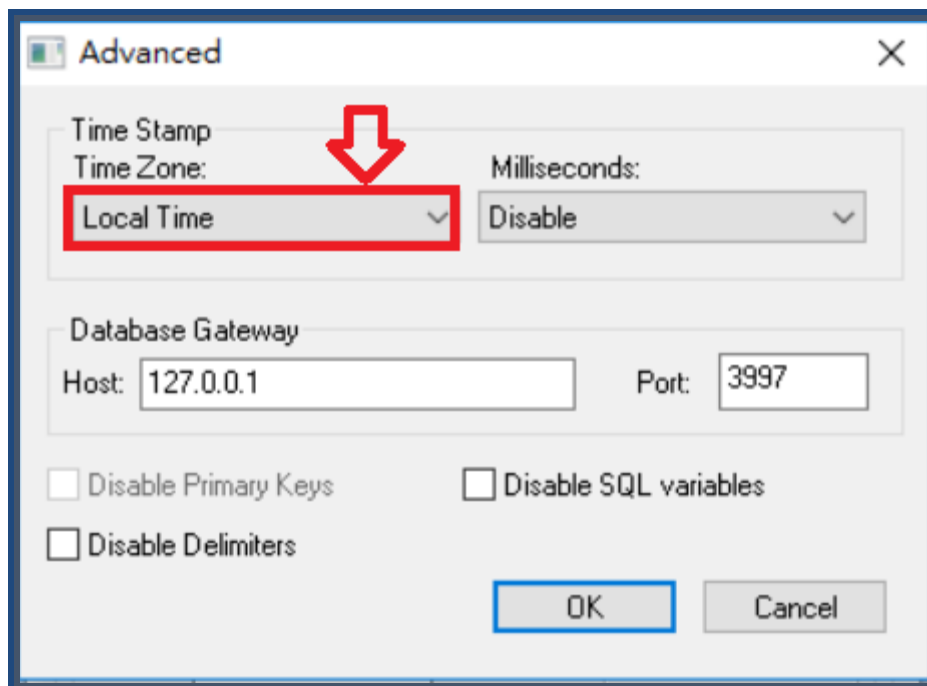


Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	32 / 45

Click [Advanced]

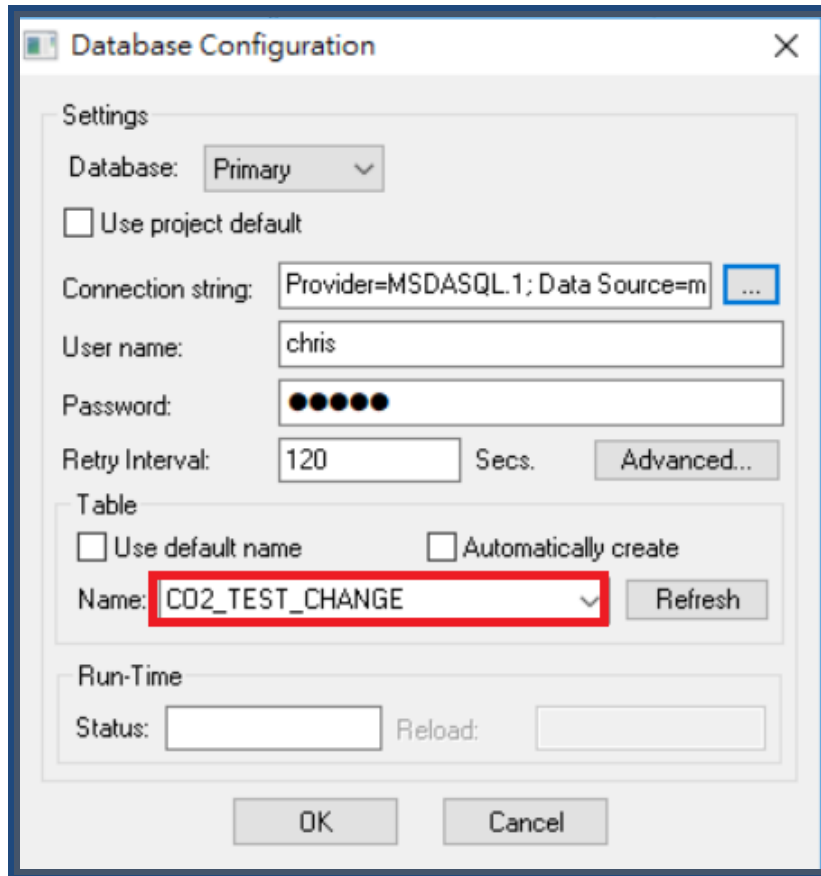


Select [Time Zone] option as [Local Time] (Depending on your needs)

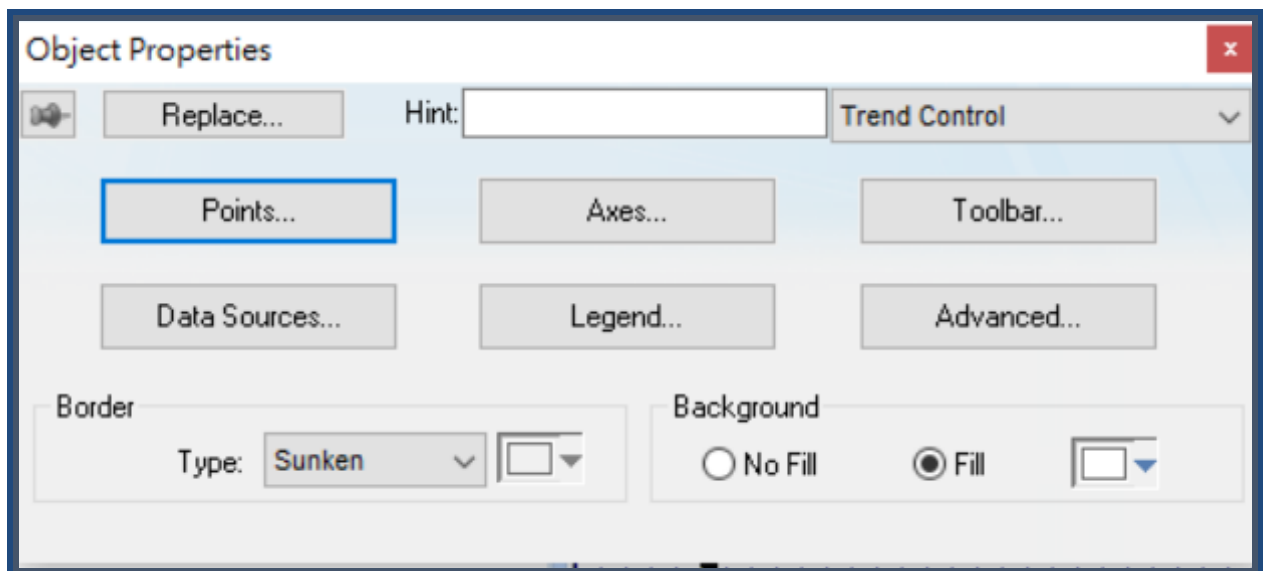


Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	33 / 45	

After selecting the table for reading, click [OK].

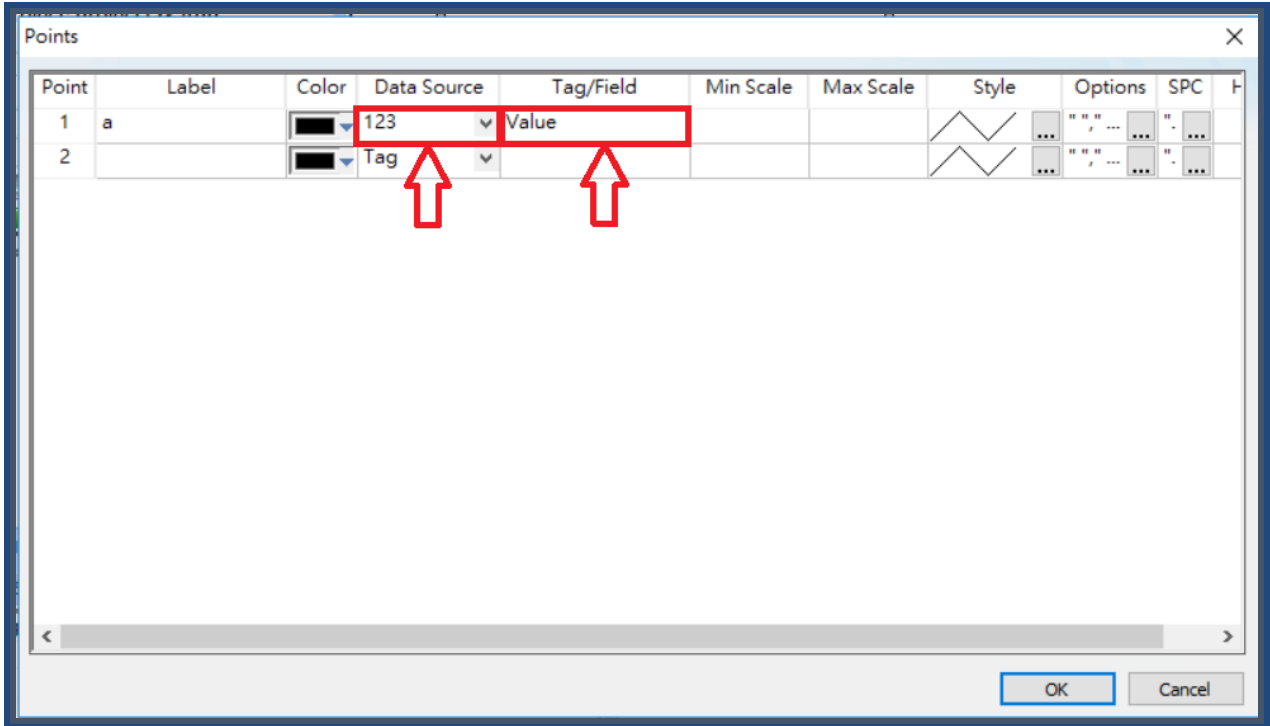


Double-click the trend chart to open the object properties window, and click [Points]

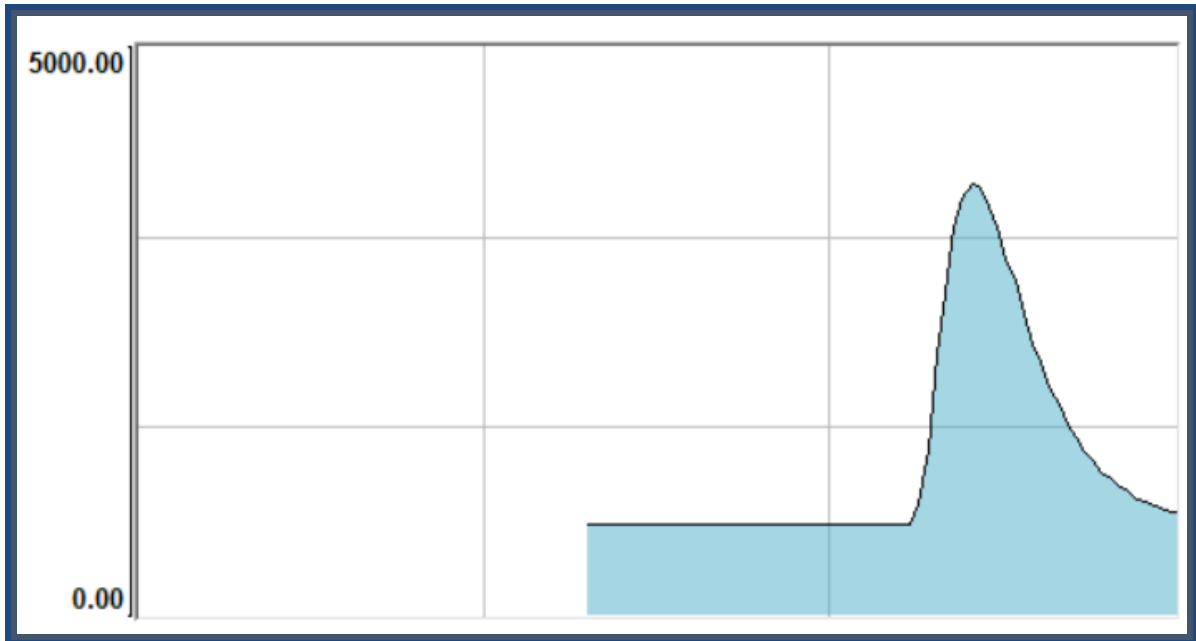


Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	34 / 45	

After selecting and filling in the Data Source and Tag/Field to be used click [OK].



Finished.



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	35 / 45

5. Appendix: How IWS accesses remote MySQL database through ODBC

Step 1 : Installation Environment (This example uses the following PC Environment)

- (1) Server: Install MySQL Workbench
- (2) Client: Install ODBC for MySQL

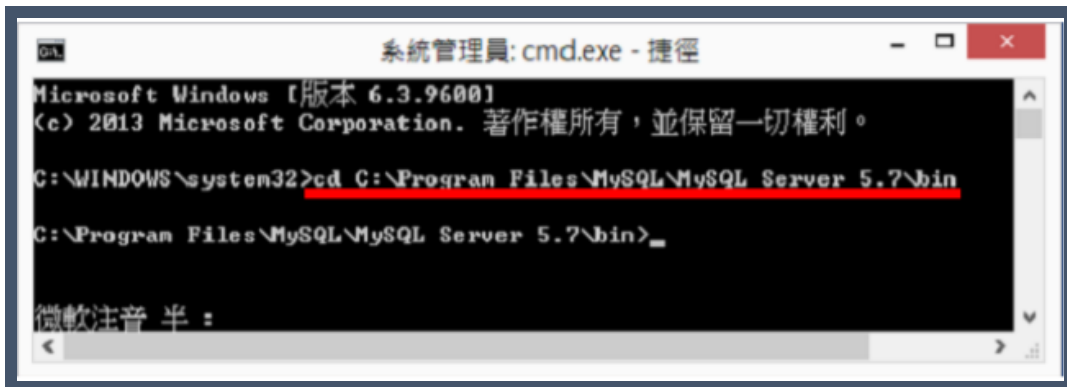
	Server Side	Client Side
OS Version	Windows 8.1 Professional	Windows 7 Professional
MySQL Workbench Version	v6.3.9 (MySQL Installer 5.7.18, x86 32bit) https://dev.mysql.com/downloads/file/?id=470091	N/A
InduSoft Version	N/A	v8.0.2.0
ODBC for MySQL	N/A	V5.3.8 (win32) https://dev.mysql.com/downloads/file/?id=470365

Step 2 : Open MySQL Server Remote connection Permission (Server Side)

- (1) Execute as Administrator: C:\Windows\system32\cmd.exe
- (2) Switch the document to where "MySQL.exe" located

```
>cd C:\Program Files\MySQL\MySQL Server version\bin
```

Note: version is the installed version. This example is 5.7

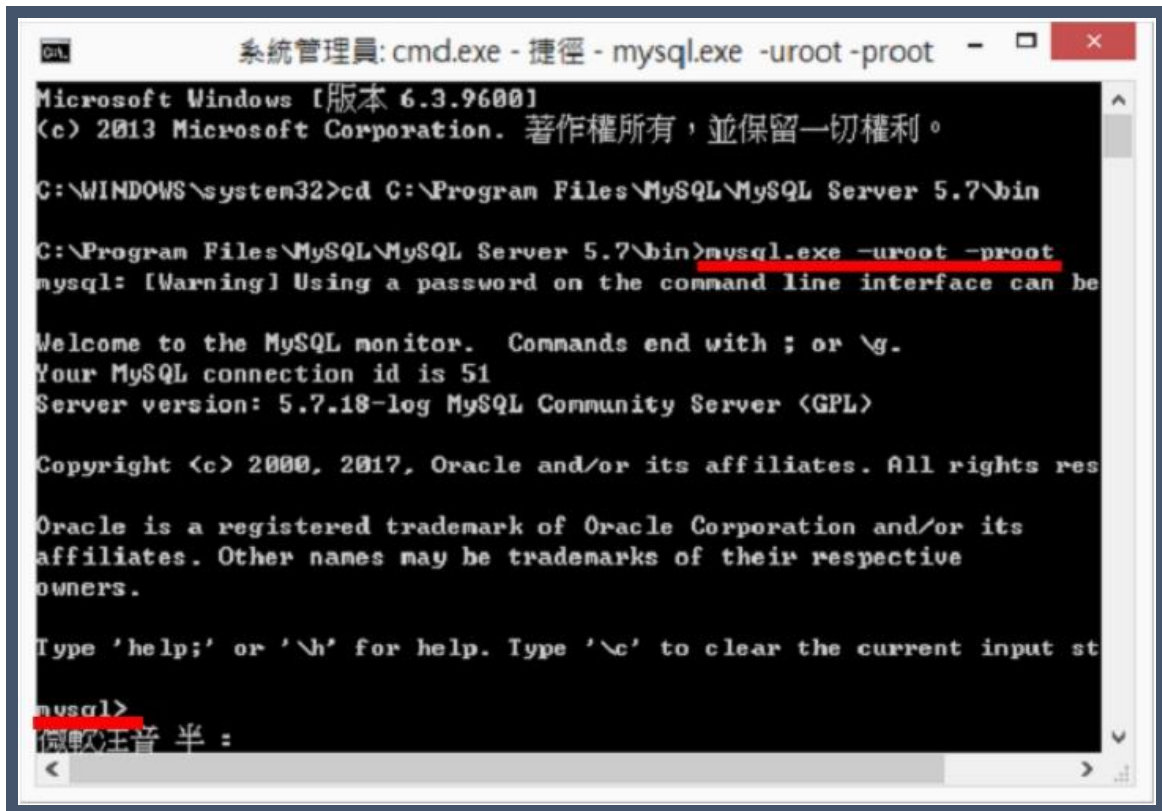


Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	36 / 45	

(3) Login MySQL server (The account / password is set during installation)

```
>mysql -uroot -proot
```

Remarks: -u **account** -p **password** (-u -p followed by account password directly without spaces). After successful login, you will see mysql>



```
系統管理員: cmd.exe - 捷徑 - mysql.exe -uroot -proot
Microsoft Windows [版本 6.3.9600]
(c) 2013 Microsoft Corporation. 著作權所有，並保留一切權利。

C:\WINDOWS\system32>cd C:\Program Files\MySQL\MySQL Server 5.7\bin

C:\Program Files\MySQL\MySQL Server 5.7\bin>mysql.exe -uroot -proot
mysql: [Warning] Using a password on the command line interface can be
unsafe.

Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 51
Server version: 5.7.18-log MySQL Community Server (GPL)

Copyright (c) 2000, 2017, Oracle and/or its affiliates. All rights reserved.

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

(4) Enter the command to set permissions

```
> GRANT ALL PRIVILEGES ON *.* TO USERNAME@IP IDENTIFIED BY PASSWORD;
```

Remarks: USERNAME is generally the default **root**; if the IP set to '**%**', all computers can connect; PASSWORD is the connection password

範例：


```
mysql>GRANT ALL PRIVILEGES ON *.* TO root@172.17.20.176 IDENTIFIED BY root;
```

Allow 172.17.20.176 to log in using account root and password root

```
mysql>GRANT ALL PRIVILEGES ON *.* TO root@'%' IDENTIFIED BY root;
```

Allow all computers to log in with account root and password root

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	37 / 45



```
系統管理員: cmd.exe - 捷徑
mysql> GRANT ALL PRIVILEGES ON *.* TO root@'%' IDENTIFIED BY 'root';
Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql>
```

(5) Update permission settings and leave MySQL

```
mysql>FLUSH PRIVILEGES;
```

```
mysql>quit;
```



```
系統管理員: cmd.exe - 捷徑
mysql> GRANT ALL PRIVILEGES ON *.* TO root@'%' IDENTIFIED BY 'root';
Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

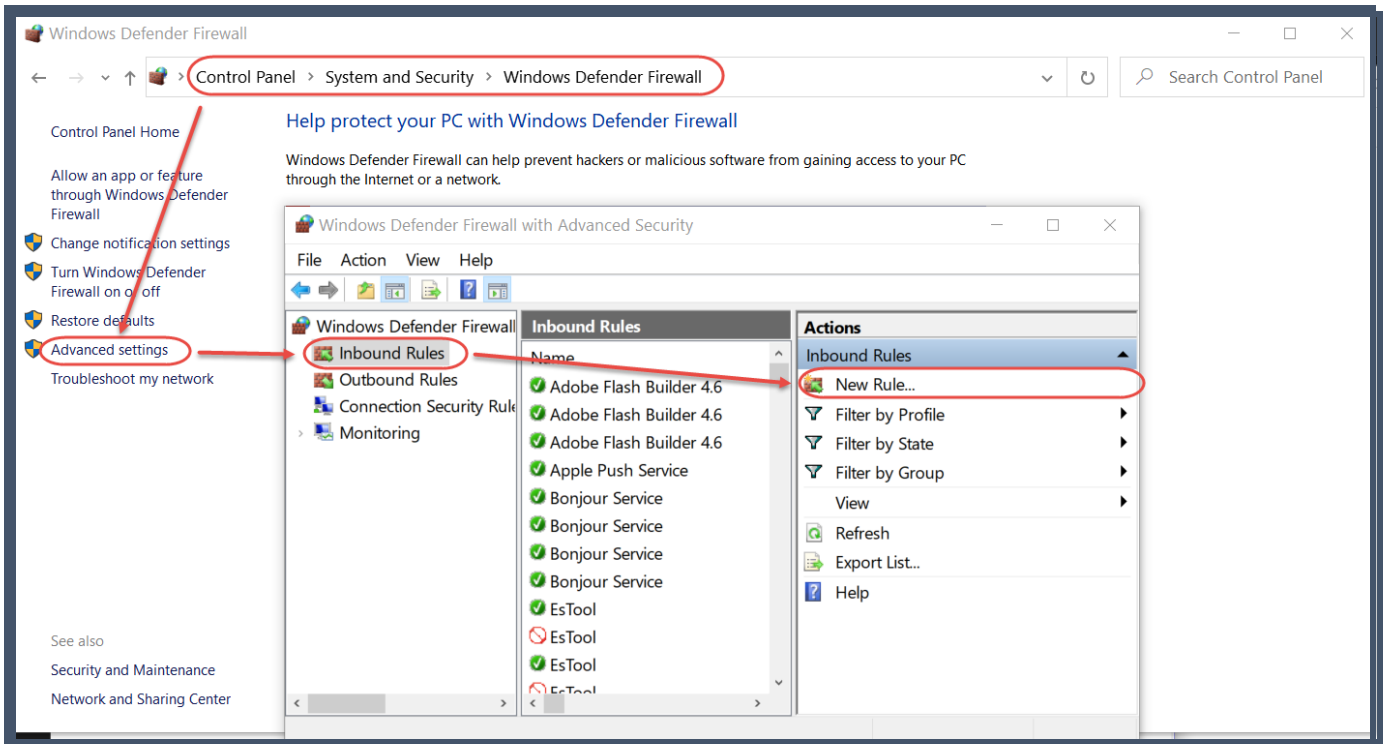
mysql> exit
Bye
C:\Program Files\MySQL\MySQL Server 5.7\bin>
```

Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	38 / 45	

Step 3 : Add " Inbound Rules " in the Windows Defender Firewall (Server)

Allow MySQL pass through the firewall Port 3306, so that the remote device can access the MySQL services

(1) Open " Control Panel " → Windows Defender Firewall→ Advanced Settings→ Inbound Rules→ New Rule



(2) Refer to following settings (Captures)

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	39 / 45

New Inbound Rule Wizard

Rule Type

Select the type of firewall rule to create.

Steps:

- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

What type of rule would you like to create?

Program
Rule that controls connections for a program.

Port
Rule that controls connections for a TCP or UDP port.

Predefined:
@FirewallAPI.dll,-80200
Rule that controls connections for a Windows experience.

Custom
Custom rule.

< Back **Next >** Cancel

New Inbound Rule Wizard

Protocol and Ports

Specify the protocols and ports to which this rule applies.

Steps:

- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

Does this rule apply to TCP or UDP?

TCP

UDP

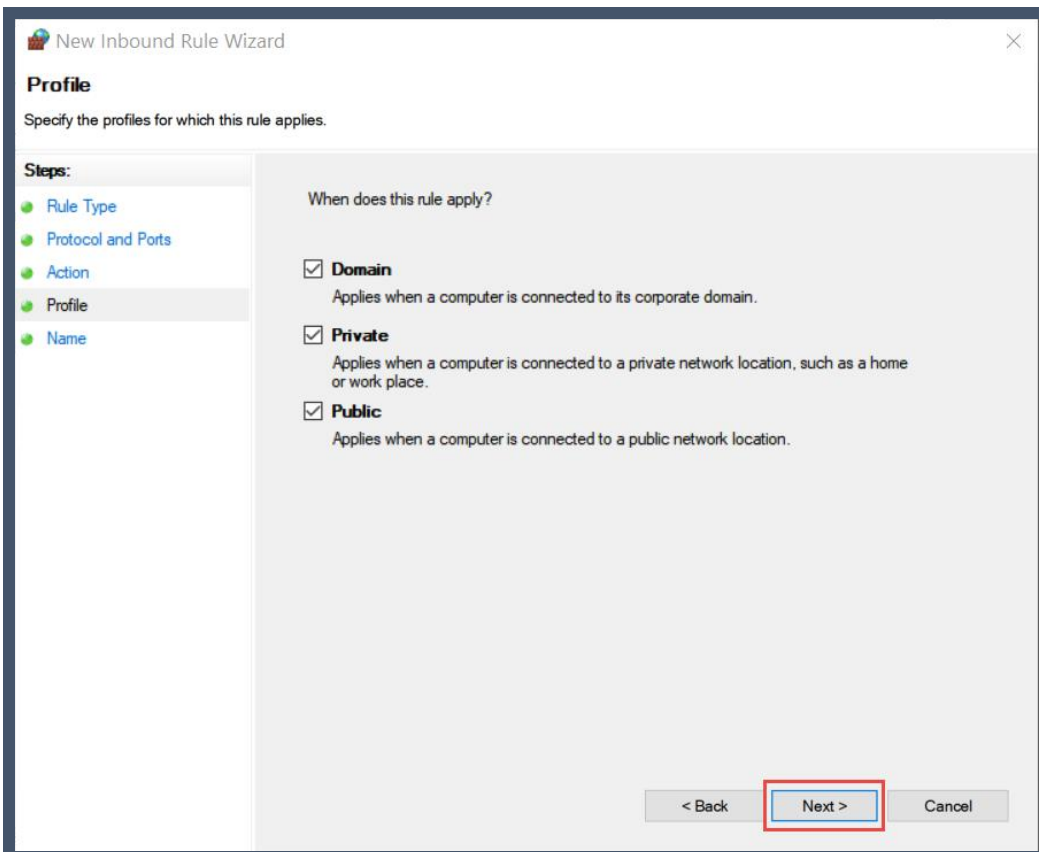
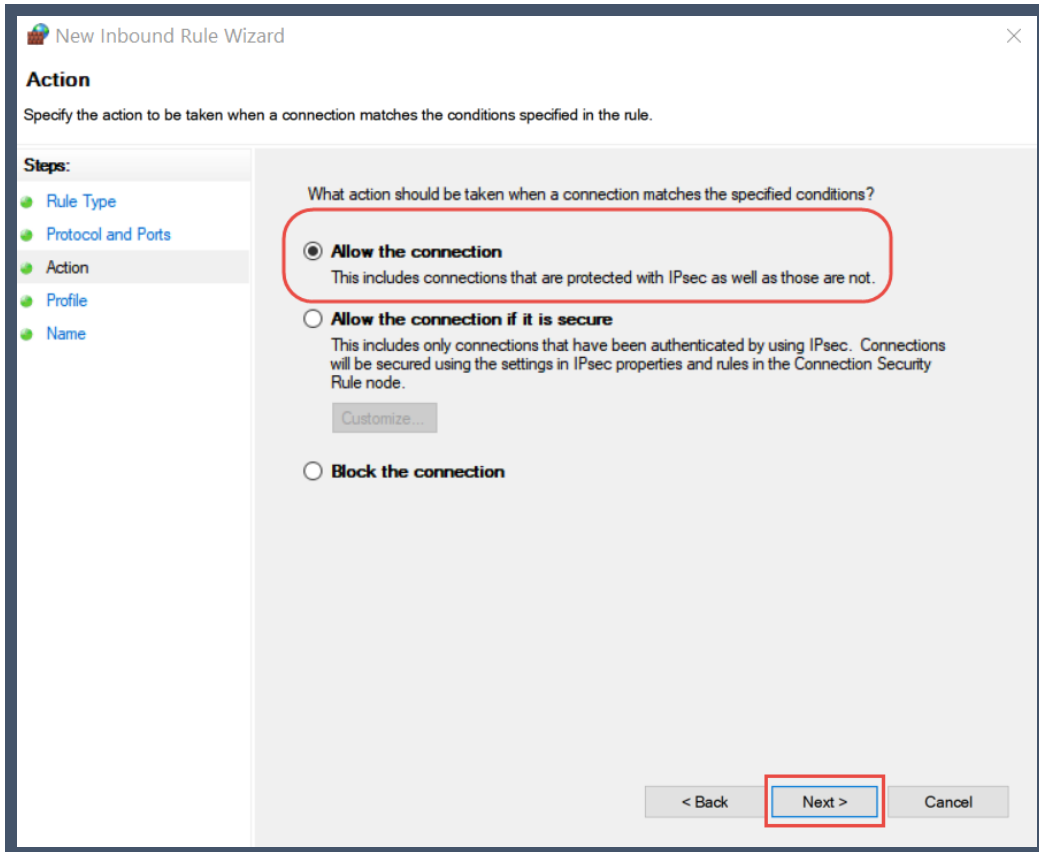
Does this rule apply to all local ports or specific local ports?

All local ports

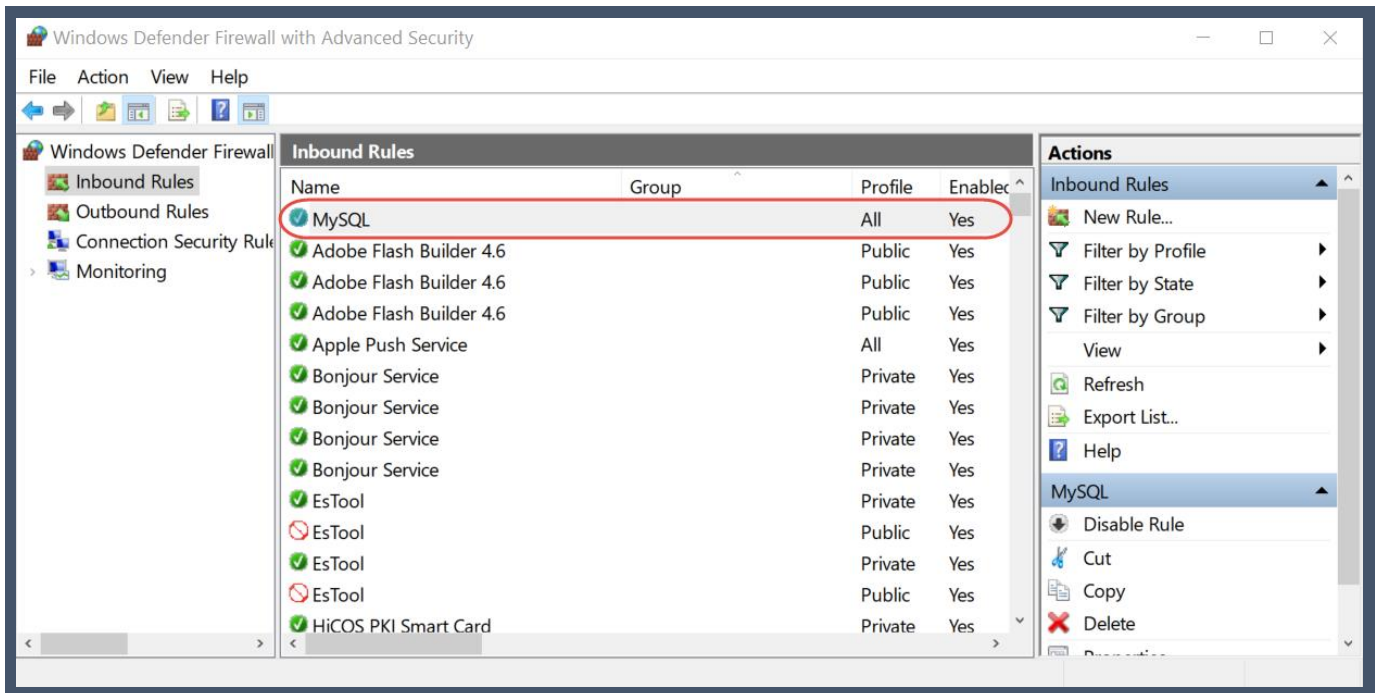
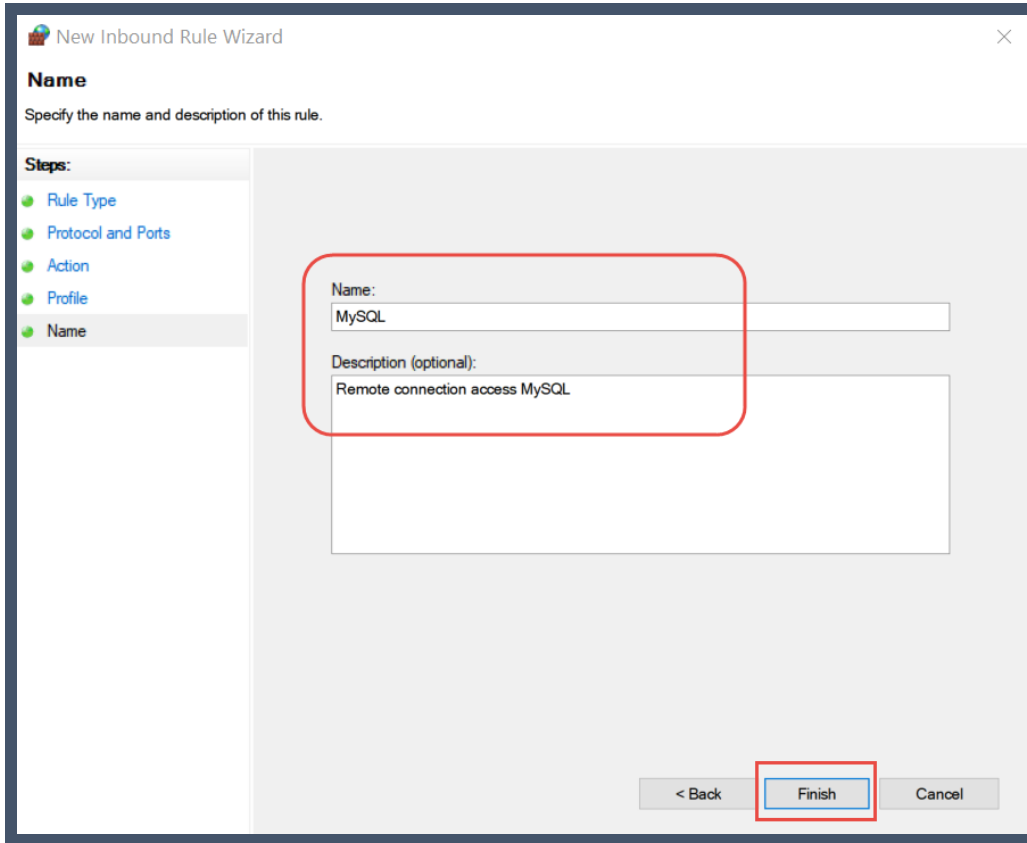
Specific local ports: 3306
Example: 80, 443, 5000-5010

< Back **Next >** Cancel

Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	40 / 45



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	41 / 45



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	42 / 45

Step 4 : Set up ODBC Connections (Client)

(1) Execute as Administrator: C:\Windows\SysWOW64\odbcad32.exe → Add



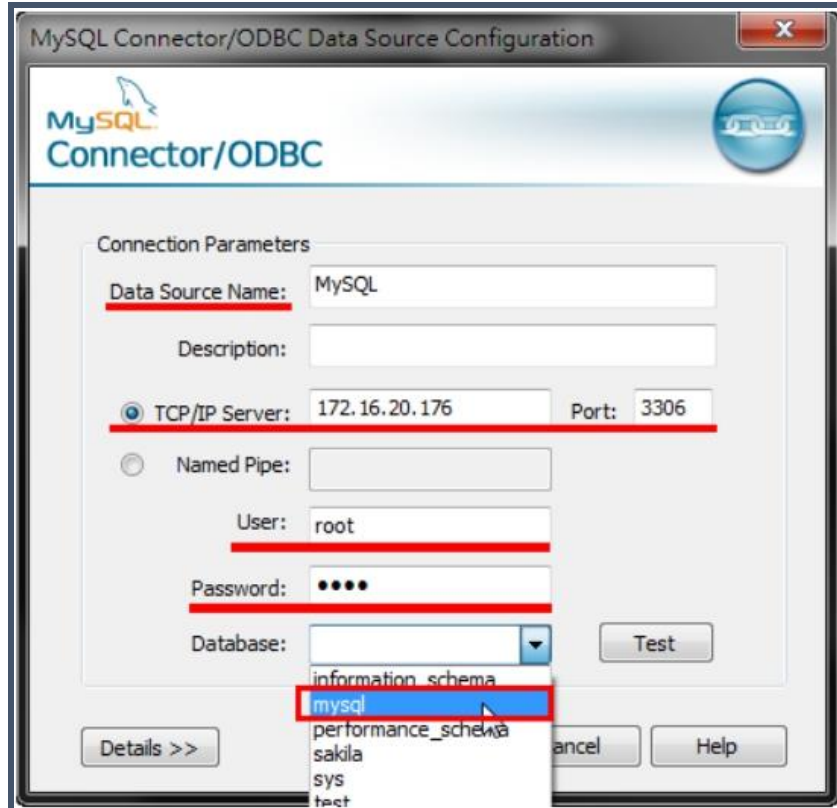
選擇資料來源



Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	43 / 45	

(2) Set the connection name (used by IWS) / server IP, Port / login account password/database. Press OK to close when finished

Note: The database (Schema) has to create in advance and can add using the MySQL Workbench management tool.



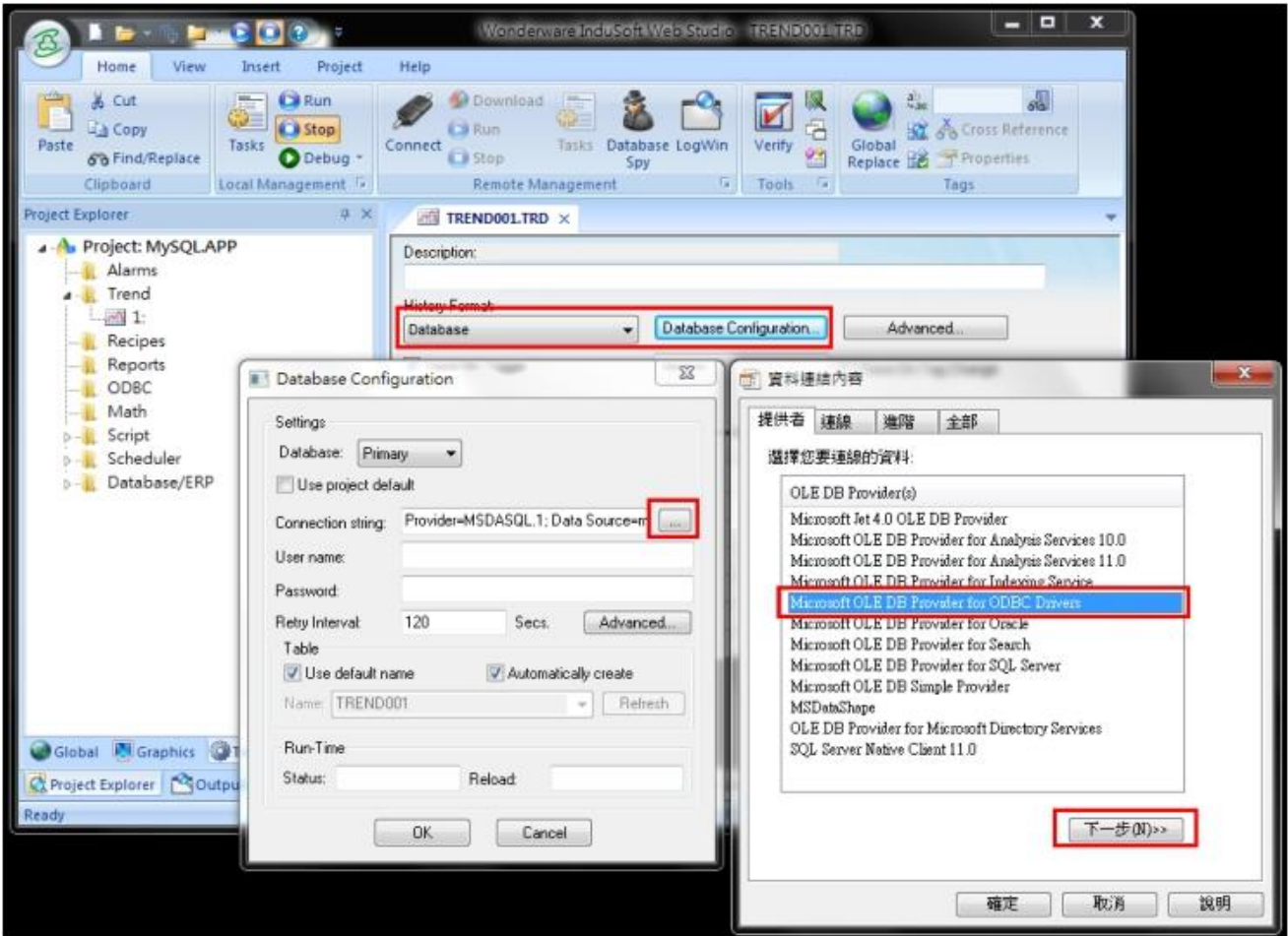
(3) Make sure the ODBC connection is established successfully



Classification	UA-Series English FAQ-Dev-005						
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	44 / 45

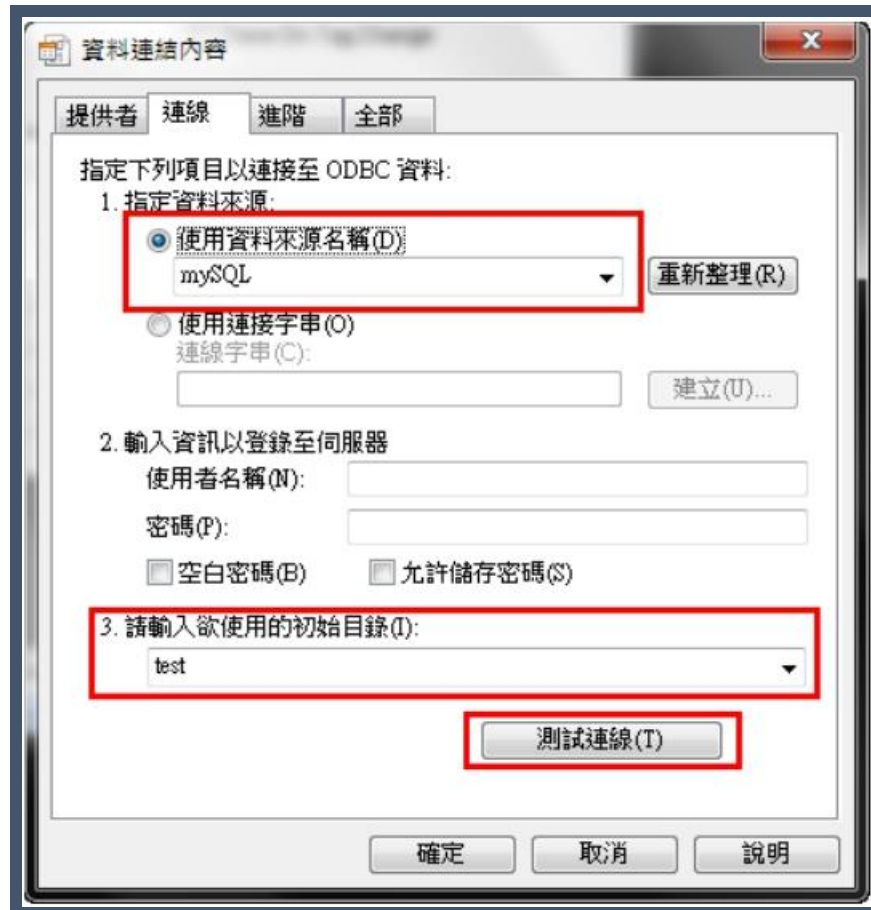
Step 5 : Set up InduSoft database connection (Client)

(1) Take the trend chart form as an example. Under “Provide” Tag, chooses Microsoft OLE DB Provider for ODBC Drivers



Classification	UA-Series English FAQ-Dev-005							
Author	Carol Hsu	Version	1.0.2	Date	2023,8	Page	45 / 45	

(2) Set the data source name (mySQL) → the database to be used (test) → test connection



(3) Successfully connected means to complete the setting.