BRK Series User Manual

V2.0, 2025/04

BRK-2800 Series

IIoT MQTT Communication Server

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Revision History

This chapter provides information on historical changes to this Manual.
The following table shows the historical modifications.

Revision	Date	Description
V2.0	03/2025	2.0th Version: Function update: 1. Add function code field to the login page 2. Add the Time Zone setting function to the Time Setting New Function: 1. MQTT data to MySQL 2. MQTT data to SQL Server 3. MQTT data to MongoDB

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1. BRK Introduction

1.1 Introduction

BRK Series is a Communication Server that specially provides Broker function of MQTT protocol for MQTT message distribution and concentrator in M2M and Industrial Internet of Things environments. The BRK Series is compatible with the MQTT version V.3.1, V.3.1.1 and V.5.0 protocol. It supports many functions such as QoS message quality mechanism, retains mechanism, identity authentication, communication encryption, last message (Last Will), and bridge. The method of Web UI settings can quickly set up BRK functions. This reduce the burden of setting up the broker by user oneself and the maintenance cost. Besides, BRK Series provides Bridge, Cluster, Load Balancer, and High Availability functions. By forming multiple BRK Series a group to a better Redundancy system can prevent field systems from stopping services due to hardware or network failures.

1.2 Features

- **Built-in database (Available Soon)**

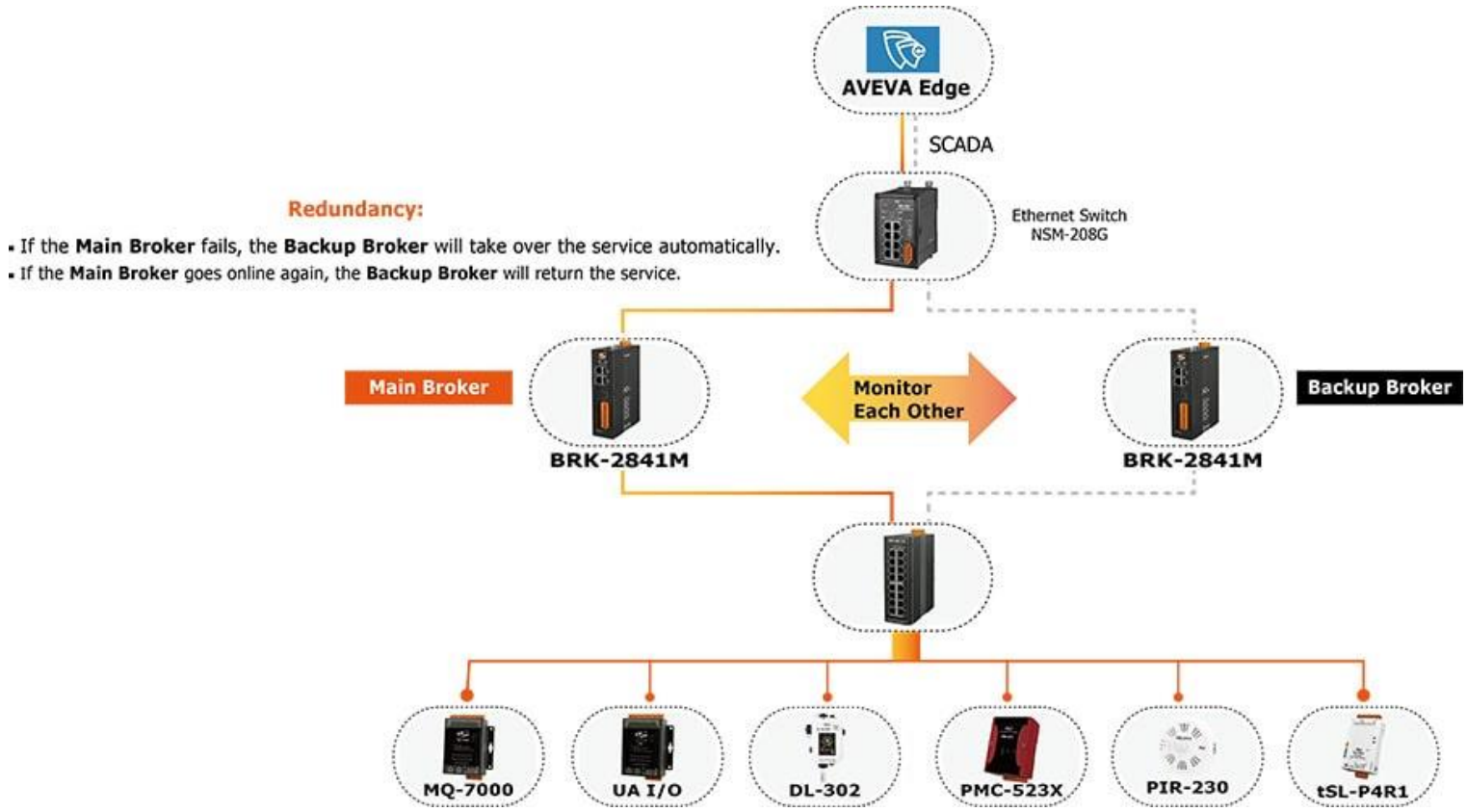
  ✧ **Support MongoDB**
  BRK 2841M can record the collected data in the built-in MongoDB without adding an extra database.

  ✧ **Data Redundancy**
  Two or more BRK-2841Ms consist of a redundancy group in which all databases are synchronized to achieve data redundancy.

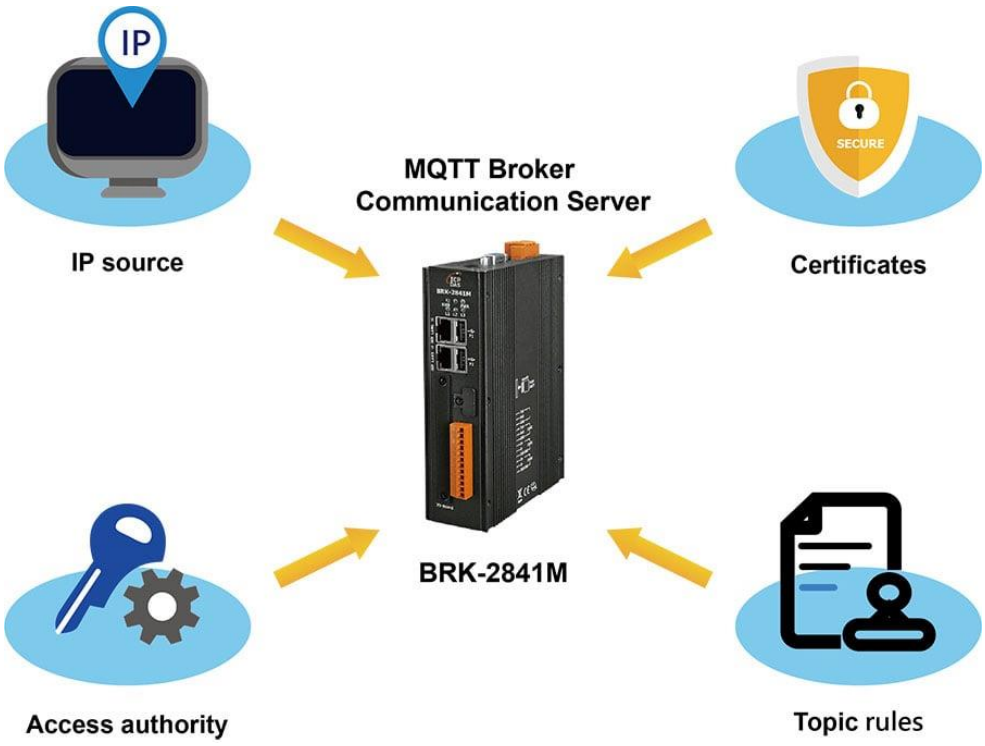
  ✧ **Database Failover**
  BRK-2841Ms in the same redundancy group will monitor each other to see if they are functioning properly, and in case of failure, the rest of the devices will take over to ensure that the database recording is not interrupted.

- **Communication Redundancy Architecture – rapid setup**

  ✧ **Redundancy System**



- **Information Security Protection – Multiple Mechanism**



  ✧ **HTTPS (Available Soon)**

  The built-in web server support HTTPS protocol which is authentication of accessed website to protects against man-in-the-middle attacks and ensure the privacy and integrity of exchanged

data while it is in transit.

✧ **Management of Broker permissions**
Allow/prohibit connection requests to the Broker from specific IP addresses, Client IDs, or Broker users, and perform the first stage of filtering from the connection to improve the stability and security of the Broker.

✧ **Management of Topic Publish/Subscribe**
Allow/prohibit publish/subscribe to Topics, to normalize the publish/subscribe privileges of Topics by Clients who have passed the first stage of filtering, and to prevent important Topics from being modified with or read by others.

● MQTT Broker – Bridge and Cluster

✧ **Support MQTT Bridge**
Under Bridge Mode allows multiple Brokers to communicate and transfer data. Following introduce the features of Bridge Mode:

■ Transfer data to specific Brokers according to predefined rules.

■ Subscribe to specific Topics on the Bridge node and transfer or forward them to local or remote Brokers after receiving the data.

✧ **Support MQTT Cluster (Available Soon)**
In Cluster Mode, two or more BRK-2841Ms work together to ensure the consistency and availability of MQTT services, which is very important for enterprises that cannot afford downtime.

1.3 Specifications

✧ Hardware Specifications

Model	BRK-2841M
Main Unit	
CPU	Quad-core ARM CPU, 1.6 GHz/Core
System Memory	DDR4 SDRAM 2 GB
Storage	eMMC 8 GB
Non-Volatile Memory	FRAM 64 KB, MRAM 128 KB
Ethernet	
Ports	RJ-45 x 2, 10/100/1000 Base-TX (Auto-negotiating, Auto MDI/MDI-X)
Power	
Input Range	+12～+48 VDC
Consumption	10 W
Environmental	
Operating Temperature	-25～+75° C
Storage Temperature	-40～+80° C
Humidity	10～90% RH,Non-condensing

Table 1-1 Hardware Specifications: BRK-2841M

✧ Software Specifications

Model		BRK-2841M
Function		
Built-in database	Support MongoDB	Data can be recorded directly into the built-in database, additional database setup is not required.
	Data Redundancy	Two or more BRK-2841Ms consist of a redundancy group in which all databases are synchronized to achieve data redundancy.
	Database Failover	BRK-2841Ms in the same redundancy group will monitor each other to see if they are functioning properly, and in case of failure, the rest of the devices will take over to ensure that the database recording is not interrupted.
	Writing Speed	20 times/second
Communication Redundancy Architecture – rapid setup	Redundancy System	Two or more BRK-2841M consist of a redundant group, all the devices in the group monitor each other, and when the host that mainly provides MQTT service fails, the redundant device will take over and continue to provide MQTT service to achieve Broker redundancy.
	HTTPS	The built-in web server supports HTTPS to ensure secure communication between the server and the browser.

Information Security Protection – Multiple Mechanism	Authority Management of Broker	Allow/prohibit connection requests to the Broker from specific IP addresses, Client IDs, or Broker users, and perform the first stage of filtering from the connection to improve the stability and security of the Broker.
	Management of Topic Publish/Subscribe	Allow/prohibit publish/subscribe to Topics, to normalize the publish/subscribe privileges of Topics by Clients who have passed the first stage of filtering, and to prevent important Topics from being modified with or read by others.
MQTT Broker – Bridge and Cluster	Max. Number of Clients	100000 connections
	Max. Number of Topics	100000 records
	Support MQTT Bridge	In Bridge mode, you can transfer data between multiple Brokers. • Transfer data to specific Brokers according to predefined rules. • Subscribe to specific Topics on the Bridge node and transfer or forward them to local or remote Brokers after receiving the data.
	Support MQTT Cluster	In Cluster Mode, two or more BRK-2841Ms work together to ensure the consistency and availability of MQTT services, which is very important for enterprises that cannot afford downtime.

Table 1-2 Software Specifications: BRK-2841M

1.4 Appearance

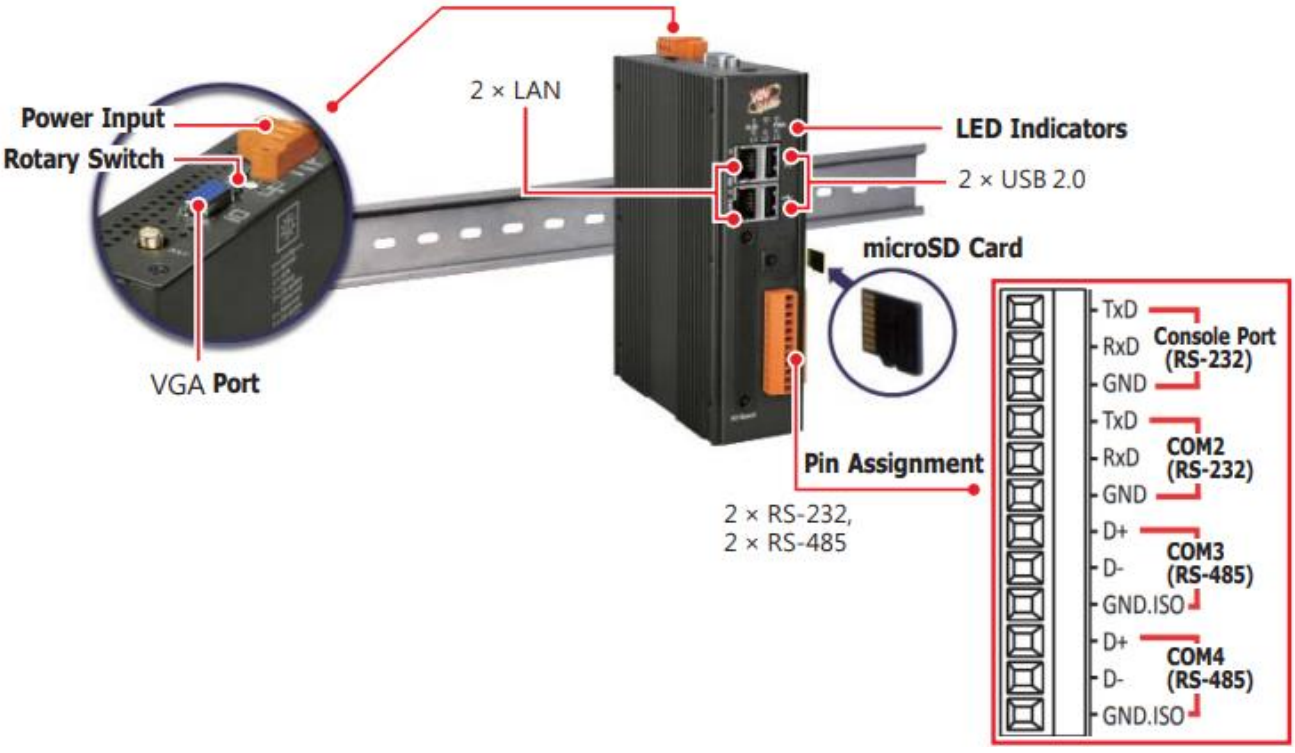


Figure 1-1 Appearance: BRK-2841M (1)

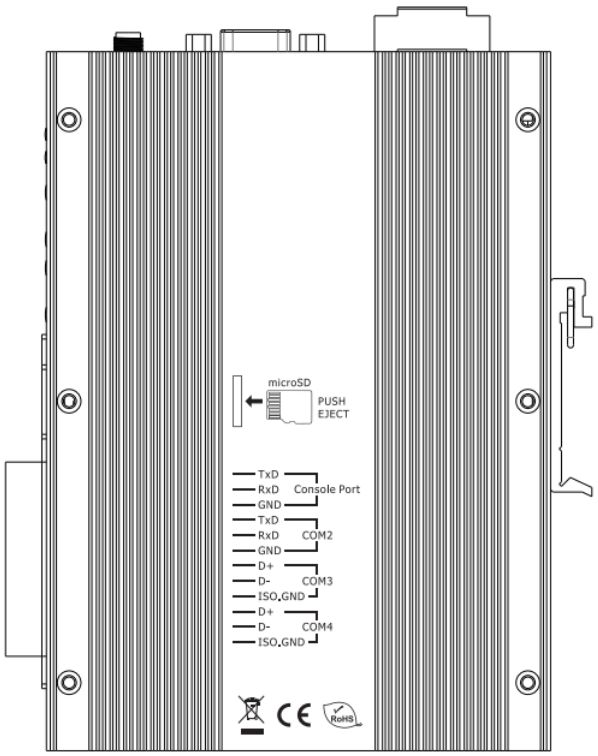


Figure 1-2 Appearance: BRK-2841M (2)

1.5 Dimensions

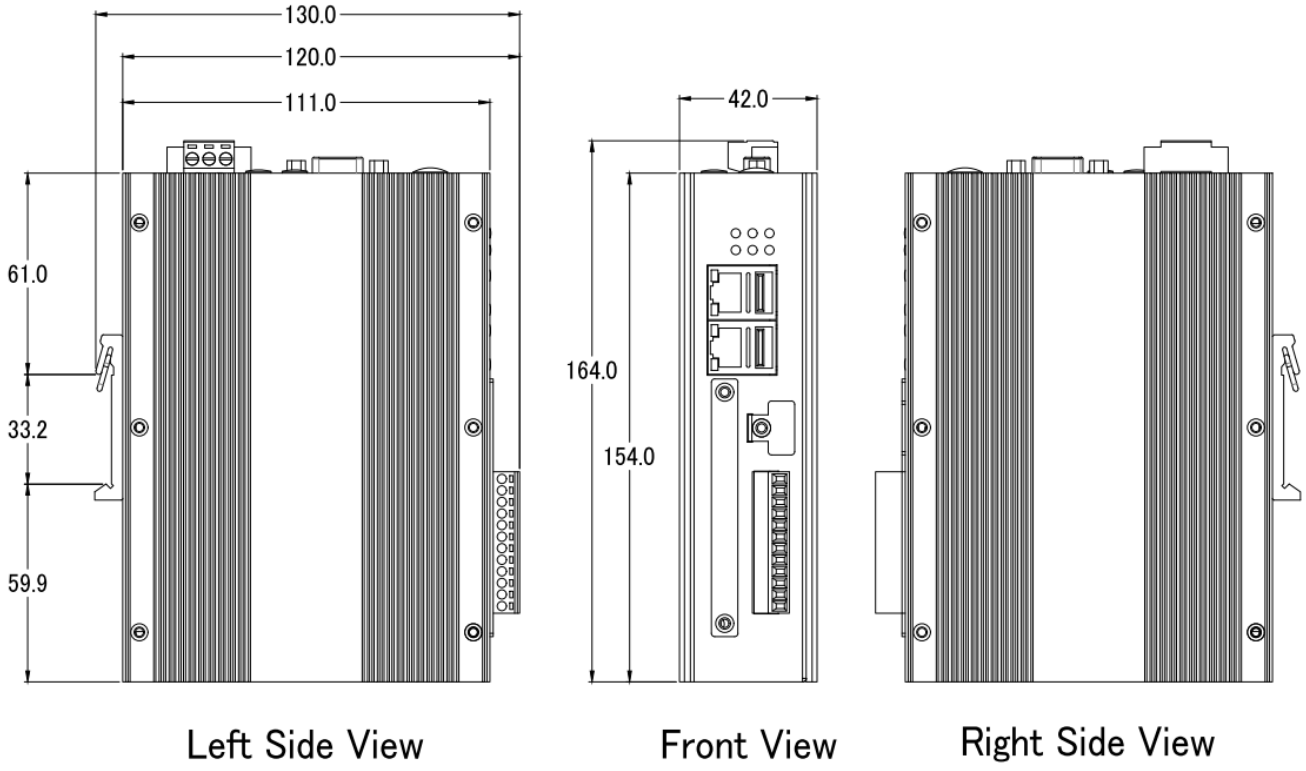


Figure 1-3 Dimensions: BRK-2841M

2. Quick Start: Hardware/Network Connection

This chapter describes the devices hardware connection, network connection and quick setting for the BRK Controller, and how to connect to the BRK controller web-based UI via a browser. Next chapter will set up web functions, and complete a demo project. (Please refer to Chapter 3).

2.1 Hardware Connection

This section describes the hardware wiring and connection for the BRK Series.

2.1.1 Preparations for Devices

In addition to the BRK controller (Ex: BRK-2841M) , please prepare the following:

1. **Computer: PC/NB** Connect to the local network and can set up the network
2. **Ethernet Hub or Switch**: e.g. NS-205
3. **Power Supply: +12 ~ +48**, e.g. MDR-60-24

2.1.2 Hardware Wiring

Use LAN2 of BRK-2800 to connect to the PC through a network hub/switch, or directly connect to the PC's network interface.

After power is connected, please [**wait for 1 minute**] for BRK boot procedure. When the "RUN" and "PWR" lights of the BRK start to flash green and red, it means the boot is completed, and the connection and setting can be performed.

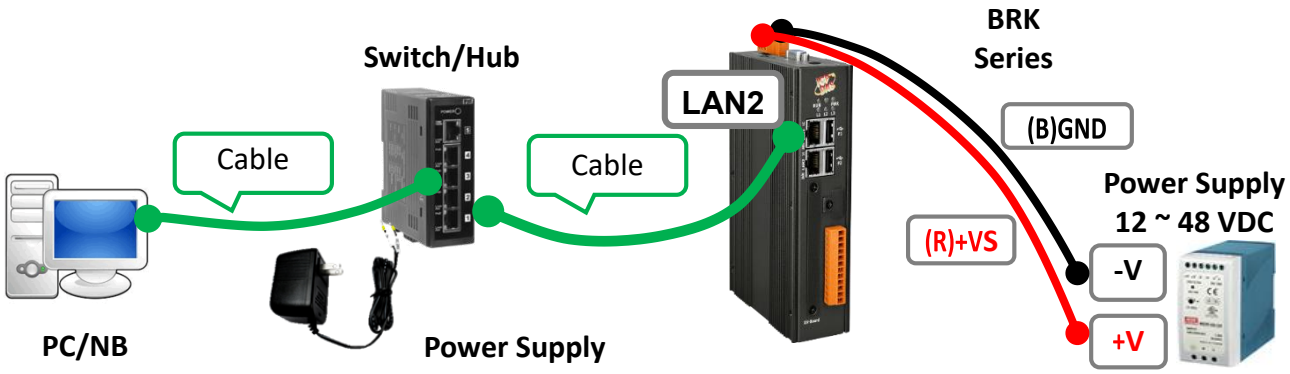


Figure 2-1 Hardware Wiring

2.2 Network Connection

There are three ways to log in to the **BRK Web UI** (User Interface) through BRK network connection. The following is a brief description, and then the steps are described in subsections:

- If the device has just arrived from the factory or is used for the first time (A), it is recommended to use the connection method in **Section 2.2.1** (same as the "Quick Start" included with the shipment).
- If the device has been set up to connect but does not know the IP (B), it is recommended to use the connection method in **Section 2.2.2** (use Utility to search for the devices).
- If the device has been set up and the connection IP (C) is known, you can directly enter the IP connection in the browser website to log in.

The methods to login the BRK Web UI:

A. Using Factory Default Setting:

This way is suitable for those who is setting a new BRK or the PC network IP is not in the same domain with BRK. This method changes the PC network IP to match the BRK factory default settings to connect and login the Web UI. (Refer to **Chapter 2.2.1**)

B. Using Software Utility:

Suitable for quick setting when multiple BRKs are connected in the same network but each IP address is unknown. BRK products provide a free software utility to automatically search and connect to BRKs on the internet and can Log into BRK Web UI.(Refer to **Chapter 2.2.2)**

C. Using IP Address:

Suitable for the situation while BRK has a fixed IP and in the same domain network with the PC. If the BRK has a fixed IP and in the same domain with the PC, users can directly enter the IP in the address bar of a web browser and log in to the Web UI of the BRK.

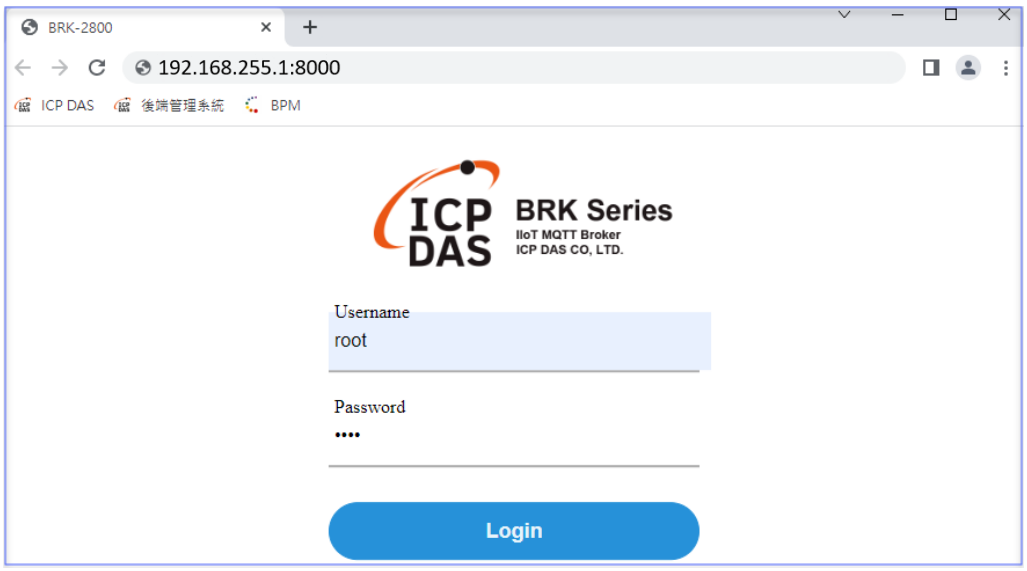


Figure 2-2 Using IP Address

2.2.1. Connection by Factory Default Settings (For New BRK)

The factory default settings of the BRK series are as the following table:

Factory Default Settings of BRK			
Network	**IP**	**192.168.255.1:8000**	Assign BRK-2800 a new IP setting according to your case.
	Netmask	**255.255.0.0**	
	Gateway	**192.168.1.1**	
Web UI Account	**Username**	**root**	**After the first login, change the default username/password to use other functions.**
	Password	**root**	

Table 2-1 Factory Default Settings of BRK

1. Change the **PC's IP** setting as follows. **(Write down the PC original network settings before modifying.)**

IP	**192.168.255.10:8000**
Subnet mask	**255.255.0.0**
Gateway address	**192.168.1.1**

Table 2-2 PC IP Setting

2. Make sure the PC and BRK is connecting through Ethernet. Then open a PC side browser (Ex: Chrome, IE…).

   Type **http://192.168.255.1:8000** in the URL address. Use Web UI **default username / password** "**root**" / "**root**" to login the system.

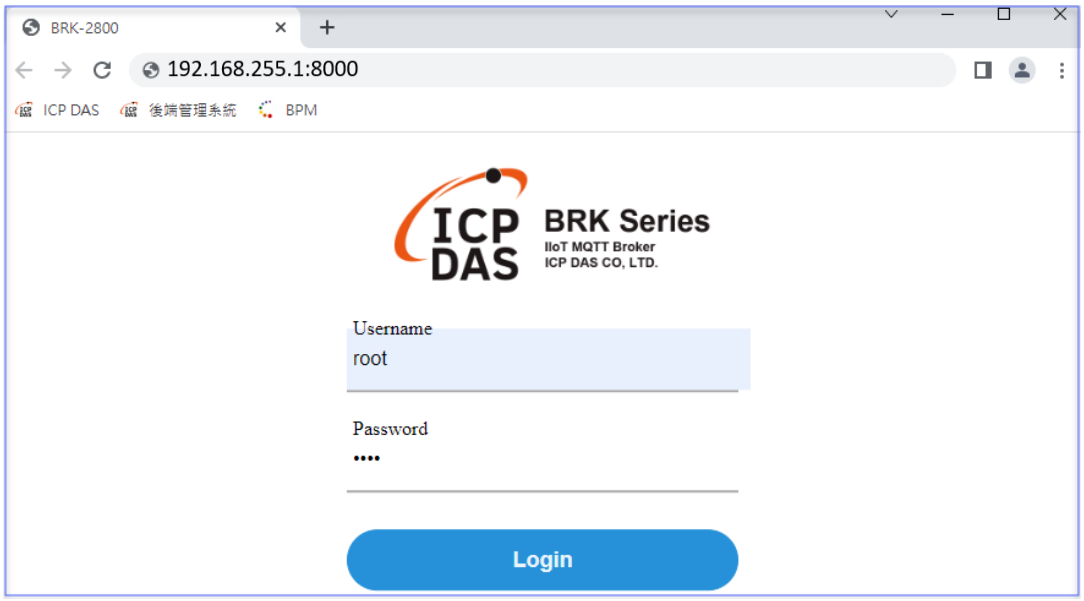


Figure 2-3 BRK default IP Login Web Page

3. Click【System Setting】➔【Account Setting】, change the Username/password first, or user cannot use any other function (New design for data security)

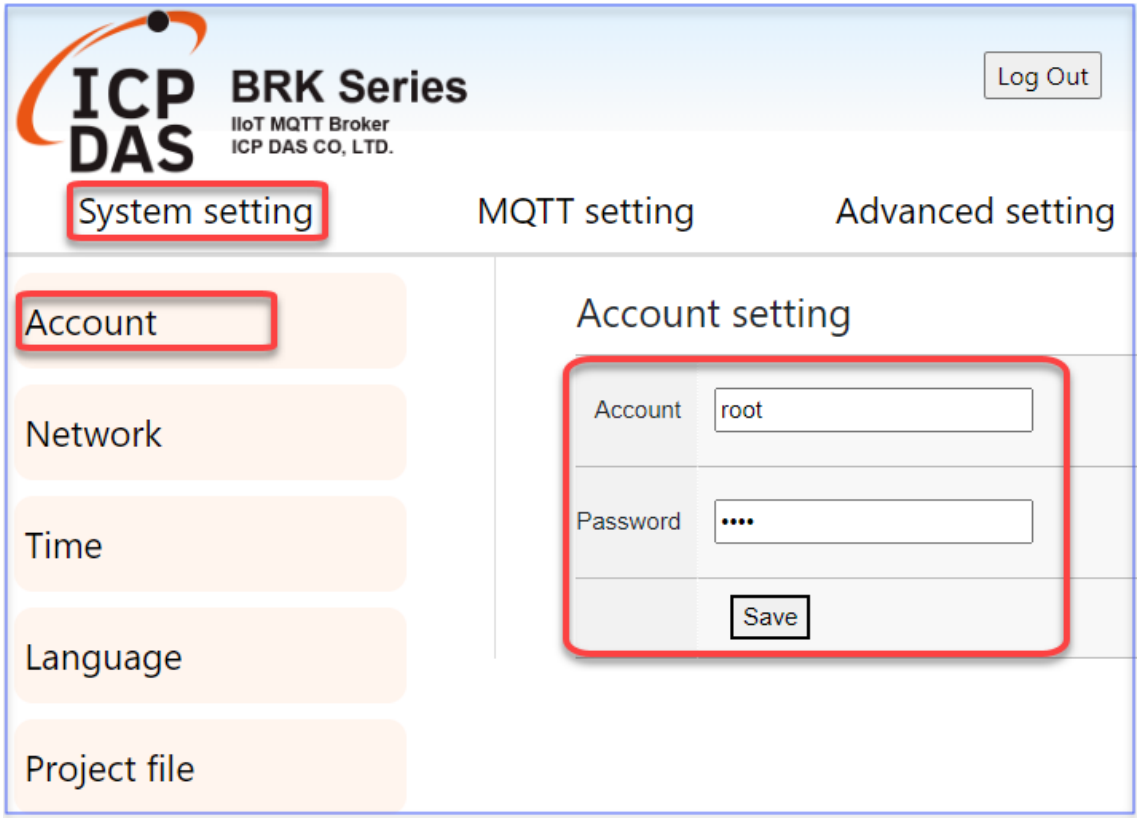


Figure 2-4 Account Setting Page

Password Setting rules:

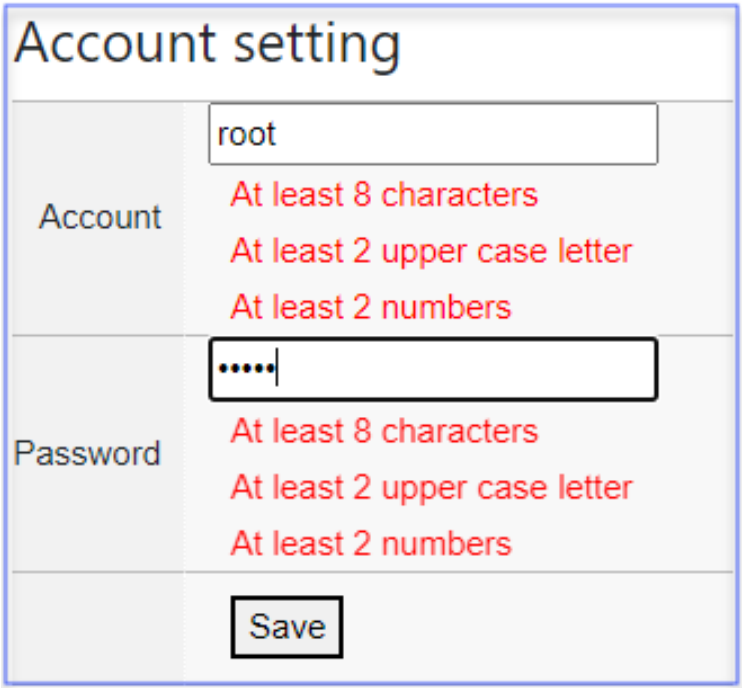


Figure 2-5 Password Setting Rules

4. Click【System Setting】➔【Network Setting】to change the IP setting by user network.

Note: While the network cable has been correctly connected to LAN1 and LAN2 will show up setting interface.

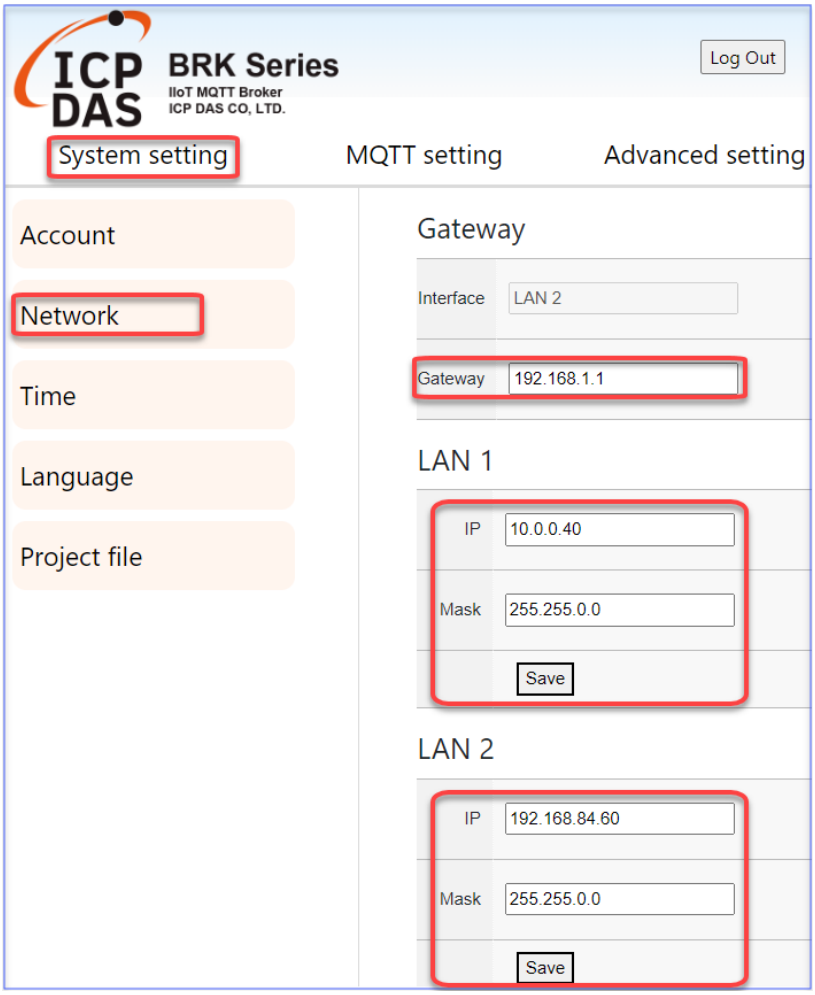


Figure 2-6 Network Setting Page

5. After saving successfully, enter the newly set IP address to log in to the BRK Web UI.

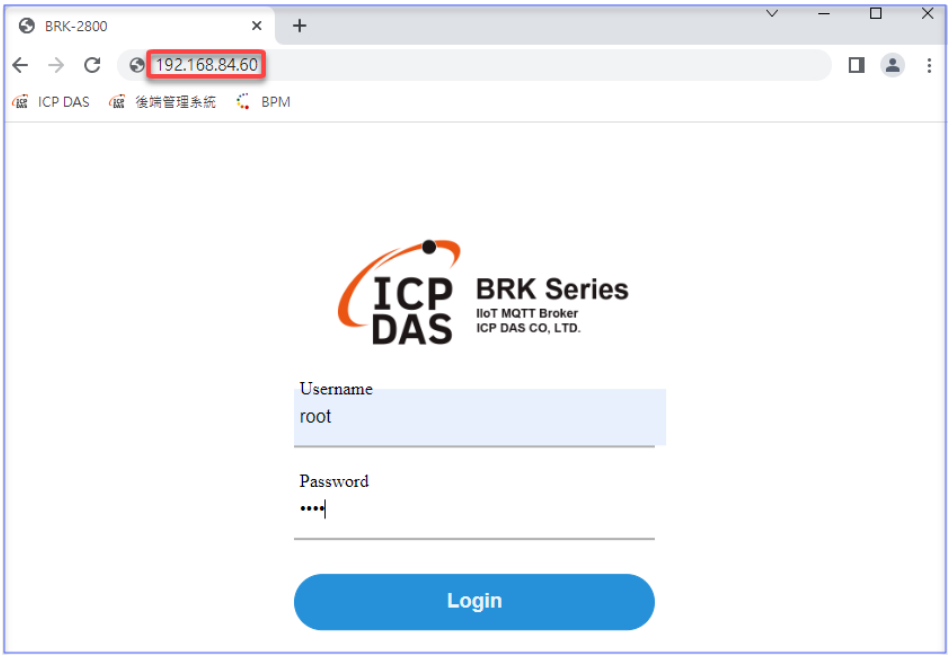


Figure 2-7 Enter a new IP address to log in to the Web UI.

2.2.2. Connection by Utility Searching

Setting new BRK or the new user please use the method in Chapter 2.2.1. (Method A)

If the BRK has a fixed IP and is in the same domain as the PC, users can directly enter the IP in the address bar of a web browser and log in to the Web UI of the BRK. (Method C)

This section introduces the 2nd method(B) where users use the BRK Utility to search the Network IP. This method is suitable for connecting multiple BRK series controllers to the Internet, but the IP addresses of BRK are unknown or need to modify the BRK quickly.

The Utility is a free tool software to quickly search each UA/BRK/UA_IO series in the network and connect to its Web UI for setting UA/BRK/UA_IO series products and projects.

In the PC, download and install the **Utility (EZ-UAQ Utility)** suitable for your PC, and then run it to connect the device. Please download the utility program from the website:
https://www.icpdas.com/en/download/show.php?num=8560&model=BRK-

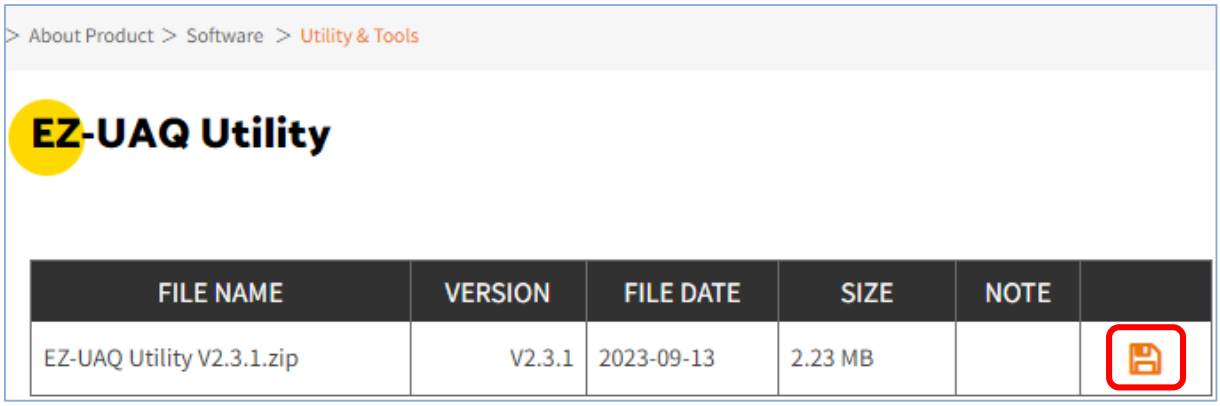


Figure 2-8 EZ-UAQ Utility Software Compression File

1. **Install and execute the Utility**
   Download and unzip the Utility, double-click the executable file (**EZ-UAQ Utility.msi**) to install and execute the Utility software.
   (If there is an old version of Utility on the PC, please uninstall it first.)

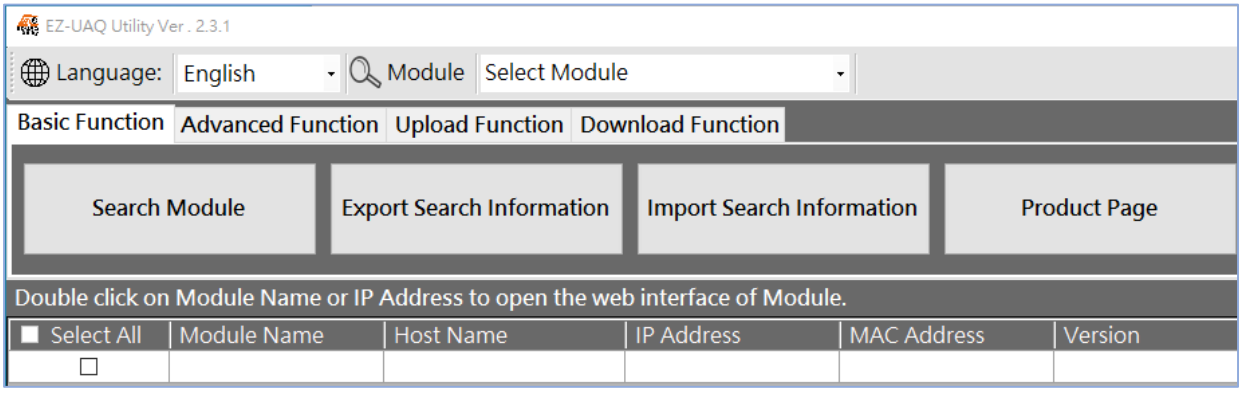


Figure 2-9 EZ-UAQ Utility Software (Basic Function Page)

2. Search the UA/BRK/UA-IO series modules

Click the "**Search Module**" button, the utility will search and list all UA/BRK/UA-IO modules in the network.

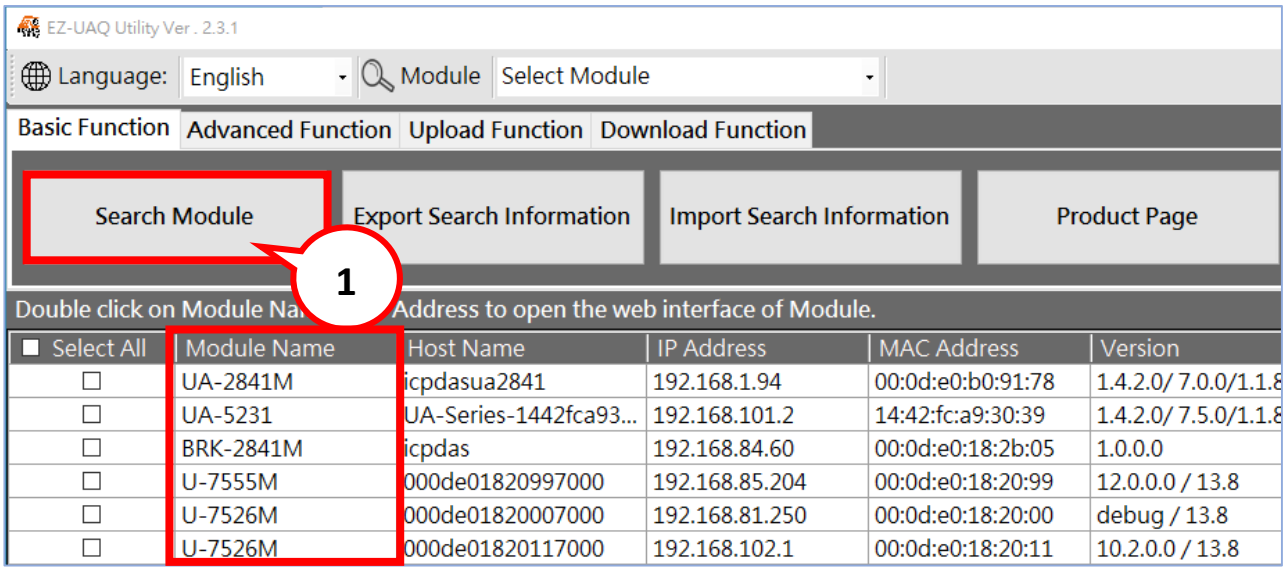


Figure 2-10 Search Module

3. Connect to the BRK Series

Double click the module list (from the Module Name to the IP address) you want to connect to, and it will directly link to the UA/BRK/UA-IO webpage via the default Web browser (Chrome, Edge, IE…).

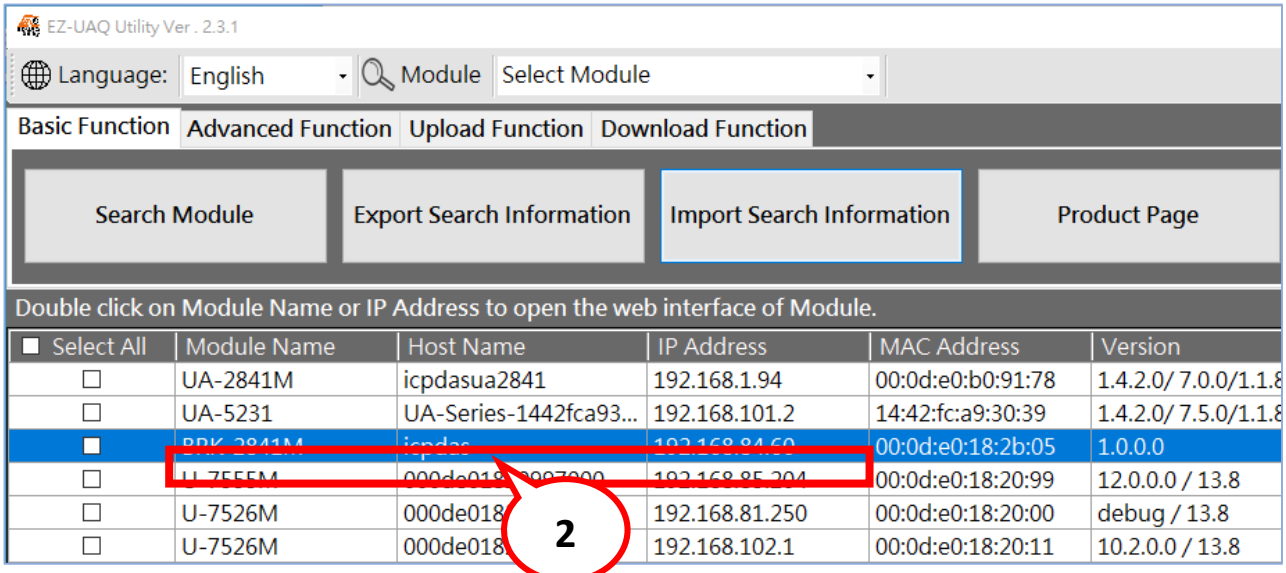


Figure 2-11 Connect to the BRK Series

4. Connection to the BRK Web UI

The default web browser will be run and direct go to the BRK login web site.
Please enter the username and password to login the BRK Web UI.
The default username: root.
The default password: root.
After login in, change the default Username/password first, or user cannot use any other function (New design for data security).

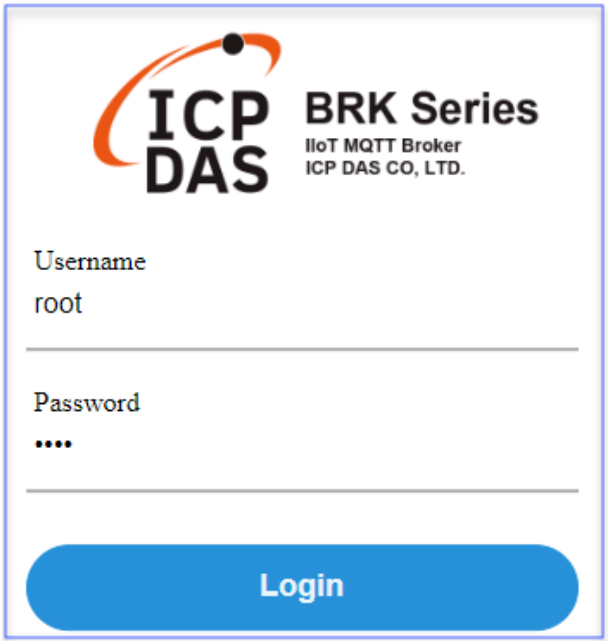


Figure 2-12 Connection to the BRK Web UI

5. Login the Web BRK of the BRK Series

When login into the web interface, the BRK default home page (the main configuration screen) will show as below, and will automatically read setting of that BRK to the webpage.

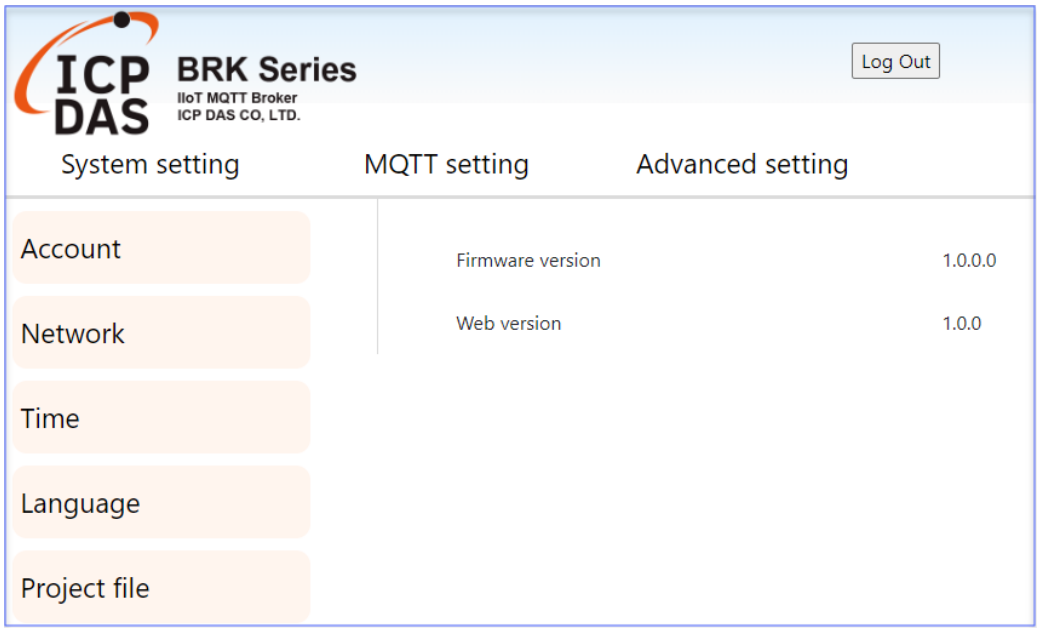


Figure 2-13 Login the Web BRK of the BRK Series

3. Main Function Settings

This chapter describes the main function and setting method of the BRK .

3.1 MQTT Introduction

MQTT (Message Queuing Telemetry Transport), developed by IBM and Arcom (now Eurotech) in 1999, enables lightweight, efficient real-time messaging in low-bandwidth or unstable networks like satellite communications.
Lightweight and concise: Low packet overhead, making it ideal for resource-constrained devices and low-bandwidth networks.
Real-time transmission: Adopts Pub/Sub mechanism with low latency and real-time communication capability.
QoS Levels: Supports three message transmission qualities (QoS 0, 1, and 2), and you can select the reliability level according to your needs.
Persistent Connections: Optionally keep messages in the Broker to ensure that you can still receive messages when the disconnected device is reconnected.

BRK-2800 is Sever of MQTT, can connect with large amount of modules with MQTT protocol: for example, the ICP DAS DL-300 series of data Logger sensors which can measure CO, CO2, Temperature, Humidity and Dew Point information. The communication mechanism that supports MQTT publishes the collected on-site environment parameters to the BRK-2800, and can simply monitor the on-site environment from a long distance by subscribing to the BRK-2800 using a mobile device or SCADA software that supports MQTT Client. The Ethernet I/O modules of the MQ-7200M series can automatically publish the collected digital I/O values to the BRK-2800 through MQTT. The MQTT Client only needs to subscribe and publish to the BRK-2800 to monitor or change remotely DO status of the Ethernet I/O modules.

MQTT Architecture of the BRK:

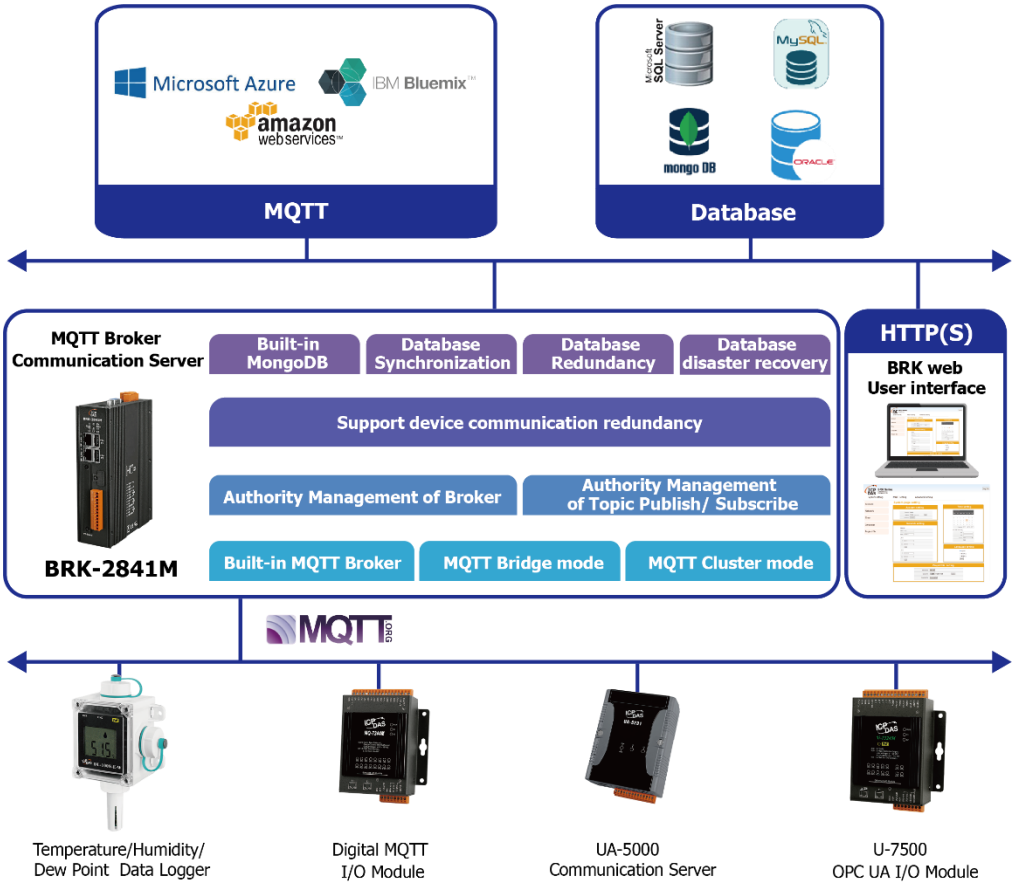


Figure 3-1 MQTT Architecture of the BRK

3.1.1 Forward the MQTT messages for BRK-2800

This chapter use the DL-302 (Client) as an example, to perform “Forward the MQTT message by BRK-2800 (Broker)”.

DL-302 need to set up the IP and Port of Broker Just communication, please refer to the DL-302 user manual **chapter 4.5 MQTT** (https://www.icpdas.com/web/product/download/iiot/sensor/dl-300/document/manual/DL-300_User_Manual_v1.2.0_en.pdf)

After setting is completed, DL-302 will automatic publish message for the BRK-2800; any MQTT Client device can subscribe to BRK-2800 to receive messages published by DL-302. Here we take the MQTT_fx_Client as an example: enter the IP address and Communication Port of BRK-2800, and connect to the BRK-2800 after the settings are correct.

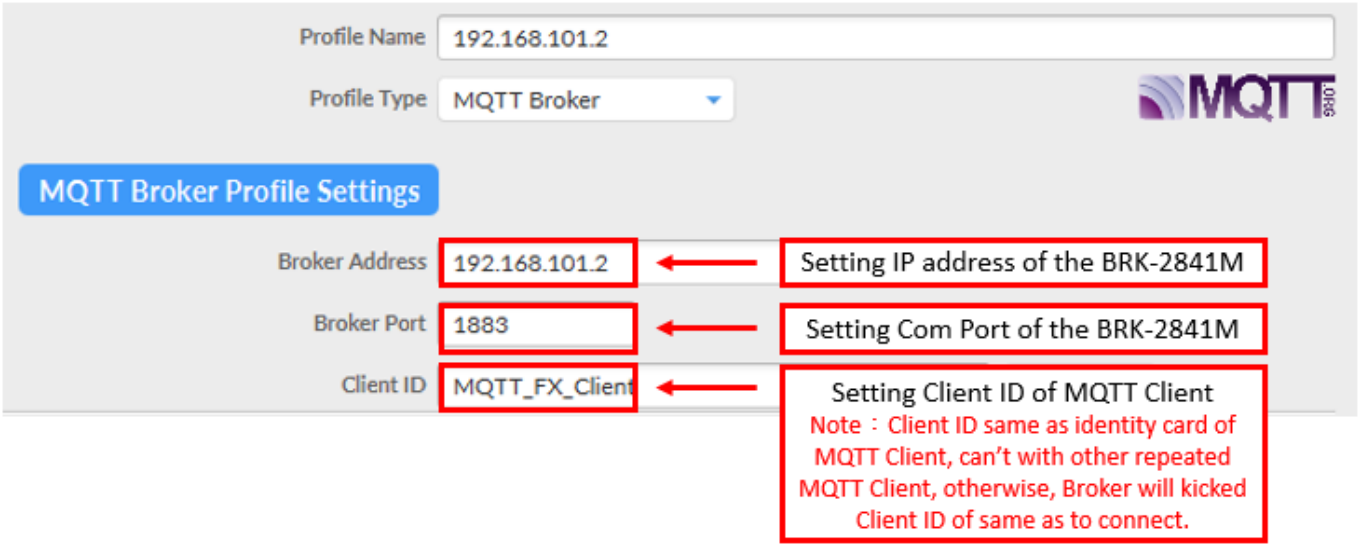


Figure 3-2 Forward the MQTT messages for BRK-2800 (1)

After successfully connect, now BRK-2800 can operate publish and subscribe.

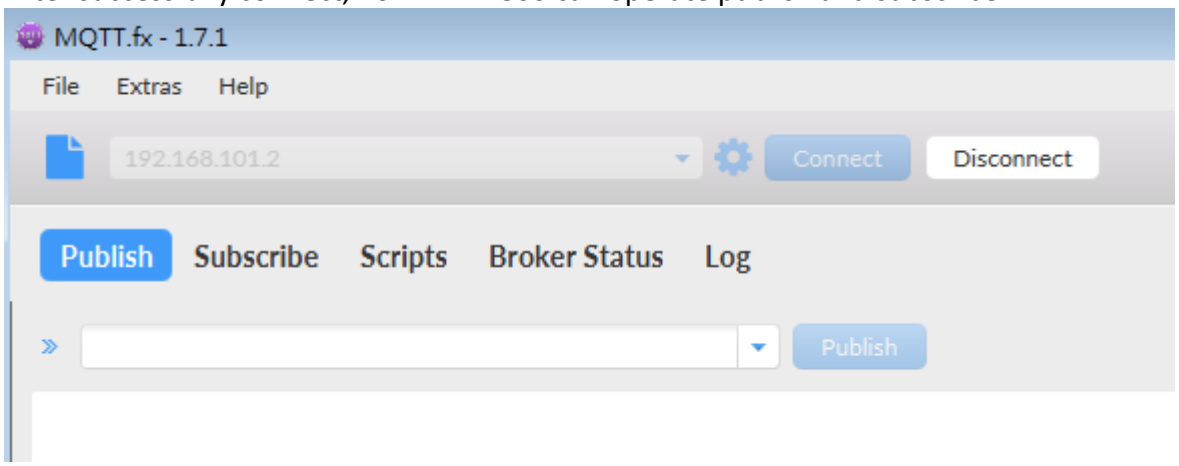


Figure 3-3 Forward the MQTT messages for BRK-2800 (2)

In order to make sure that the DL-302 has correctly published the environmental information to the BRK-2800, subscribe to the Wildcards character [#] of the topic to see the information published by the DL-302. Please refer to the following capture for the steps.

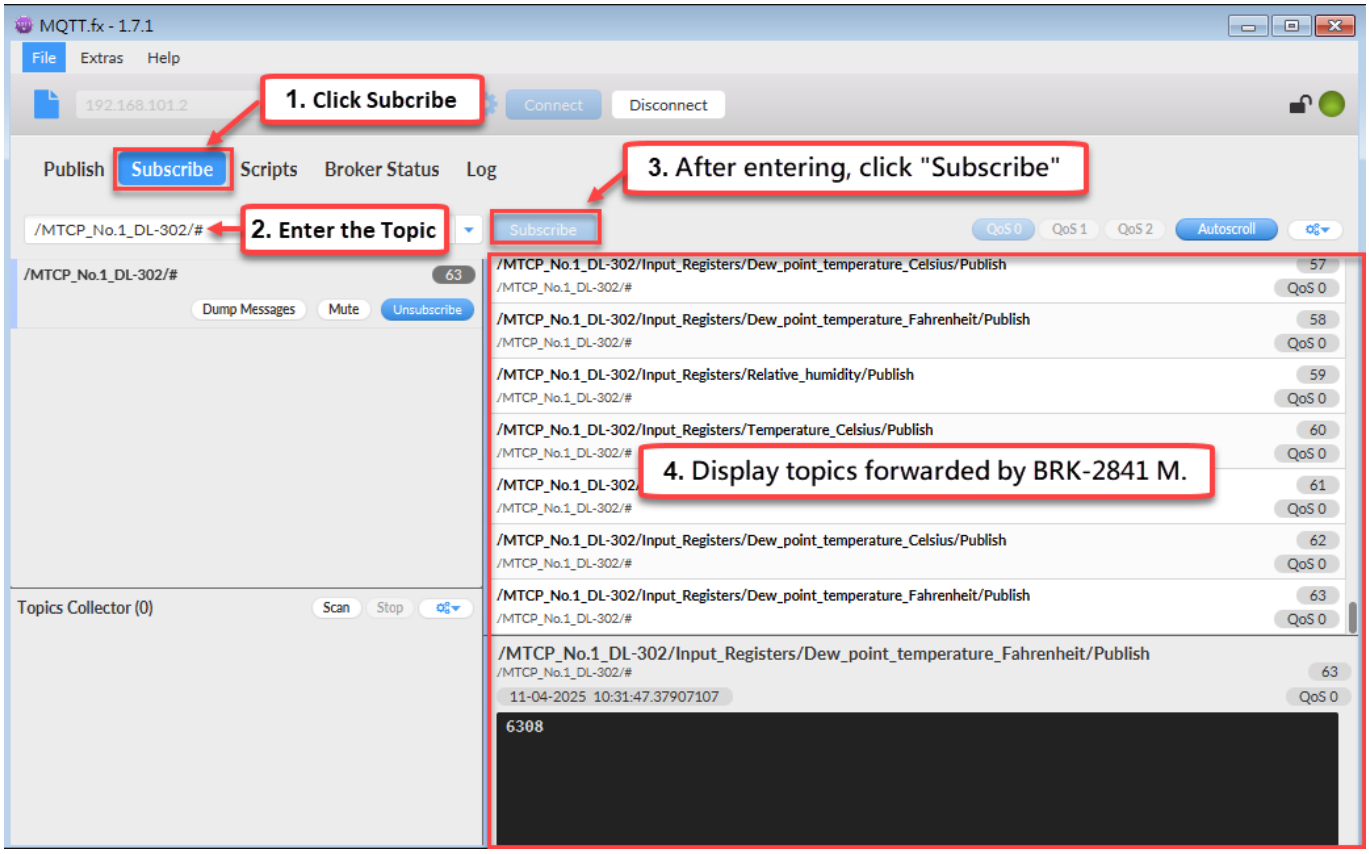


Figure 3-4 Forward the MQTT messages for BRK-2800 (3)

4. Main Menu: Parameter Descriptions

4.1 Main Menu - System Setting

System Setting is the first item of the Main Menu. This item is about the settings related to the hardware and operating system.

4.1.1 Account Setting

Function: Display and set up the login username and password of the BRK Web UI.

Menu Path:【System Setting】➔【Account Setting】

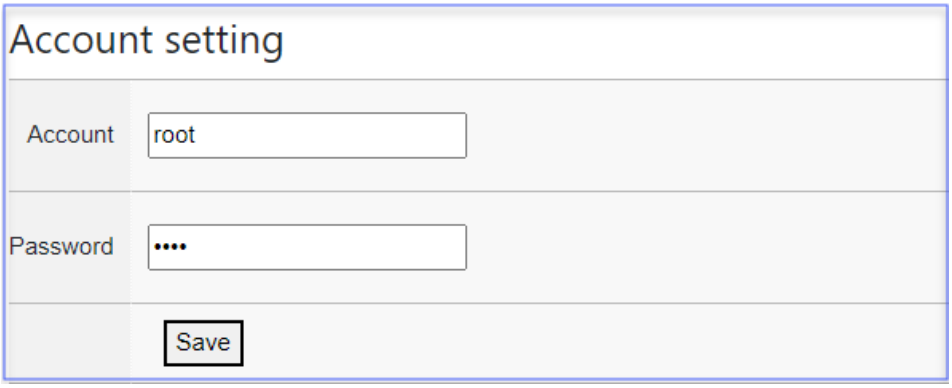


Figure 4-1 Account Setting Page

System Setting > Account Setting	
Account	The username for login the BRK Web UI. Factory default: root. Cannot be null. **After the first login with the factory default settings, change the default username/password first, or user may not be able to use any other function.** **Changing the account must meet the following conditions:** **1. At least 8 characters** **2. At least 2 upper case letter** **3. At least 2 numbers**
Password	The login password for the BRK Web UI. Factory default: root. Cannot be null. **After the first login with the factory default settings, change the default username/password first, or user may not be able to use any other function.** **Changing the password must meet the following conditions::** **1. At least 8 characters** **2. At least 2 upper case letter** **3. At least 2 numbers**
Save	Click to save the settings of this page.

Table 4-1 Descriptions: System Setting > Account Setting

4.1.2 Network Setting

Function: Display and set up the network settings of the BRK.

Menu Path： 【System Setting】➔【Network Setting】

Note: While the network cable has been correctly connected to LAN1 and LAN2 will show up setting interface.

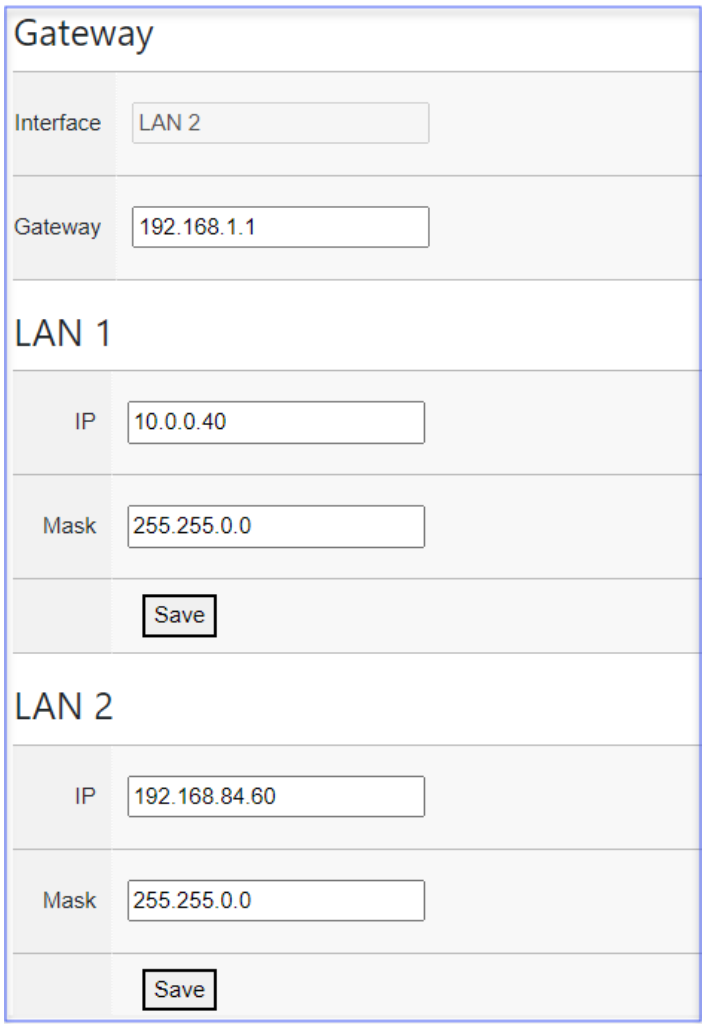


Figure 4-2 Network Setting Page

System Setting > Network Setting - Network Setting (LAN)	
IP	The LAN IP address of this BRK. Factory Default: 192.168.255.1:8000
Mask	The LAN mask address of this BRK. Factory Default: 255.255.0.0
Gateway	The LAN gateway address of this BRK. Factory default: 192.168.1.1
Save	Click to save the settings of LAN item.

Table 4-2 Descriptions: System Setting > Network Setting

4.1.3 Time Setting

Function: Display and set up the date and time of the BRK.
Menu Path:【System Setting】➔【Time Setting】

- **Display Date and Time**

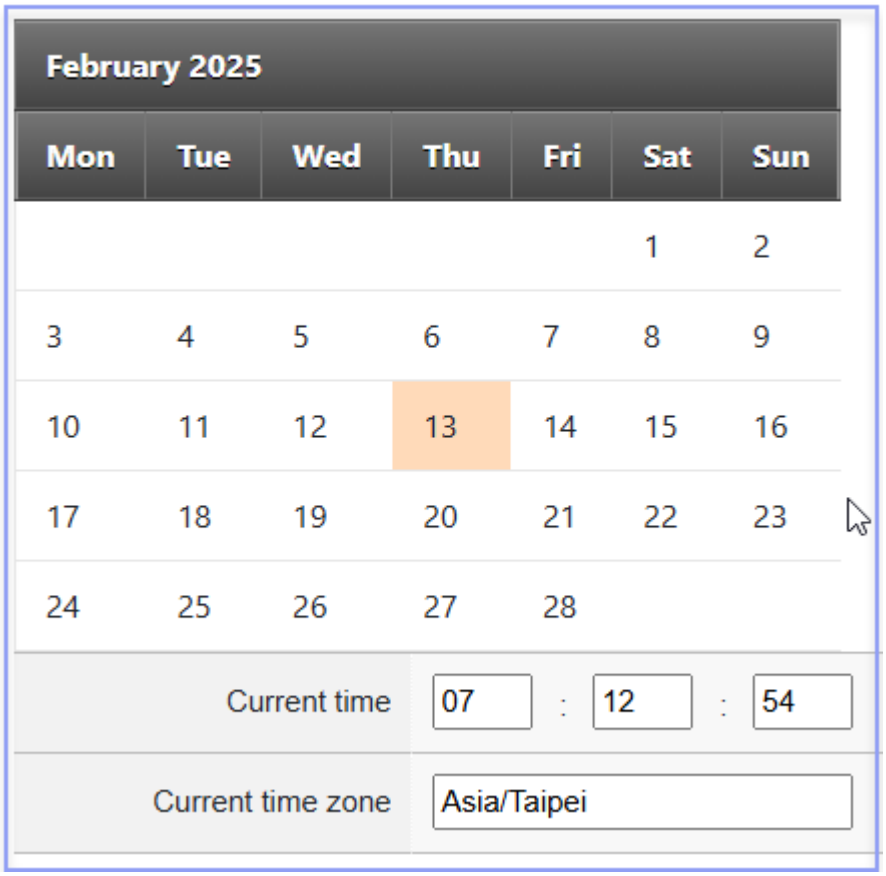


Figure 4-3 Time Setting Page

System Setting > Time Setting - Date and Time Display	
Date	Display the date of the BRK, including years, months and days.
Time	Display the current time of the BRK, including hours, minutes and seconds.
Current time zone	Display the current location of BRK, including continents and cities.

Table 4-3 Descriptions: System Setting > Time Setting > Date and Time Display

- **Set the date manually**

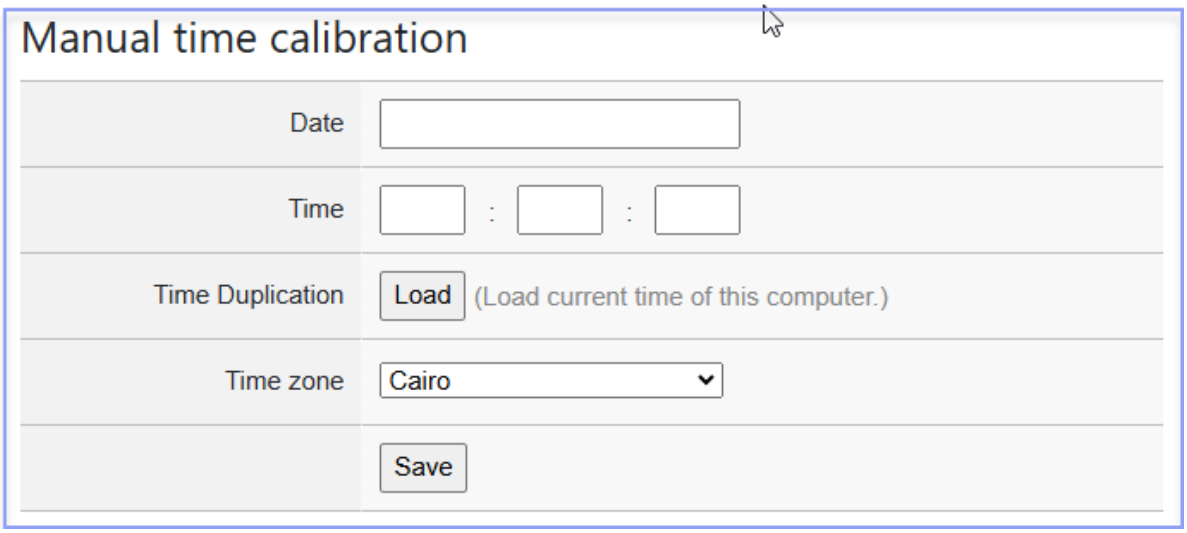


Figure 4-4 Set the date manually Page

System Setting > Time Setting - Set date and time Manually	
Date	Set the system date of the BRK by manually. Directly enter the year/month/day, and then click “Save”.
Time	Set the system time of the BRK manually. Directly enter the hour : minute second, and then click “Save”.
Time Duplication	Copy PC time: it can automatically detect the PC time of the BRK-2841M web page and write the date and time directly into the date and time fields, eliminating the need for manual input.
Time Zone	Click to save the settings of this item and update the data of “Time Setting” to the “Date And Time Display” on the top of this page.

Table 4-4 Descriptions: System Setting > Time Setting > Set date and time Manually

- **NTP time calibration**

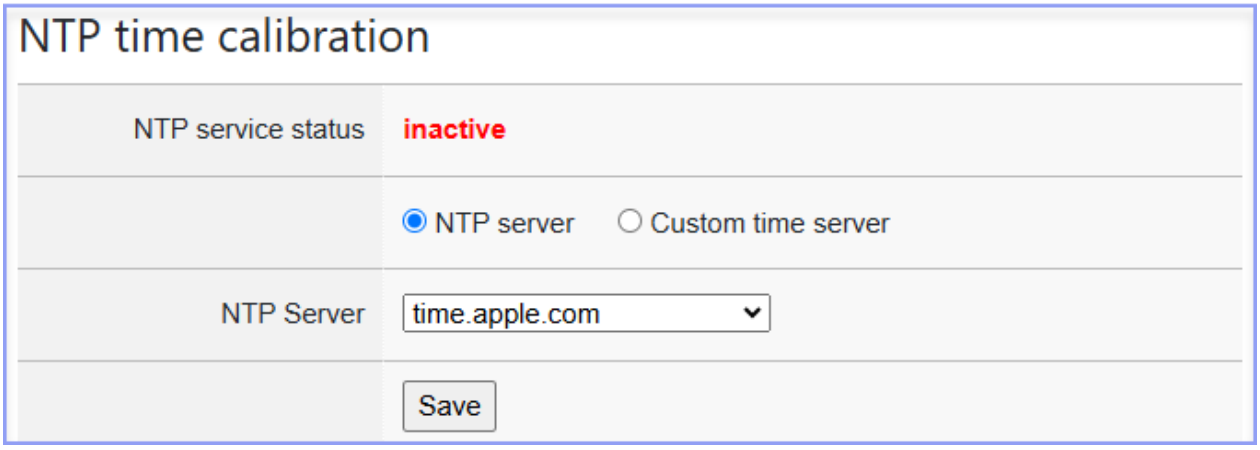


Figure 4-5 NTP time calibration Page

System Setting > Time Setting – NTP time calibration	
NTP service status	Displays whether the NTP service is active or not.
NTP server	Select the NTP server you want to use in the drop-down menu. If the drop-down menu does not have the NTP server you want, you can click Custom time server and manually enter the NTP server URL.

Table 4-5 Descriptions: System Setting > Time Setting > NTP time calibration

Note: BRK-2841M will only apply one of the calibrations. If you select manual calibration first, it will automatically inactivate the NTP calibration service. After setting the NTP calibration, it will be based on the time of the selected NTP server.

4.1.4 Language Setting

Function： Change the BRK language settings.

Menu Path：【System Setting】➔【Language Setting】

Figure 4-6 Language Setting Page

System Setting > Language	
Language	Select to change the language.
Save	Click to save the settings of this page.

Table 4-6 Descriptions: System Setting > Language

4.1.5 Project File

Function: Provide back-up and restore setting for the BRK project.

Menu Path:【System Setting】➔【Project File】

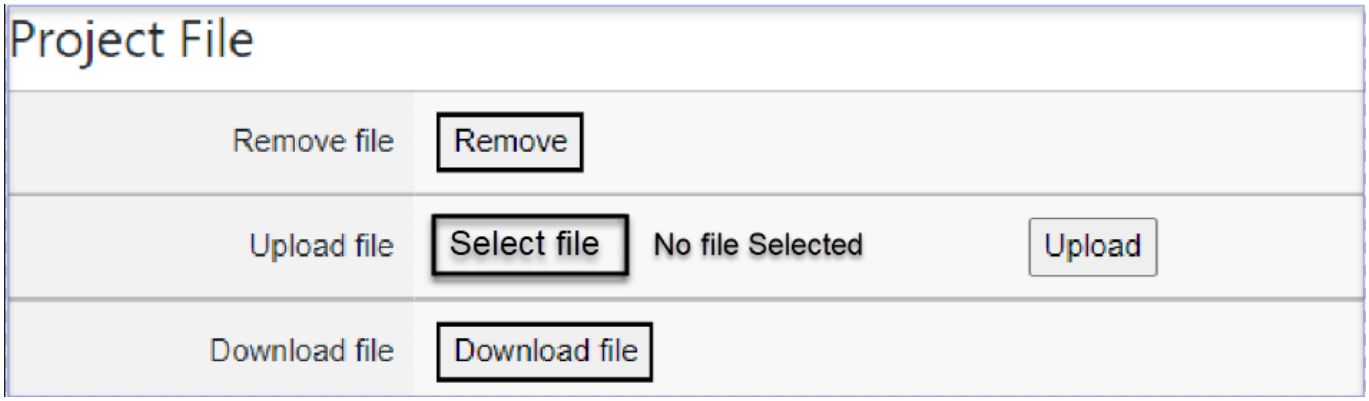


Figure 4-7 Project File Page

- Remove the project

Remove the current project and recover to factory setting.

- Upload the project

Upload the project file to the BRK. This function can quickly replace the previously backed up project file.

System Setting > Project File > Upload the project	
Select File	Select to restore the project file.
Upload	Upload project file.

Table 4-7 Descriptions: System Setting > Project File

- Download the project

Download the project file, to easily back up the project settings.

4.1.6 Utility

Function: The EZ-UAQ Utility allows site owners and network administrators to manage modules quickly.

Menu Path:【System Setting】➔【Utility】

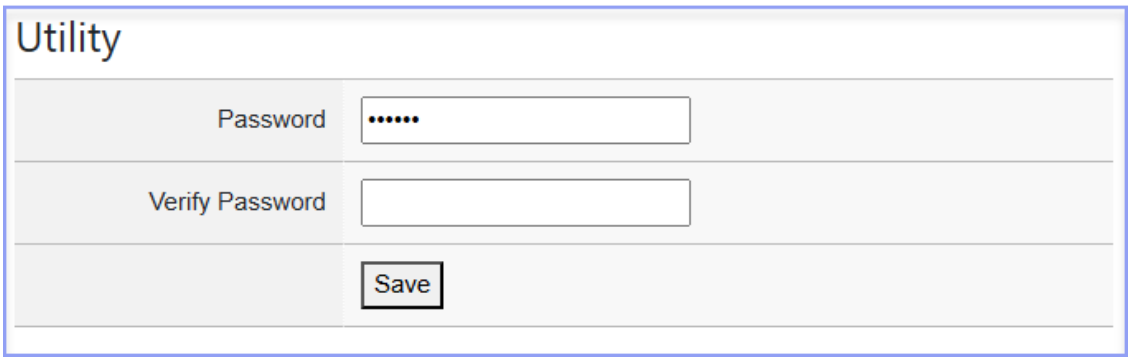
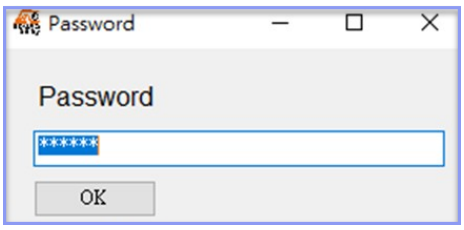
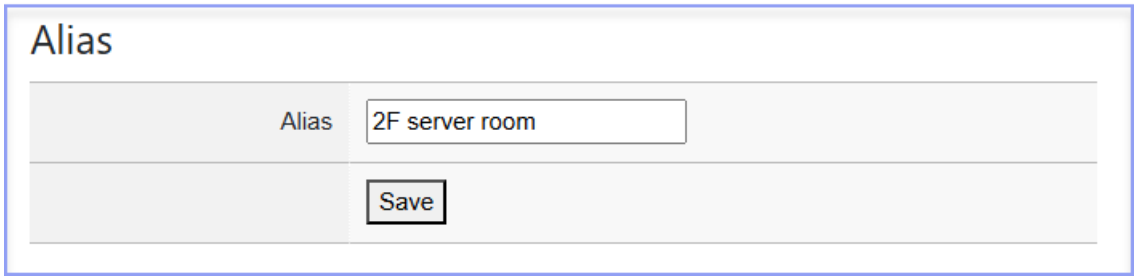
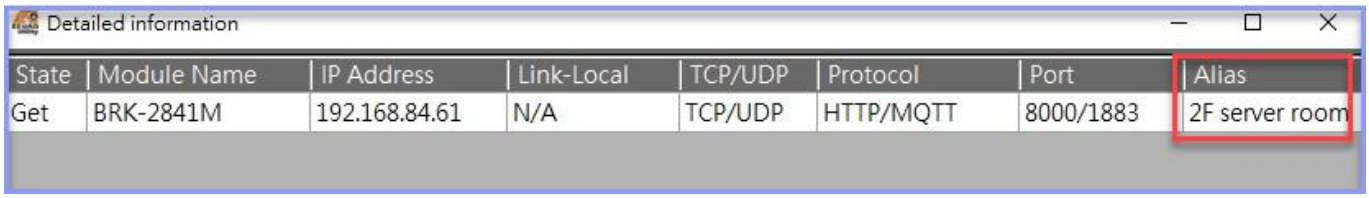


Figure 4-8 Utility Page







System Setting > Utility	
Password	Change EZ-UAQ Utility Password.
Verify Password	Re-enter the password you wish to change.
Alias	Set the name that BRK-2841M displays in the EZ-UAQ Utility scan list.

Table 4-8 Descriptions: System Setting > Utility

4.2 Main Menu – MQTT Setting

This main menu represents all information of MQTT Broker and provide related settings of MQTT services.

4.2.1 Local Broker Setting

Function: Provide built-in Broker setting of the BRK.

Menu Path:【MQTT Setting】➔【Local Broker Setting】

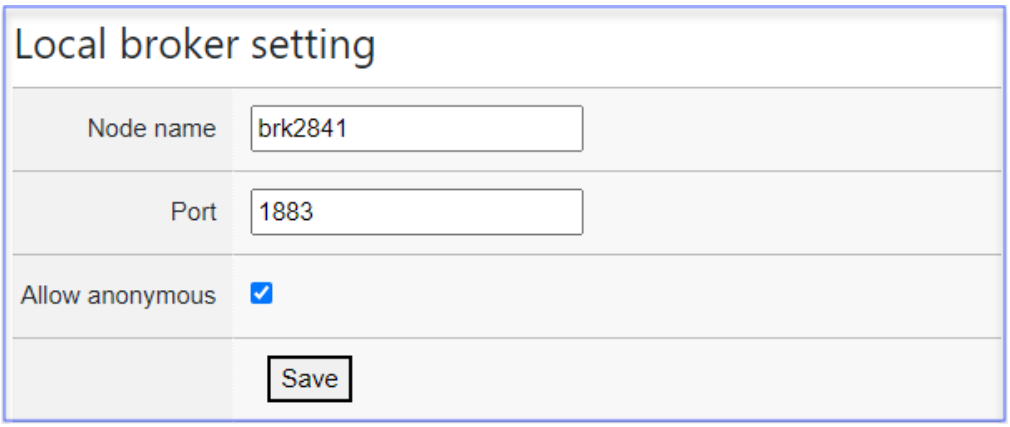


Figure 4-9 Local Broker Setting Page

MQTT Setting > Local broker Setting	
Node name	The broker's unique identifier is related to the following MQTT services. 1. Cluster Identification Nodes are the key to determining the identity of each node when BRK-2841M forms a cluster. Nodes are the key to determining the identity of each node when BRK-2841M forms a cluster. 2. Distributed Communications The node is the basis for communication between the BRK-2841M. For example, synchronizing subscription information and delivering messages between nodes. 3. Logs and monitoring identification Identify different node sources in the Log.
Port	COM Port of Broker, default: 1883.
Allow anonymous	1. Check the box: it can connect without a username and password. (Login anonymously) 2. Uncheck the box: the connection requires setting up the username and password. **(Please refer to 4.2.3 Broker Account Setting- Add Broker Account)**

Table 4-9 Descriptions: MQTT Setting > Local Broker Setting

4.2.2 MQTT Bridge Setting

Function: Provide MQTT Bridge setting.

Menu Path:【MQTT Setting】➔【MQTT Bridge Setting】

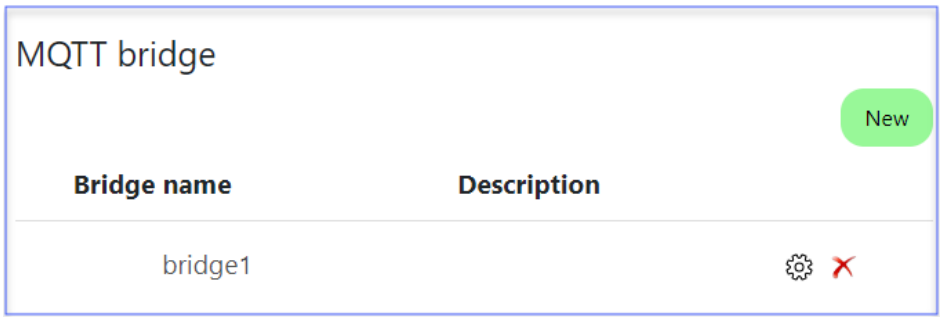


Figure 4-10 MQTT Bridge Setting Page (1)

MQTT Setting > MQTT bridge	
Bridge name	Name of connection of Local Broker bridge to remote Broker.
Description	The note of bridge name.
	Edit setting of remote Broker bridge .
	Remove the remote Broker bridge.

Table 4-10 Descriptions: MQTT Setting > MQTT Bridge Setting (1)

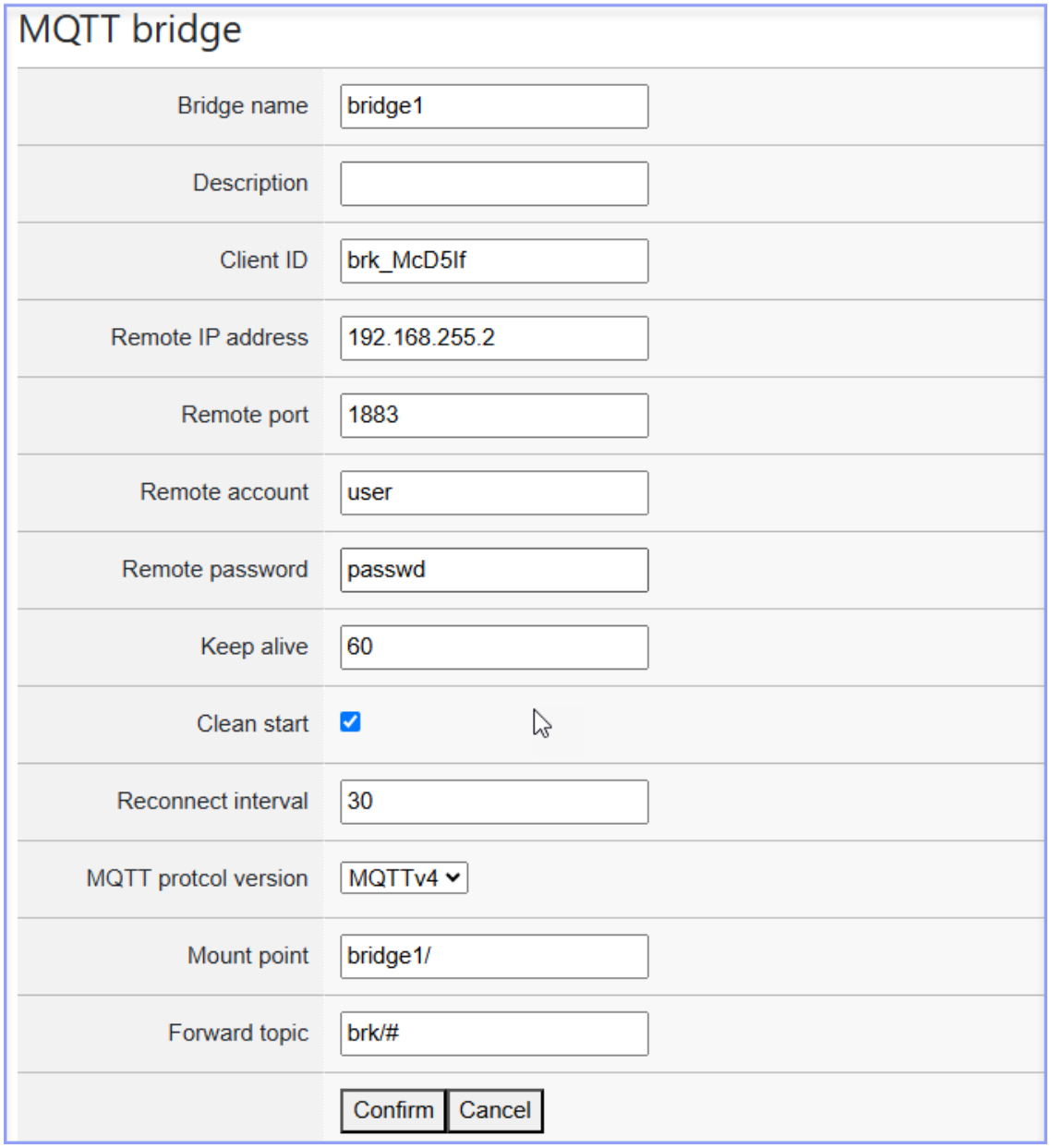


Figure 4-11 MQTT Bridge Setting Page (2)

MQTT Setting > MQTT bridge	
Bridge name	Name of connection of Local Broker bridge to remote Broker.
Description	The note of bridge name.
Client ID	Client connection to remote Broker ID.
Remote IP Address	The IP address of the remote Broker.
Remote Port	The COM port number of the remote MQTT Broker, default: 1883.
Remote account	Account of remote Broker. (This field can be null if remote Broker allow Anonymous login)
Remote password	Password of remote Broker. (This field can be null if remote Broker allow Anonymous login)
Keep Alive	Diagnosis whether local Broker and remote Broker interrupt. unit time: second.

Clean Start	Clean Cloud to Device(C2D) Message Some IoT platforms require to Clean it.
Reconnect interval	The interval for resetting the connection after the connection between the local broker and the remote broker is disconnected. (unit: second)
MQTT protocol version	Select the version of MQTT, offering MQTTv3, MQTTv4, and MQTTv5 options.
Mount Point	Prefix of the Topic.
Forward Topic	Forward the Topics

Table 4-11 Descriptions: MQTT Setting > MQTT Bridge Setting (2)

4.2.3 Users

Function：Allow specific user connect with Broker.

Menu Path：【MQTT Setting】➔【Users】

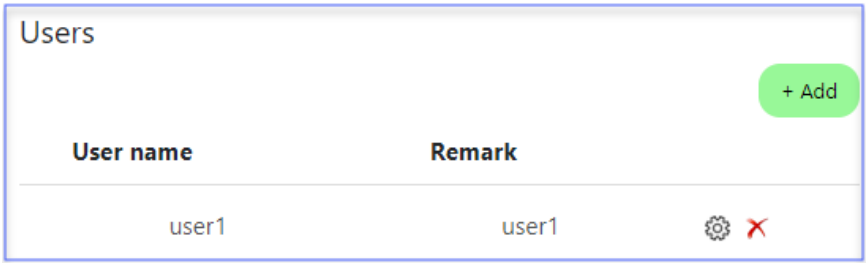


Figure 4-12 Users Setting Page (1)

MQTT Setting > Users	
User name	The local Broker account in use.
Remark	Remarks of the Account.
⚙	Edit password and remarks of the account.
✕	Remove the account from local Broker.

Table 4-12 Descriptions: MQTT Setting > Users

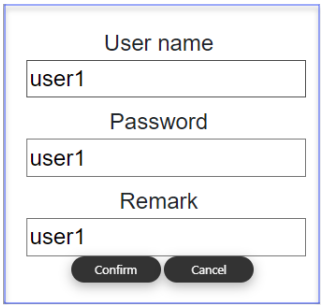


Figure 4-13 Users Setting Page (2)

MQTT Setting > Broker Account – Add User	
User name	Add account name for local Broker.
Password	Add password for local Broker.
Remark	Remarks of the Account.

Table 4-13 Descriptions: MQTT Setting > Broker Account > Add User

4.2.4 Rule Engine

Function： Manage read and write permissions of MQTT Topic.

Menu Path：【MQTT Setting】➔【Rule Engine】

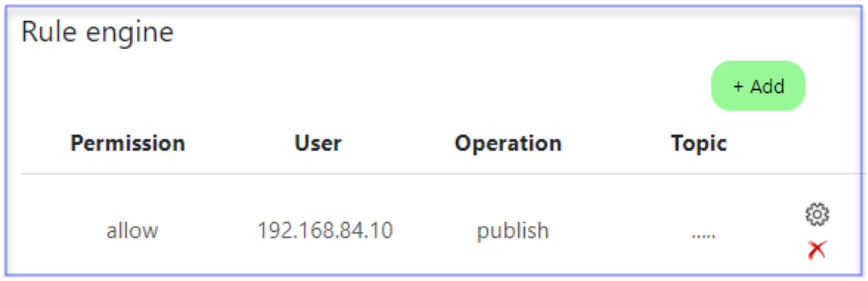


Figure 4-14 Rule Engine Page

MQTT Setting > Rule Management	
Permission	Permissions after enabling the rule. allow: allow deny: deny
User	The objects for which this rule takes effect can be selected from following three objects. User： Broker account can only display an account created by **4.2.3 Broker account.** Client ID： Client ID of MQTT session IP Address： IP Address
Operation	Set the MQTT operations allowed after the rule is enabled. There are three options below. publish： publish are limited to MQTT publish. subscribe： subscribe are limited to MQTT subscribe. publish/subscribe： Allows MQTT publish and subscribe.
Topic	MQTT Topic applied to this rule. **Note**： Topic string longer than 7 characters (including symbols) will be represented by “….”.

Table 4-14 Descriptions: MQTT Setting > Rule Management

4.3 Main Menu – Database

This main menu is a system for storing, managing and querying data.

4.3.1 MQTT data to MySQL

Function： Manage MySQL Connections.

Menu Path：【Database】➔【MySQL】

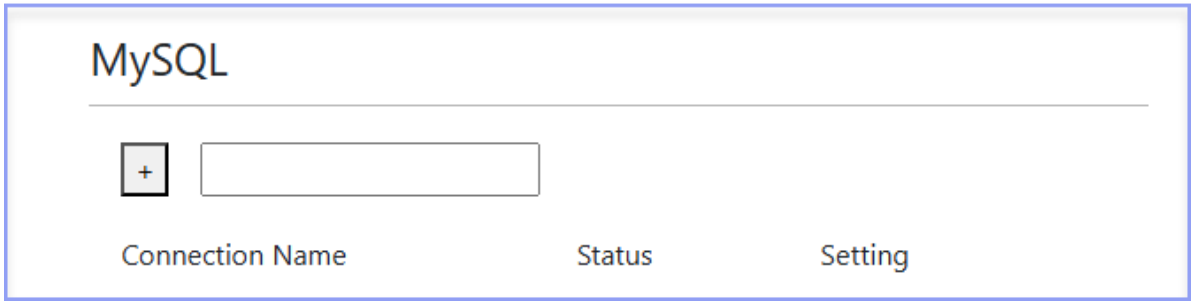


Figure 4-15 MySQL Page (1)

Database > MySQL	
Connection Name	Set the MySQL connection name, if it is empty, the default name will be generated by BRK-2841M.
+	Click '+' to add a connection.

Table 4-15 Descriptions: Database > MySQL (1)

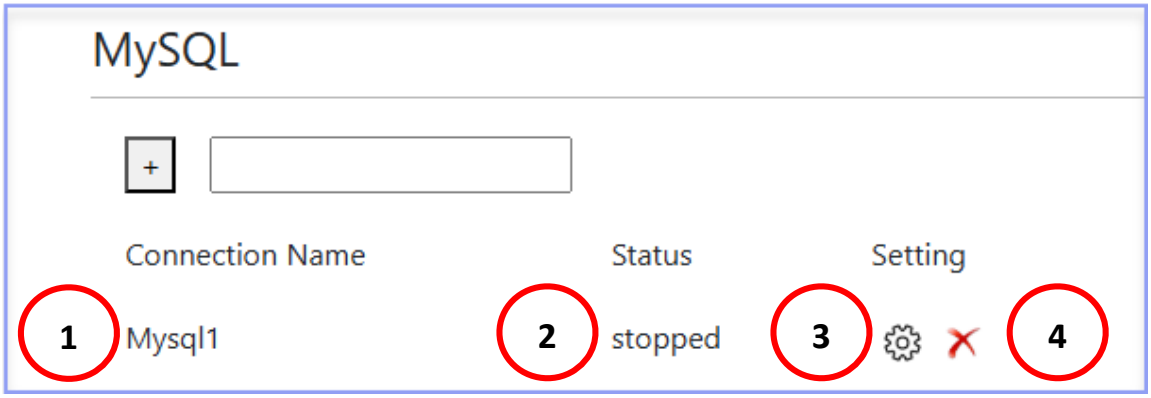


Figure 4-16 MySQL Page (2)

Database > MySQL	
Connection Name	Connection Name of MySQL.
Status	Service enabled status.
⚙	MySQL Advanced Setting.
✕	Remove the connection.

Table 4-16 Descriptions: Database > MySQL (2)

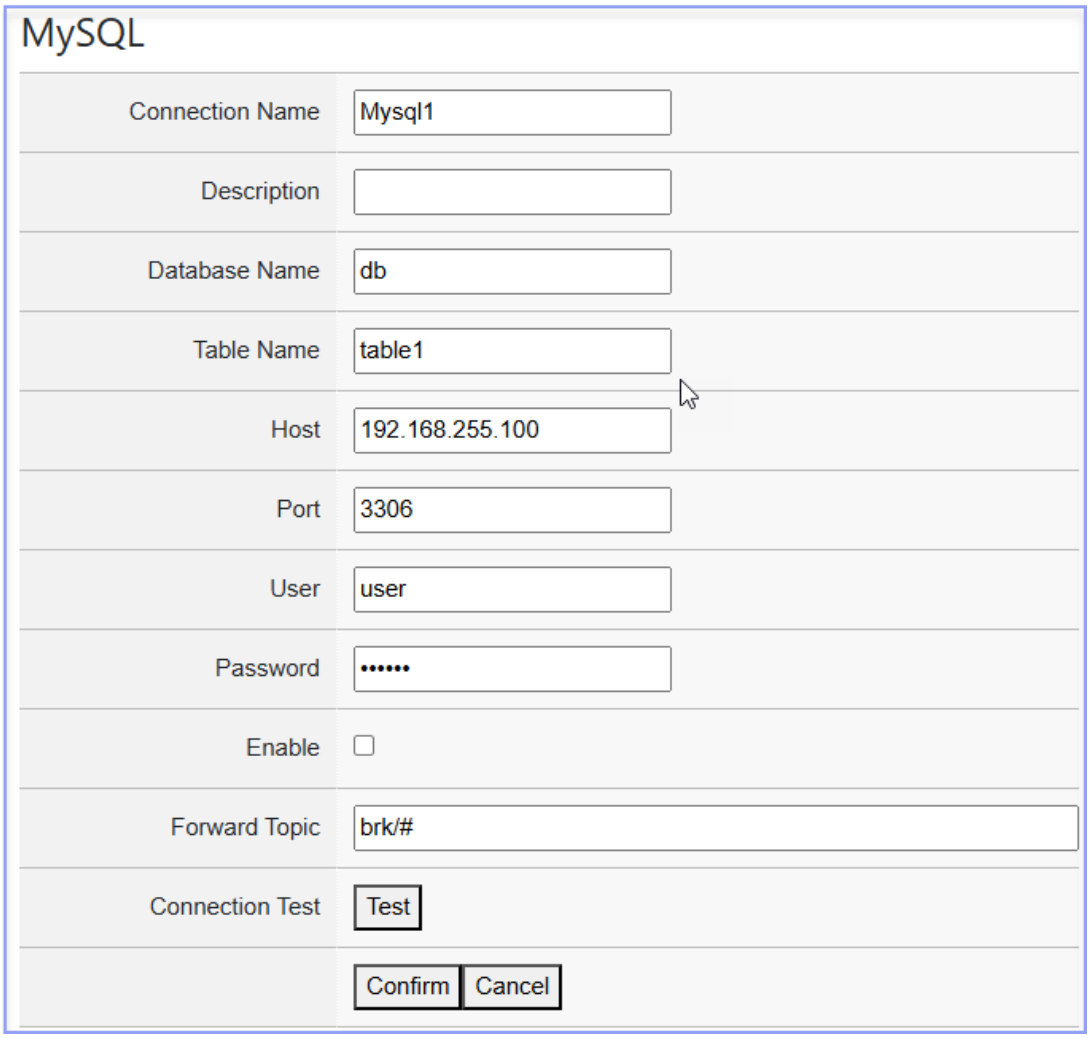


Figure 4-17 MySQL Advanced Setting

Database > MySQL > Advanced Setting	
Connection Name	Connection Name of MySQL.
Description	Field for User Comments (optional)
Database Name	The database name you want to connect to.
Table Name	The table name you want to write to.
Host	IP address of the database server
Port	Database Server Port, default is 3306
User	Database connection account.
Password	Database password.
Enable	Enable Database service, default is off.
Forward Topic	Set the MQTT topic to write into the database. Use “,” to add topics to the same database.
Connection Test	Test whether the BRK-2841M connects to the database successfully. **Note: Displays “OK” or “Failed” on the right side. If “failed” appears, verify the Host, Port, User, and Password.**

Table 4-17 MySQL Advanced Setting

4.3.2 MQTT data to SQL Server

Function： Manage SQL Server Connections.

Menu Path：【Database】➔【SQL Server】

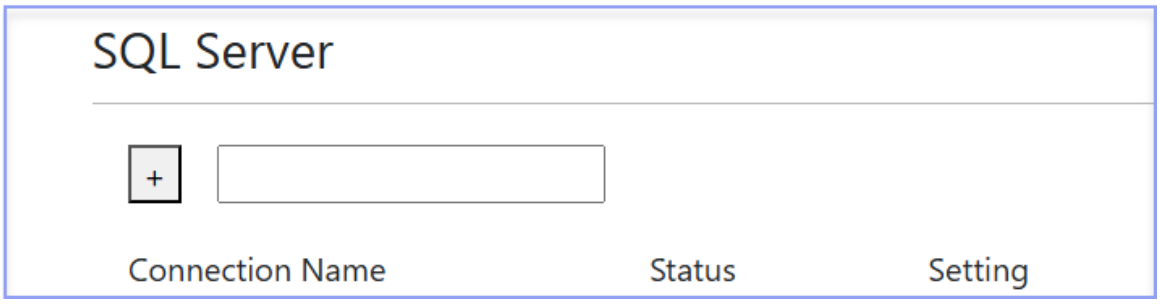


Figure 4-18 SQL Server Page (1)

Database > SQL Server	
Connection Name	Set the SQL Server connection name, if it is empty, the default name will be generated by BRK-2841M.
+	Click '+' to add a connection.

Table 4-18 Descriptions: Database > SQL Server (1)

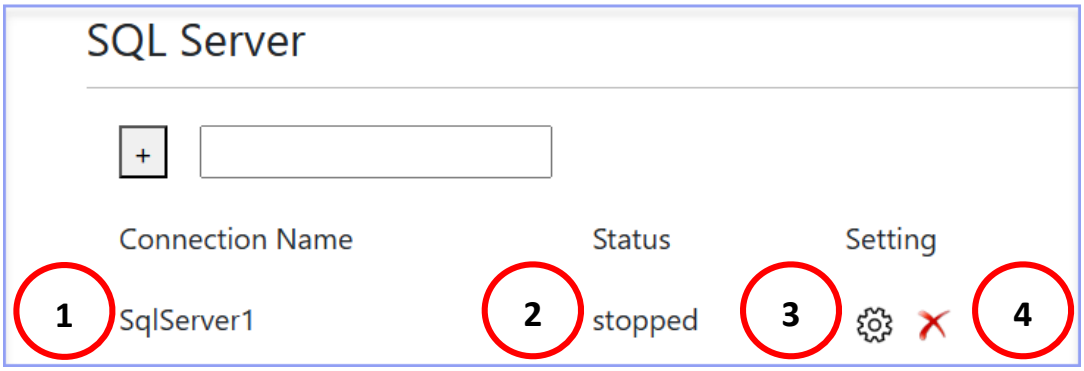


Figure 4-19 SQL Server Page (2)

Database > SQL Server	
Connection Name	Connection Name of SQL Server.
Status	Service enabled status.
	SQL Server Advanced Setting.
	Remove the connection.

Table 4-19 Descriptions: Database > SQL Server (2)

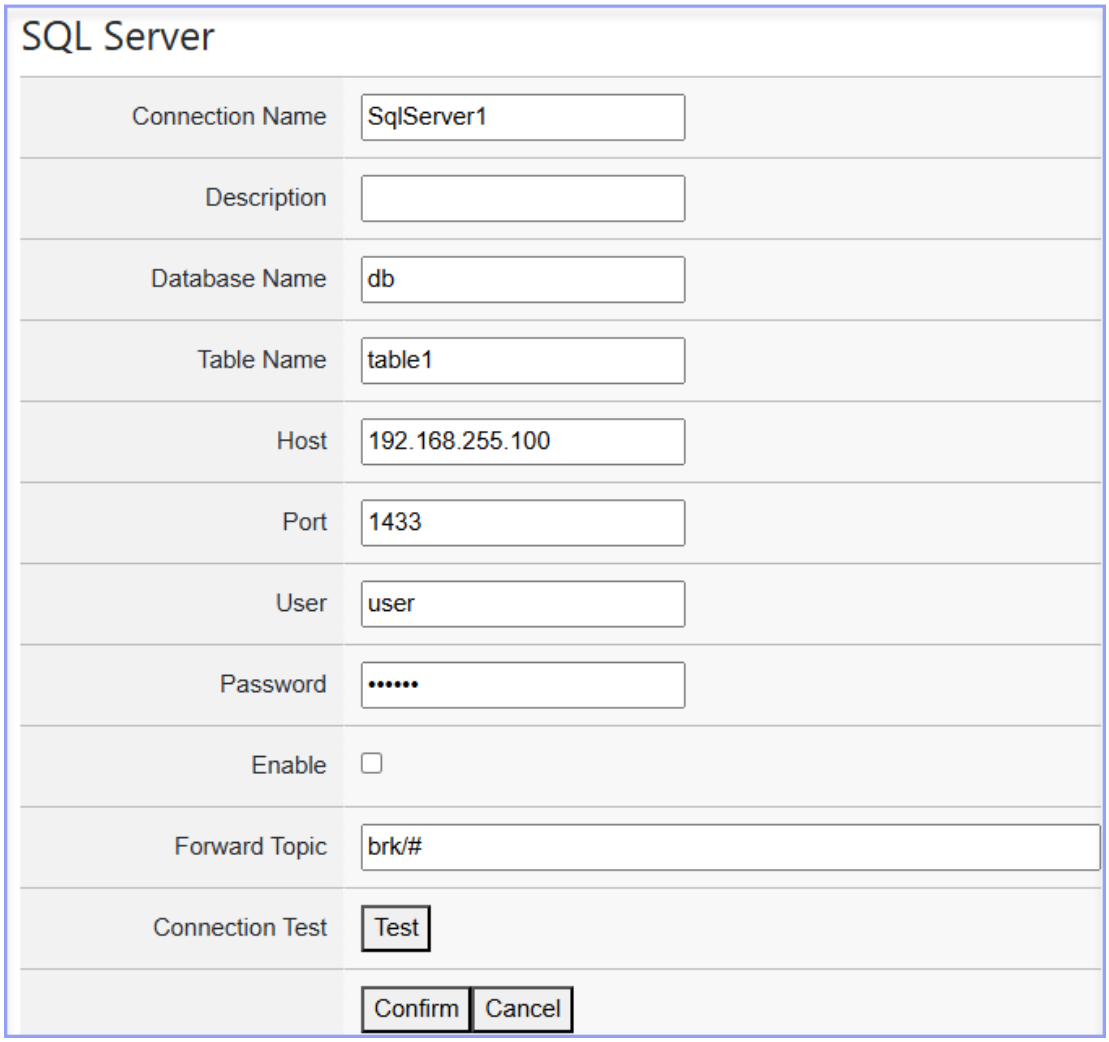


Figure 4-20 SQL Server Advanced Setting

Database > SQL Server > Advanced Setting	
Connection Name	Connection Name of SQL Server.
Description	Field for User Comments (optional)
Database Name	The database name you want to connect to.
Table Name	The table name you want to write to.
Host	IP address of the database server
Port	Database Server Port, default is 3306
User	Database connection account.
Password	Database password.
Enable	Enable Database service, default is off.
Forward Topic	Set the MQTT topic to write into the database. Use “,” to add topics to the same database.
Connection Test	Test whether the BRK-2841M connects to the database successfully. **Note: Displays “OK” or “Failed” on the right side. If “failed” appears, verify the Host, Port, User, and Password.**

Table 4-20 SQL Server Advanced Setting

4.3.3 MQTT data to MongoDB

Function： Manage MongoDB Connections.

Menu Path：【Database】➔【MongoDB】

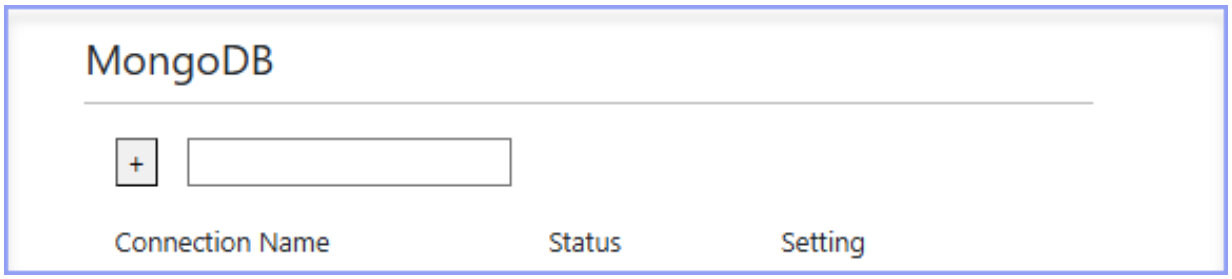


Figure 4-21 MongoDB Page (1)

Database > MongoDB	
Connection Name	Set the MongoDB connection name, if it is empty, the default name will be generated by BRK-2841M.
+	Click '+' to add a connection.

Table 4-21 Descriptions: Database > MongoDB (1)

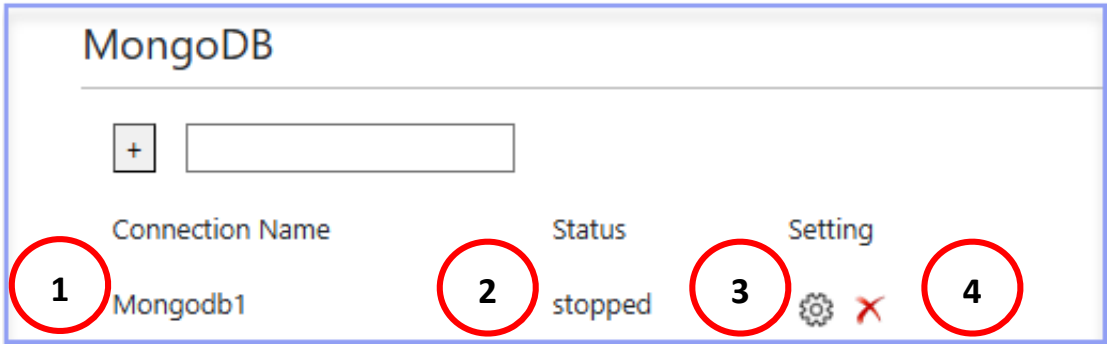


Figure 4-22 MongoDB Page (2)

Database > MongoDB	
Connection Name	Connection Name of MongoDB.
Status	Service enabled status.
⚙	MongoDB Advanced Setting.
✕	Remove the connection.

Table 4-22 Descriptions: Database > MongoDB (2)

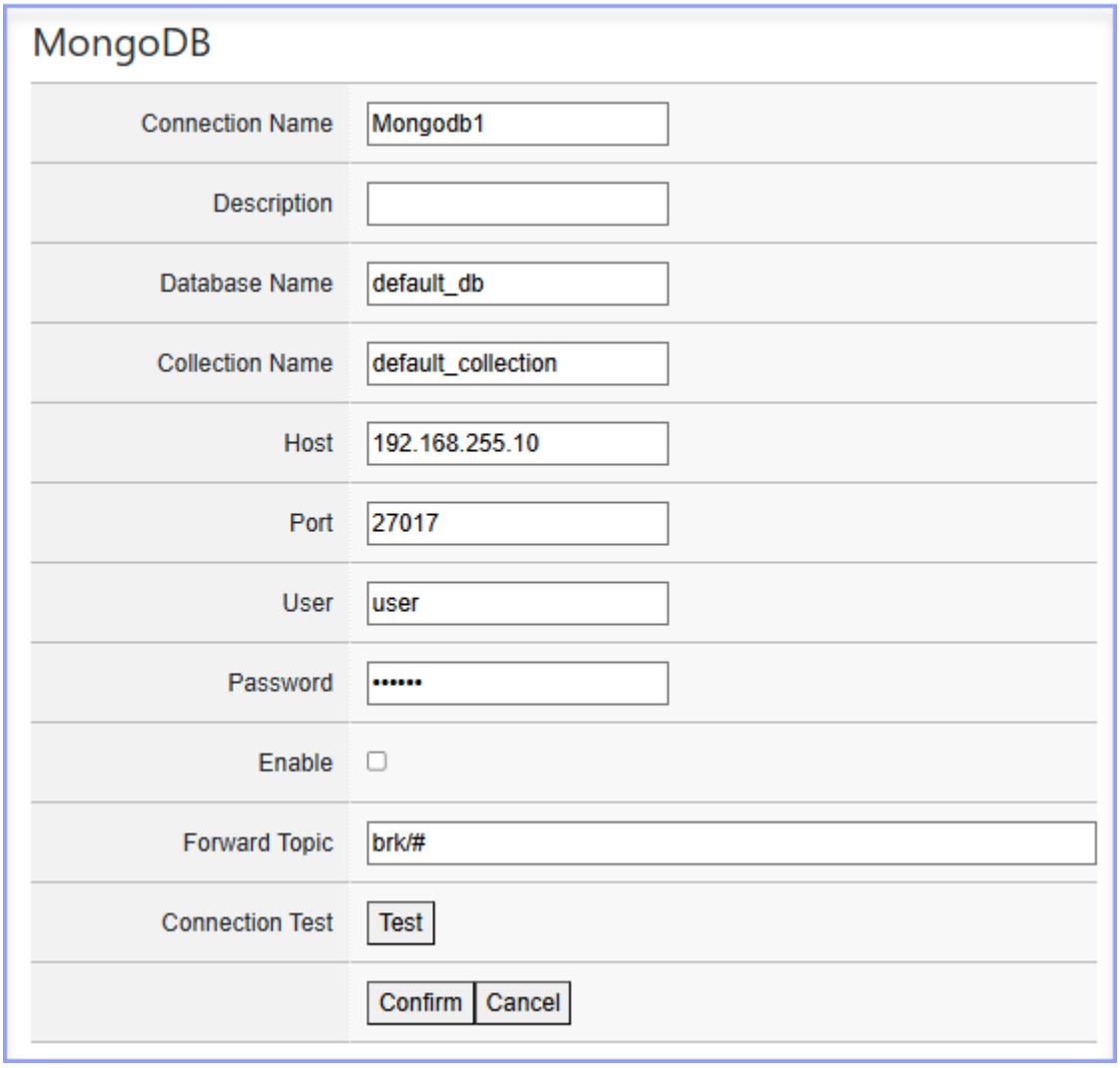


Figure 4-23 MongoDB Advanced Setting

Database > MongoDB > Advanced Setting	
Connection Name	Connection Name of MongoDB.
Description	Field for User Comments (optional)
Database Name	The database name you want to connect to.
Table Name	The table name you want to write to.
Host	IP address of the database server
Port	Database Server Port, default is 3306
User	Database connection account.
Password	Database password.
Enable	Enable Database service, default is off.
Forward Topic	Set the MQTT topic to write into the database. Use “,” to add topics to the same database.
Connection Test	Test whether the BRK-2841M connects to the database successfully. **Note: Displays “OK” or “Failed” on the right side. If “failed” appears, verify the Host, Port, User, and Password.**

Table 4-23 MongoDB Advanced Setting

4.4 Main Menu – Advanced Setting

This main menu is a collection of the advanced setting, such as the BRK device redundancy settings and more advanced functions will be developed in the succession.

4.4.1 Keep Alive Setting

Function： Set up the redundancy function of the BRK device.

Menu Path：【Advanced Setting】➔【Keep Alive Setting】

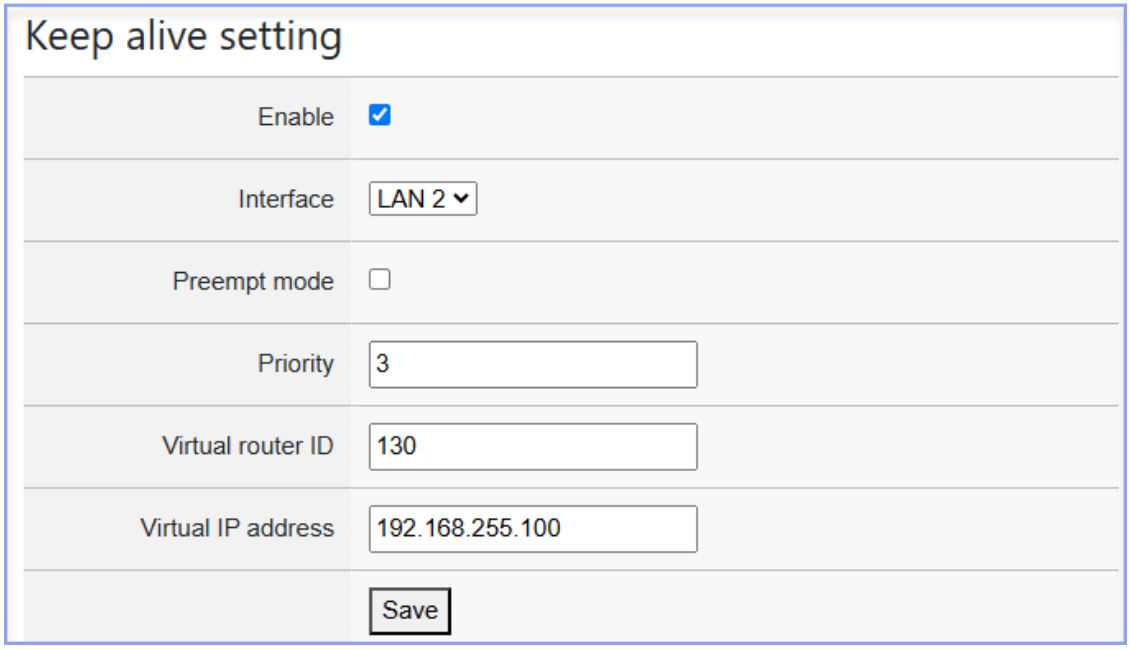


Figure 4-24 Keep Alive Setting Page

Advanced Setting > Keep alive Setting	
Enable	Decide whether to enable BRK redundancy service..
Interface	Network card interface for communication.
Priority	Set the BRK redundancy service takeover order. The larger the number, the higher the takeover priority, and vice versa. **Note: Please set the range value within 0 to 255. If it exceeds 255, it will automatically switch to the default value.**
Virtual router ID	Set the ID numbers of the redundancy BRK devices in the same group. MUST be the same.
Virtual IP address	Set the IP Address of redundancy group. MUST be the same.

Table 4-24 Descriptions: Advanced Setting > Keep Alive Setting