Rievtech PLC connect to Azure IoT platform

1. Enter 'IoT Hub' and create a new IoT Hub.

Create a new 'Resource group'.

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Choose IoT hub tier.

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Defender for IoT Turn on Defender for Io	Off T and add an extr	a layer of threat protection to IoT	Hub, IoT Edge, and your devices. Learn more
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Cost per month	0.00 USD	Cloud-to-device commands (i)	Enabled
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Learn more about IoT Hub 앱 Quickstart: send telemetry from device 앱				
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Create a new IoT devices.

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2. Program xLogic programs.

1) 'Connect to MQTT Server'block

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Name	DemoPLC. azure-devices. net/rievtechPLC 6	
Password	SharedAccessSignature sr=DemoPLC.azure-devices.net%2Fdevices%2FrievtechPLC&sig=3ybL4PKbUQ1bSB	7 Hide
	The CPU [PR-26DC-DAI-RT-4GWIFI] with the firmware version must be \succ V104 can support MQTT	
	OK Cancel	Help

1)Network

The options are Ethernet and 4G (this option is available for 4G PLC models).

2)Domain Name

Get this address from the picture below:

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Home >		
DemoPLC 🖈 …		
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A Overview	∧ Essentials	Copy to clipboard
Activity log	Resource group (change) : Demo	Hostname : DemoPLC.azure-devices.net
Access control (IAM)	Status : Active	Pricing and scale tier : F1 - Free
Taos	Current location : East US	Number of IoT Hub units : 1
(0) - (1) - (1)	Subscription (change) : Azure 订阅 1	Minimum TLS Version : 1.2
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3)Port

Fill in 8883

4)SSL/TLS

As shown below:

Enable SSL/TLS	Protocol TLSV1.2	
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5)Client ID

Fill in 'Device	e ID'.						
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Built-in endpoints Failover Properties							
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Query explorer IoT devices						\searrow	

6) Name

format {iothubhostname}/{device_id}

{iothubhostname} is Domain Name.
{device_id} is Client ID.

Fill in here: DemoPLC.azure-devices.net/rievtechPLC

7) Password

A dynamic token is generated by Visual Studio Code software as the

password for connection. The token has a validity period, after the validity period expires, the connection will fail.

Install the "Azure IoT Tools" extension.



Enter the "Explorer" window and connect to Azure IoT Center.





If the following information is displayed in the lower right corner:



Follow the methods below to solve this problem:

Press CTRL + SHIFT + P, and then search for 'Azure Sign In'. A browser window should show up, asking you to sign in. Then suddenly your Microsoft Azure Account Extension should work again.

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ф	EXPLORER	>Azure Sign In			
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sa≻					
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After successfully logging in to Azure Account in the browser window, the following picture will appear:



Perform the following operations again.



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Generate SAS Token:

Select the target IoT device, right-click the mouse, and select the "Generate SAS Token for Device" option.



After entering the valid time of the token, press Enter to end.



See the string corresponding to the token in the "output" window.



In the above picture, the content selected in the red box is the **Password** we need.

2) 'Publish with MQTT'block

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The format of Publish topic is as follows: devices/IoT device name/messages/events/

IoT device name is rievtechPLC

)4[Publish with MQTT]											
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3) 'Subscribe with MQTT'block

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QoS Level	
✓ Subscribe interval time	30 ÷ I S
Subscribe topic	devices/rievtechPLC/messages/devicebound/#
	🔽 Azure C2D

The format of Subscribe topic is as follows: <u>devices/IoT device name/messages/devicebound/#</u> IoT_device_name is rievtechPLC

B005[Subscribe with MQTT]	
Comm Parameter Comment	
Message saved to:	
Strings Start byte:	(Total length: 256 chars)
Receive number:	As Received 🔽 1 📑 I
	Option 1: User can set number of chars could read "Chars to Receive"
	Option 2: User can NOT set number of chars, could read "As Received"

3. Test MQTT

1) Download the program to the PLC and monitor online, as shown in the figure below, you can see that the PLC has successfully reached the Azure IoT platform.



2) Test PLC's Subscribe

Press the down button on the PLC LCD panel to trigger 'Subscribe with MQTT', as shown in the figure below:



Send information on Visual Studio Code software. Right click on the device and select 'Send C2D Message to Device'.



Fill in the content.

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Ð		EXPLOR	ER		Hi,te	st~!					
	\sim 1	NO FOL	DER OPENED		Enter message to send to device (Press 'Enter' to confirm or 'Escape' to cancel)						

Press Enter to send.

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE	zure IoT Hub 🛛 🗸 🗸	≅6°^×
[C2DMessage] Sending message to [rievtechPLC] [C2DMessage] [Success] Message sent to [rievtechPLC]		
1		
		I

The PLC receives the information.



3) Test the Pubish of PLC

On the Visual Studio Code software, right-click the device and select 'Start Monitoring Built-in Event Endpoint'.



Press the up button on the PLC LCD panel to trigger 'Publish with MQTT', as shown in the figure below:



You can see the information sent by the PLC on the 'OUTPUT' window on the Visual Studio Code software, as shown in the figure below:

