

SCA-IOT2050 Access to Azure IoT Hub

This guide will introduce that how to make SCA-IOT2050 access to **Azure IoT Hub**.

For more information, please see chapter **Support & Service**.



Azure
Certified
Device



IIOT-MODULE INSIDE

MICROSOFT AZURE IOT CONNECTION POWERED BY SCAPEAK

已集成凌顶科技工业物联网边缘 IIOT-MODULE 应用系统

由凌顶科技提供至微软 AZURE IOT 中心 连接支持

History

Date	Version	Comment
2021/10/10	1.0.1	First Document
2021/10/13	1.0.2	Add "Config Pre-Telemetry Topic" and "integrates with Azure IoT Explorer"
2021/10/14	1.0.3	调整章节顺序，更正Note时间标注错误

Contents

SCA-IOT2050 Access to Azure IoT Hub

History

Contents

Overview

Preface

Basic knowledge requirements

1 Accessing to Azure IoT Hub

1.1 Requirement

1.2 Procedure

1.2.1 Create a Policy for DPS

1.2.2 Access to Device by EdgePlant

1.2.3 Input the configuration info

1.2.4 Write symmetric key

1.2.5 Config Pre-Telemetry Topic (Optional)

1.2.6 Save your Configuration

1.2.7 Restart Process AzureIotDeviceAgent

2 Verify AzureIotDeviceAgent

3 Integrates with Azure IoT Explorer

Support & Service

Contact Us

Overview

Real-time acquisition of machine production data, industrial network communication, database storage and cloud transmission, intelligent equipment management, complex edge computing applications (Machine Vision, Prognostics and Health Management, etc.)

- It is suitable for networking requirements of clustered machines and complex edge computing applications
- Based on Siemens SIMATIC IOT2050 with reliable quality and powerful computing power
- Containerized deployment of Azure IoT Edge, deploy Azure Edge intelligence
- Integrated IIoT-Module industrial application software Docker image
- Container OTA and application OTA
- Provide custom application software development services
- European CE, UL, CCC certification

Preface

These operating instructions contain all the information you need for commissioning and operation of a device in the SIMATIC IOT2000 family.

It is intended both for programming and testing personnel who commission the device and connect it with other units (automation systems, programming devices), as well as for service and maintenance personnel who install additions or carry out fault/error analyses.

Basic knowledge requirements

Knowledge of personal computers, operating systems and programming is required to understand this manual. General knowledge in the field automation control engineering is recommended.

1 Accessing to Azure IoT Hub

1.1 Requirement

- SCA-IOT2050 in the environment to access the Internet.
- An Azure Account:
 - Azure IoT Hub
 - Azure DPS
- EdgePlant (version: 2.3.0 or higher)

1.2 Procedure

1.2.1 Create a Policy for DPS

Microsoft Azure 由世纪互联运营 搜索资源、服务和文档(G+)

主页 > dpsdev > 添加注册 ...

保存

机制 * ①
对称密钥

自动生成密钥 ①
☒

主键 ①
请输入主密钥

辅助密钥 ①
请输入辅助密钥

注册 ID *
quick-single-dps-demo

IoT 中心设备 ID ①
设备 ID

IoT Edge 设备 ①
☐ True ☒ False

选择要如何将设备分配到中心 ①
均衡加权分布

选择此设备可分配到的 IoT 中心: ①
SCAPEAK-Plazure-devices.cn

write down these info:

parameter	value
DPS endpoint	dpsdev.azure-devices-provisioning.cn
ID Scope	0cn0002621C
Device ID / Registration ID	quick-single-dps-demo
symmetric key	<your symmetric key >

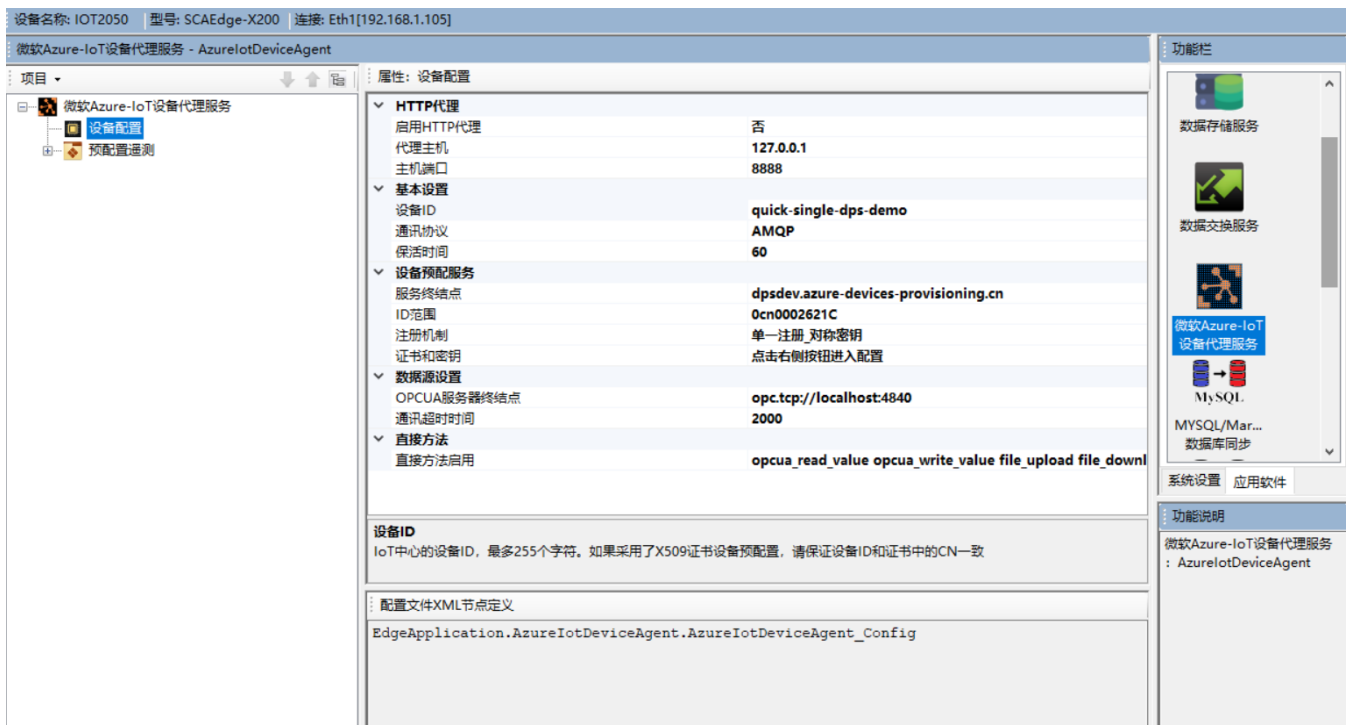
1.2.2 Access to Device by EdgePlant

Double click **EdgePlant.exe** to run it.

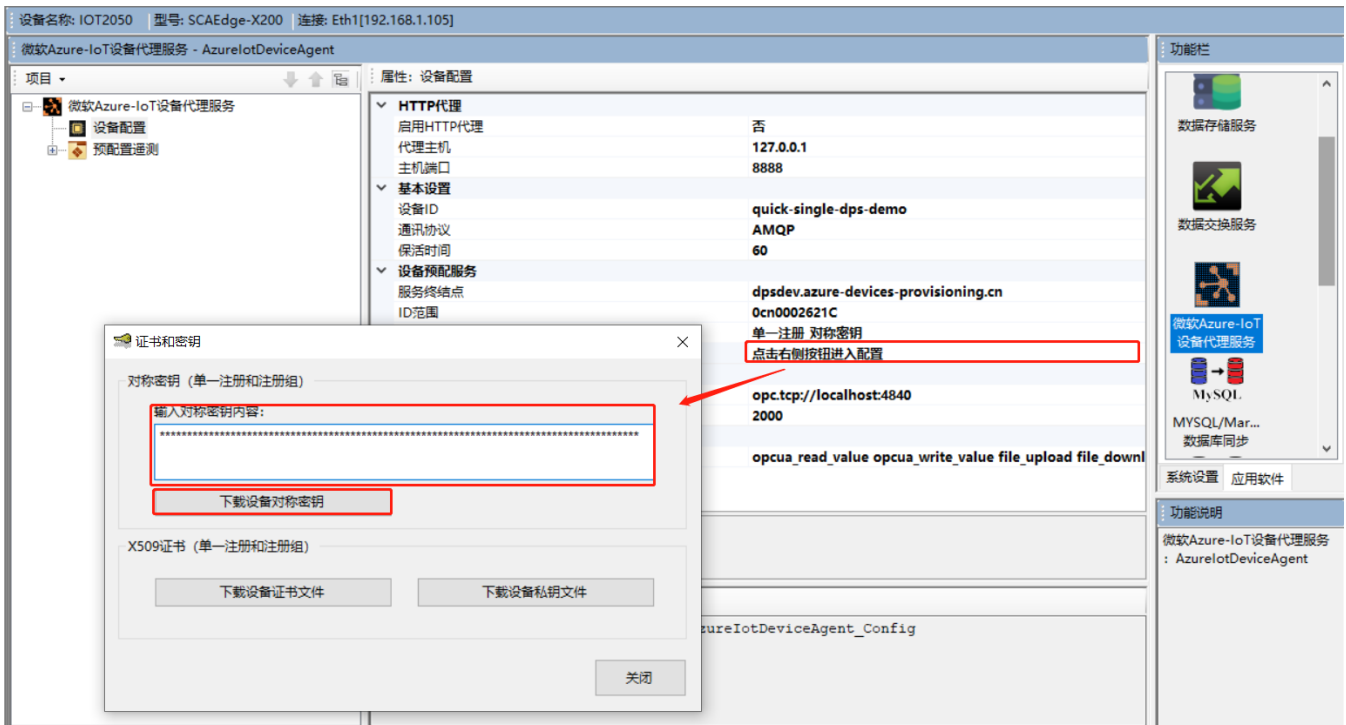
Device named **IOT2050** can be list automatically.



1.2.3 Input the configuration info



1.2.4 Write symmetric key



1.2.5 Config Pre-Telemetry Topic (Optional)

Pre-Telemetry will send some customized info when AzureIotDeviceAgent Start.

Example_1: Report DATETIME.

设备名称: IOT2050 | 型号: EdgePLUS-X200 | 连接: Eth0[192.168.200.1]

微软Azure-IoT设备代理服务 - AzureIotDeviceAgent

项目

微软Azure-IoT设备代理服务

设备配置

预配置遥测

Topic1

FIELD_DT1

FIELD_FIXEDSTRING2

属性: FIELD_DT1

字段配置

字段名称	FIELD_DT1
字段别名	日期时间字段
字段声明	DATETIME(3)
数据格式符	NOW(3)
字段数据源	数据格式符
OPCUA标签	

字段名称
指定字段名称，不超过63个字符。

配置文件XML节点定义
<Field FieldName="FIELD_DT1" FieldAlias="日期时间字段" FiledType="DATETIME(3)" DataFormat="NOW(3)" DataSource="DataFormat" ItemNode="" />

Example_2: Report Device Name SCA-IOT2050.

设备名称: IOT2050 | 型号: EdgePLUS-X200 | 连接: Eth0[192.168.200.1]

微软Azure-IoT设备代理服务 - AzureIotDeviceAgent

项目

微软Azure-IoT设备代理服务

设备配置

预配置遥测

Topic1

FIELD_DT1

FIELD_FIXEDSTRING2

属性: FIELD_FIXEDSTRING2

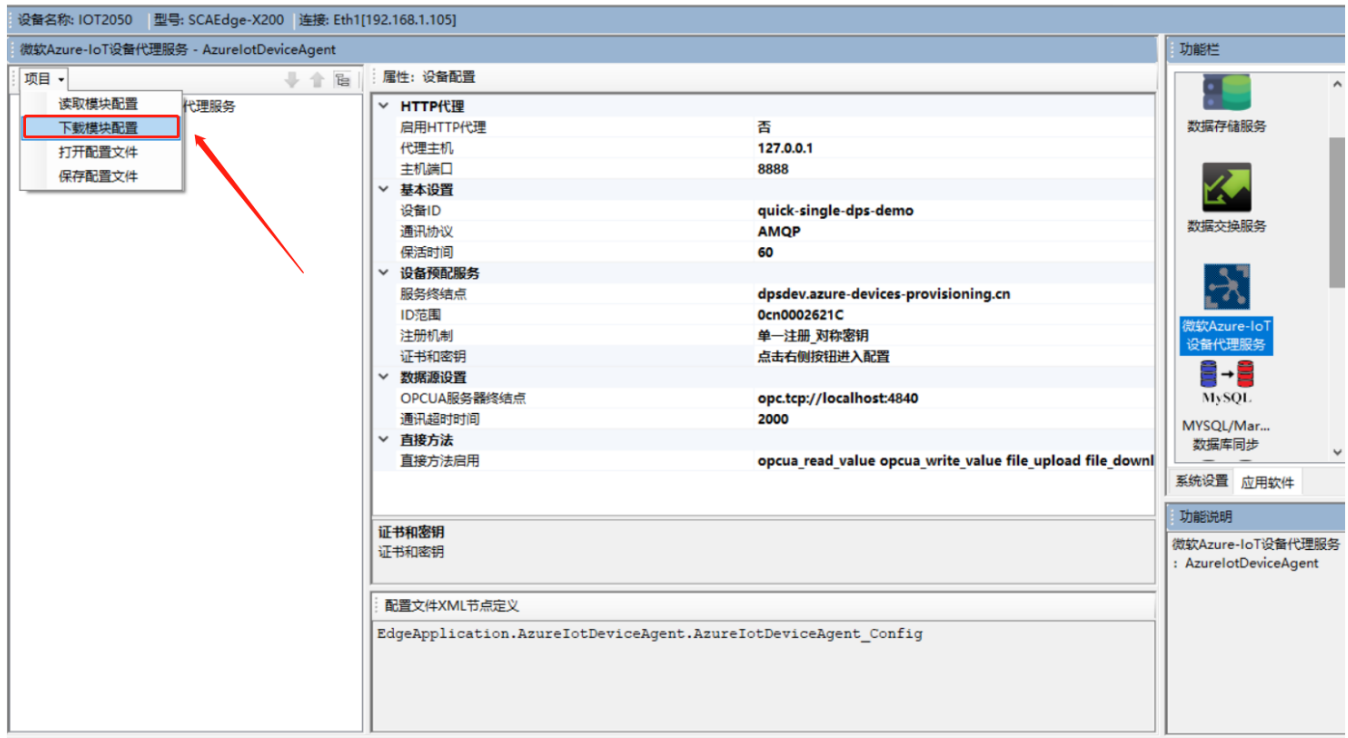
字段配置

字段名称	FIELD_FIXEDSTRING2
字段别名	固定字符串字段
字段声明	VARCHAR(200)
数据格式符	SCA-IOT2050
字段数据源	数据格式符
OPCUA标签	

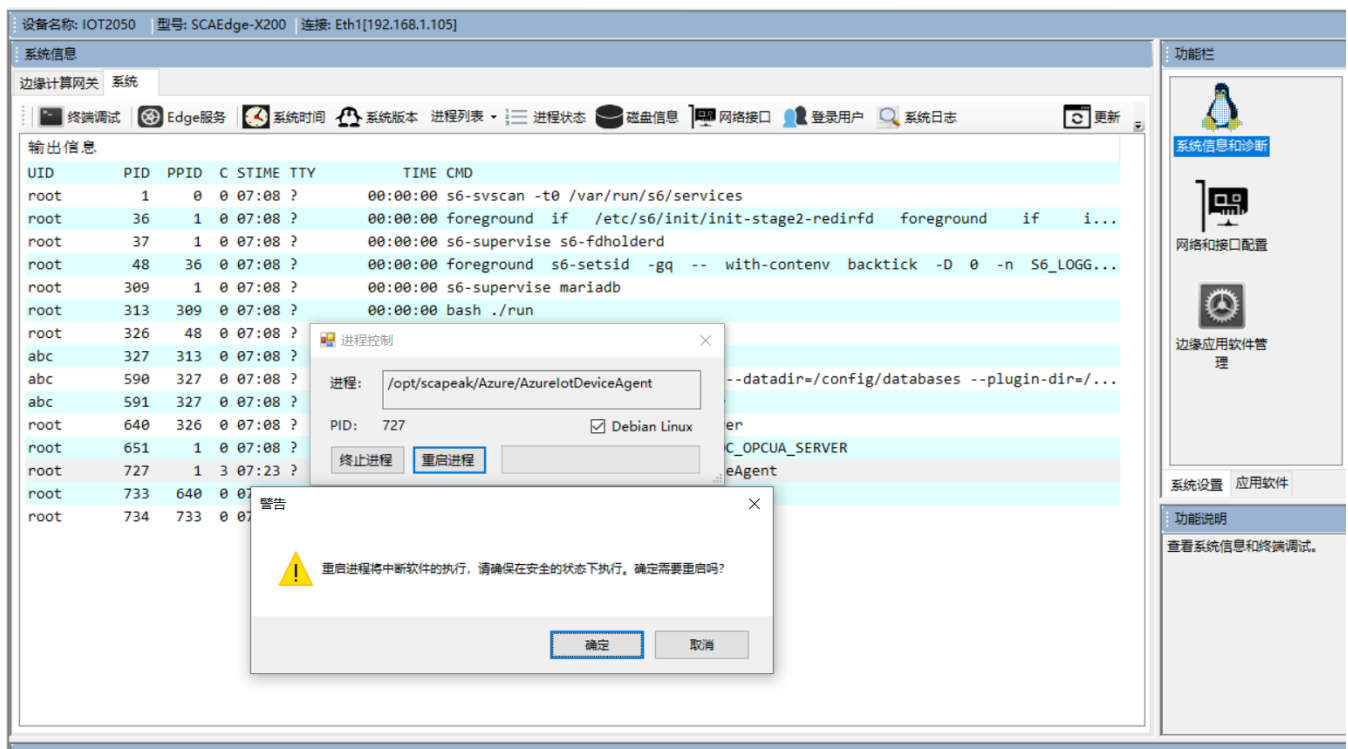
字段名称
指定字段名称，不超过63个字符。

配置文件XML节点定义
<Field FieldName="FIELD_FIXEDSTRING2" FieldAlias="固定字符串字段" FiledType="VARCHAR(200)" DataFormat="SCA-IOT2050" DataSource="DataFormat" ItemNode="" />

1.2.6 Save your Configuration

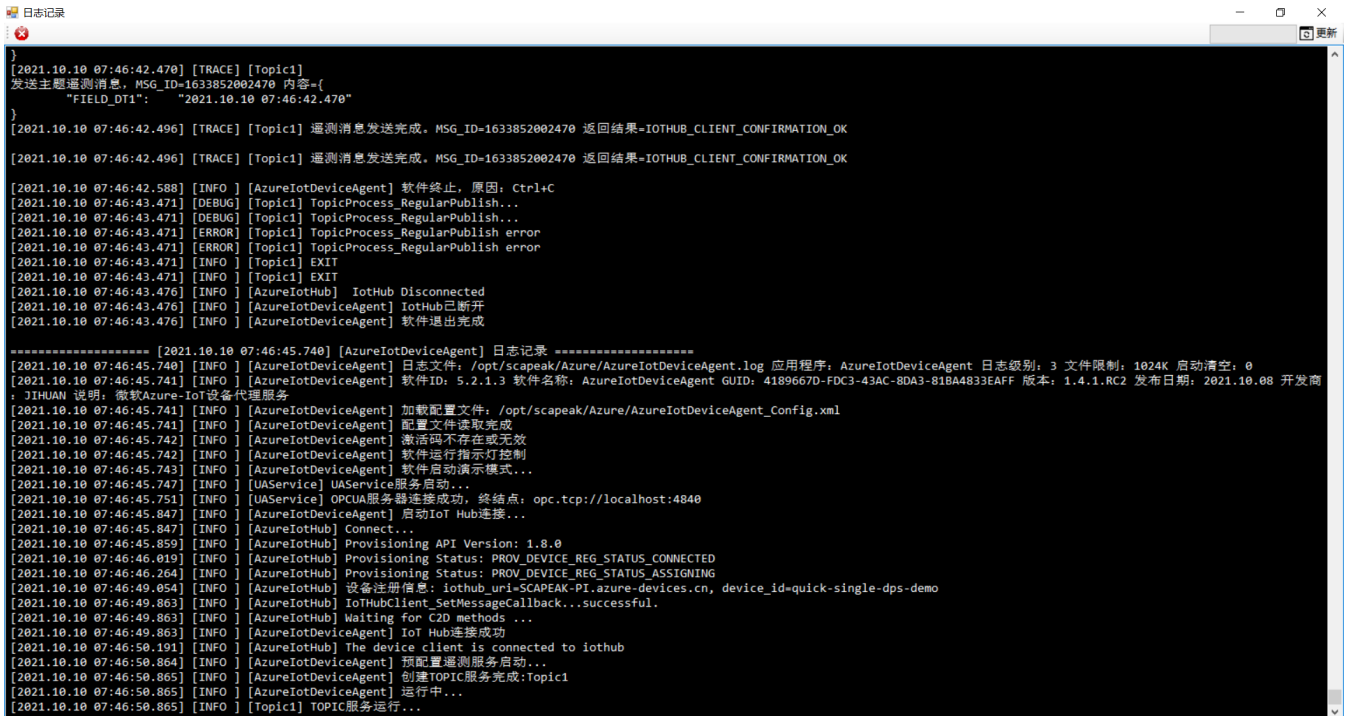


1.2.7 Restart Process AzureIotDeviceAgent



2 Verify AzureIotDeviceAgent

Double click to cat AzureIotDeviceAgent's log.



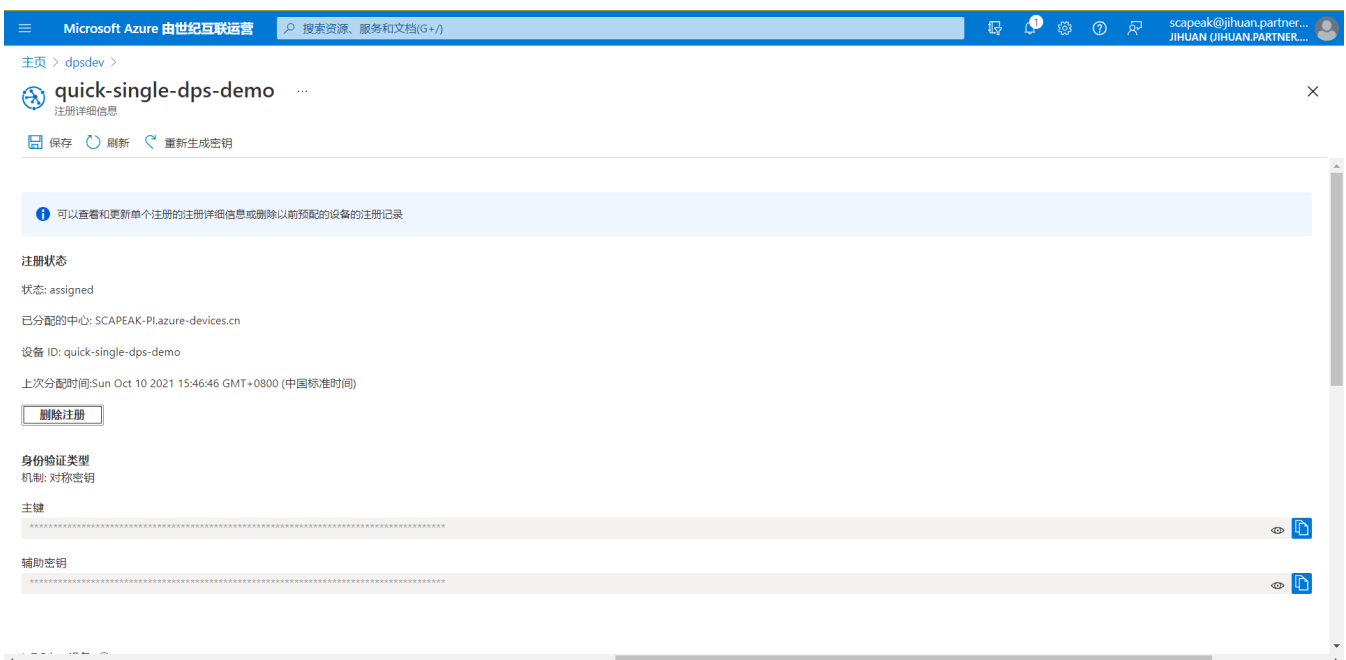
```

}
[2021.10.10 07:46:42.470] [TRACE] [Topic1]
发送主题遥测消息, MSG_ID=1633852002470 内容={
  "FIELD_DT1": "2021.10.10 07:46:42.470"
}
[2021.10.10 07:46:42.496] [TRACE] [Topic1] 遥测消息发送完成, MSG_ID=1633852002470 返回结果-IOTHUB_CLIENT_CONFIRMATION_OK
[2021.10.10 07:46:42.496] [TRACE] [Topic1] 遥测消息发送完成, MSG_ID=1633852002470 返回结果-IOTHUB_CLIENT_CONFIRMATION_OK

[2021.10.10 07:46:42.588] [INFO] [AzureIotDeviceAgent] 软件终止, 原因: Ctrl+C
[2021.10.10 07:46:43.471] [DEBUG] [Topic1] TopicProcess_RegularPublish...
[2021.10.10 07:46:43.471] [DEBUG] [Topic1] TopicProcess_RegularPublish...
[2021.10.10 07:46:43.471] [ERROR] [Topic1] TopicProcess_RegularPublish error
[2021.10.10 07:46:43.471] [ERROR] [Topic1] TopicProcess_RegularPublish error
[2021.10.10 07:46:43.471] [INFO] [Topic1] EXIT
[2021.10.10 07:46:43.471] [INFO] [Topic1] EXIT
[2021.10.10 07:46:43.476] [INFO] [AzureIoTHub] IoT Hub Disconnected
[2021.10.10 07:46:43.476] [INFO] [AzureIotDeviceAgent] IoT Hub已断开
[2021.10.10 07:46:43.476] [INFO] [AzureIotDeviceAgent] 软件退出完成

===== [2021.10.10 07:46:45.740] [AzureIotDeviceAgent] 日志记录 =====
[2021.10.10 07:46:45.740] [INFO] [AzureIotDeviceAgent] 日志文件: /opt/scapeak/Azure/AzureIotDeviceAgent.log 应用程序: AzureIotDeviceAgent 日志级别: 3 文件限制: 1024K 启动清空: 0
[2021.10.10 07:46:45.741] [INFO] [AzureIotDeviceAgent] 软件ID: 5.2.1.3 软件名称: AzureIotDeviceAgent GUID: 41896670-FDC3-43AC-8DA3-81BA4833EAF 版本: 1.4.1.RC2 发布日期: 2021.10.08 开发商: JIHUAN 说明: 微软Azure-IoT设备代理服务
[2021.10.10 07:46:45.741] [INFO] [AzureIotDeviceAgent] 加载配置文件: /opt/scapeak/Azure/AzureIotDeviceAgent_Config.xml
[2021.10.10 07:46:45.741] [INFO] [AzureIotDeviceAgent] 配置文件读取完成
[2021.10.10 07:46:45.742] [INFO] [AzureIotDeviceAgent] 激活码不存在或无效
[2021.10.10 07:46:45.742] [INFO] [AzureIotDeviceAgent] 软件运行指示灯控制
[2021.10.10 07:46:45.743] [INFO] [AzureIotDeviceAgent] 软件启动提示模式...
[2021.10.10 07:46:45.747] [INFO] [UAService] UAService服务启动...
[2021.10.10 07:46:45.751] [INFO] [UAService] OPCUA服务连接成功, 终结点: opc.tcp://localhost:4840
[2021.10.10 07:46:45.847] [INFO] [AzureIotDeviceAgent] 启动IoT Hub连接...
[2021.10.10 07:46:45.847] [INFO] [AzureIoTHub] Connect...
[2021.10.10 07:46:45.859] [INFO] [AzureIoTHub] Provisioning API Version: 1.8.0
[2021.10.10 07:46:46.019] [INFO] [AzureIoTHub] Provisioning Status: PROV_DEVICE_REG_STATUS_CONNECTED
[2021.10.10 07:46:46.264] [INFO] [AzureIoTHub] Provisioning Status: PROV_DEVICE_REG_STATUS_ASSIGNING
[2021.10.10 07:46:49.054] [INFO] [AzureIoTHub] 设备注册信息: iothub_uri=SCAPEAK-PI.azure-devices.cn, device_id=quick-single-dps-demo
[2021.10.10 07:46:49.863] [INFO] [AzureIoTHub] IoT HubClient_SetMessageCallback...successful.
[2021.10.10 07:46:49.863] [INFO] [AzureIoTHub] Waiting for C2D methods ...
[2021.10.10 07:46:49.863] [INFO] [AzureIotDeviceAgent] IoT Hub连接成功
[2021.10.10 07:46:50.191] [INFO] [AzureIoTHub] The device client is connected to iothub
[2021.10.10 07:46:50.864] [INFO] [AzureIotDeviceAgent] 预配置遥测服务启动...
[2021.10.10 07:46:50.865] [INFO] [AzureIotDeviceAgent] 创建TOPIC服务完成:Topic1
[2021.10.10 07:46:50.865] [INFO] [AzureIotDeviceAgent] 运行中...
[2021.10.10 07:46:50.865] [INFO] [Topic1] TOPIC服务运行...
  
```

This device has access to **iothub_uri=SCAPEAK-PI.azure-devices.cn** successfully!



Microsoft Azure 由世纪互联运营 搜索资源、服务和文档(G+/)

主页 > dpsdev >

quick-single-dps-demo 注册详细信息

保存 刷新 重新生成密钥

可以查看和更新单个注册的注册详细信息或删除以前预配的设备注册记录

注册状态

状态: assigned

已分配的中心: SCAPEAK-PI.azure-devices.cn

设备 ID: quick-single-dps-demo

上次分配时间: Sun Oct 10 2021 15:46:46 GMT+0800 (中国标准时间)

[删除注册](#)

身份验证类型

机制: 对称密钥

主键

辅助密钥

3 Integrates with Azure IoT Explorer

Launch **Azure IoT Explorer** and access your *IoT Hub* with **iothubowner's primary connection string**.

Azure IoT Explorer (preview)

File Edit View Window Help

Azure IoT Explorer (preview)

[Home](#) > IoT hubs

IoT hubs

IoT Plug and Play Settings

Notification Center

+ Add connection

SCAPEAK-PI

Host name

SCAPEAK-PI.azure-devices.cn

Shared access policy name

iothubowner

Shared access policy key

.....

Connection String

.....

→ View devices in this hub

Find assigned device named **quick-single-dps-demo**.

Azure IoT Explorer (preview)

File Edit View Window Help

Azure IoT Explorer (preview)

Notifications

Settings

[Home](#) > [SCAPEAK-PI](#) > [Devices](#) > quick-single-dps-demo > Device identity

Save Manage keys

Device identity

Device ID

quick-single-dps-demo

Primary key

.....

Secondary key

.....

Primary connection string

.....

Secondary connection string

.....

Connection string with SAS token

Connect this device to IoT hub

Enable

Telemetry **quick-single-dps-demo** and cat its D2C message.

Azure IoT Explorer (preview) Notifications Settings

Home > SCAPEAK-PI > Devices > quick-single-dps-demo > Telemetry

☒ Stop
 ☐ Show system properties

Telemetry ⓘ

Consumer group ⓘ \$Default

Specify enqueue time ⓘ

☐ No

Use built-in event hub

☒ Yes

Receiving events... ⓘ

```

{
  "body": {
    "FIELD_DT1": "2021.10.13 05:35:24.830",
    "FIELD_FIXEDSTRING2": "SCA-IOT2050"
  },
  "enqueueTime": "Wed Oct 13 2021 13:35:24 GMT+0800 (中国标准时间)",
  "properties": {
    "DeviceId": "quick-single-dps-demo"
  }
}
    
```

Wed Oct 13 2021 13:35:23 GMT+0800 (中国标准时间):

```

{
  "body": {
    "FIELD_DT1": "2021.10.13 05:35:23.829",
    "FIELD_FIXEDSTRING2": "SCA-IOT2050"
  },
  "enqueueTime": "Wed Oct 13 2021 13:35:23 GMT+0800 (中国标准时间)",
  "properties": {
    "DeviceId": "quick-single-dps-demo"
  }
}
    
```

Here are D2C message and reported continuously.

This step run on 2021-10-13 13:35 GMT+0800 (standard time of China).

Support & Service

声明

本手册所述功能 由 **无锡凌顶科技有限公司** 提供服务与技术支持。

技术支持团队

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