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CONFIGURATION GUIDE

How to Connect *dataFEED OPC Suite* to *Azure* Cloud

dataFEED®

Industrial

Table of Contents

1. Preliminary Remarks

This configuration guide describes how to configure ***dataFEED OPC Suite*** as *Azure IoT Hub* device and thus to tranfer shopfloor data to the *Azure* cloud using the MQTT standard.

NOTE:

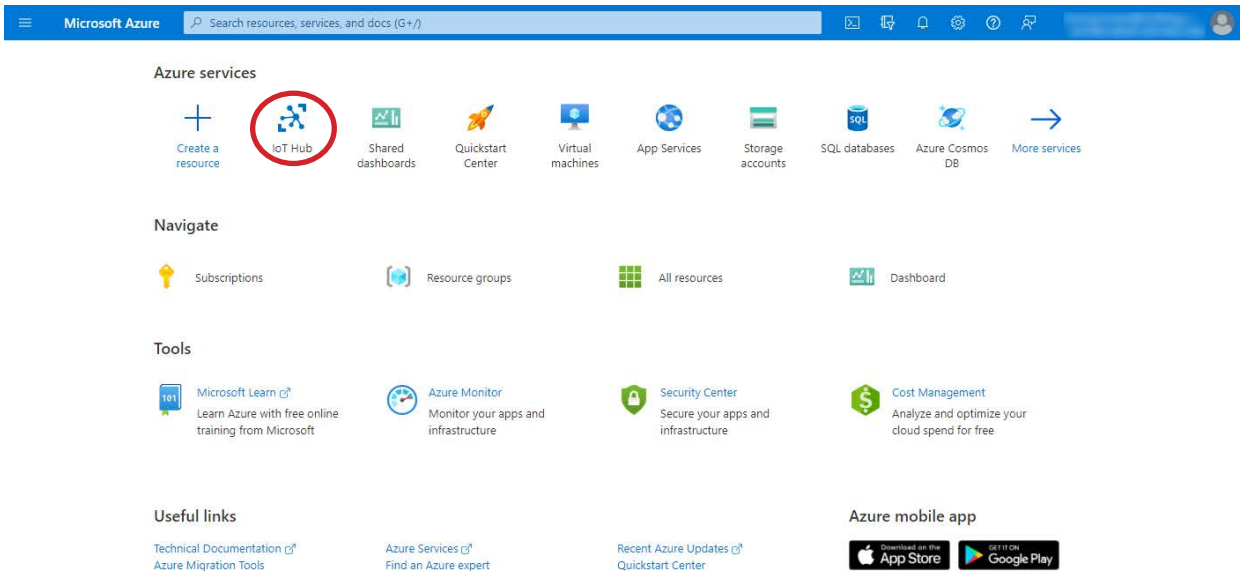
Additional ***dataFEED OPC Suite*** information can be found at the according product web pages.

dataFEED OPC UA Suite Extended: https://industrial.softing.com/products/opc-opc-ua-software-platform/opc-server-middleware/datafeed-opc-suite-extended.html

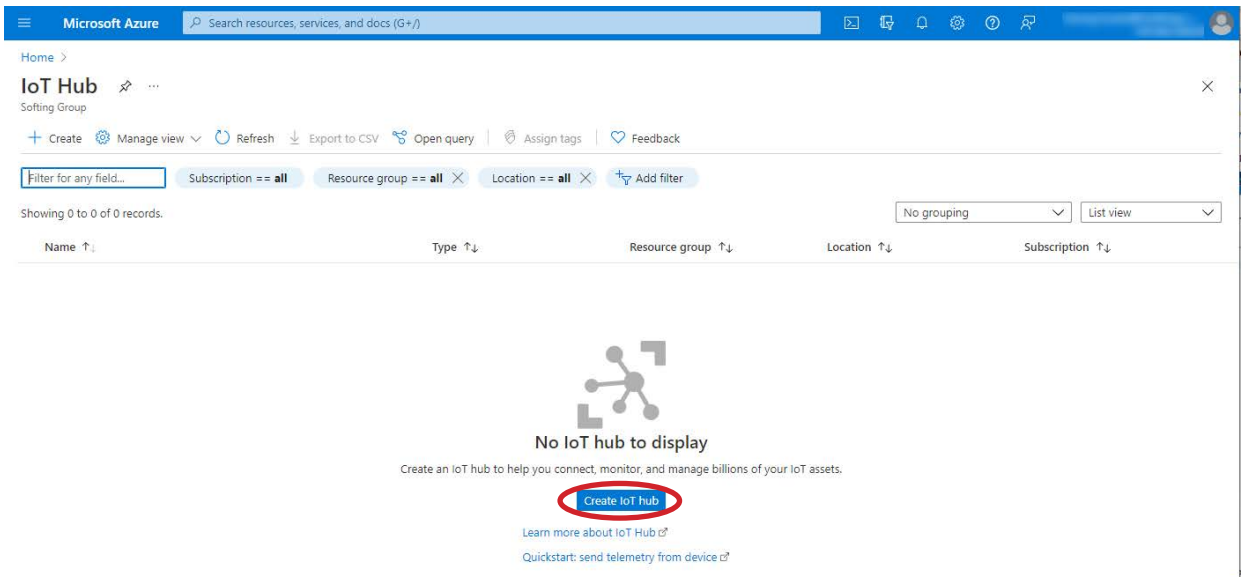
dataFEED OPC UA Suite Base: https://industrial.softing.com/products/opc-opc-ua-software-platform/opc-server-middleware/datafeed-opc-suite-base.html

2. Configure *Azure IoT Hub* Device for Data Exchange With Softing Gateways

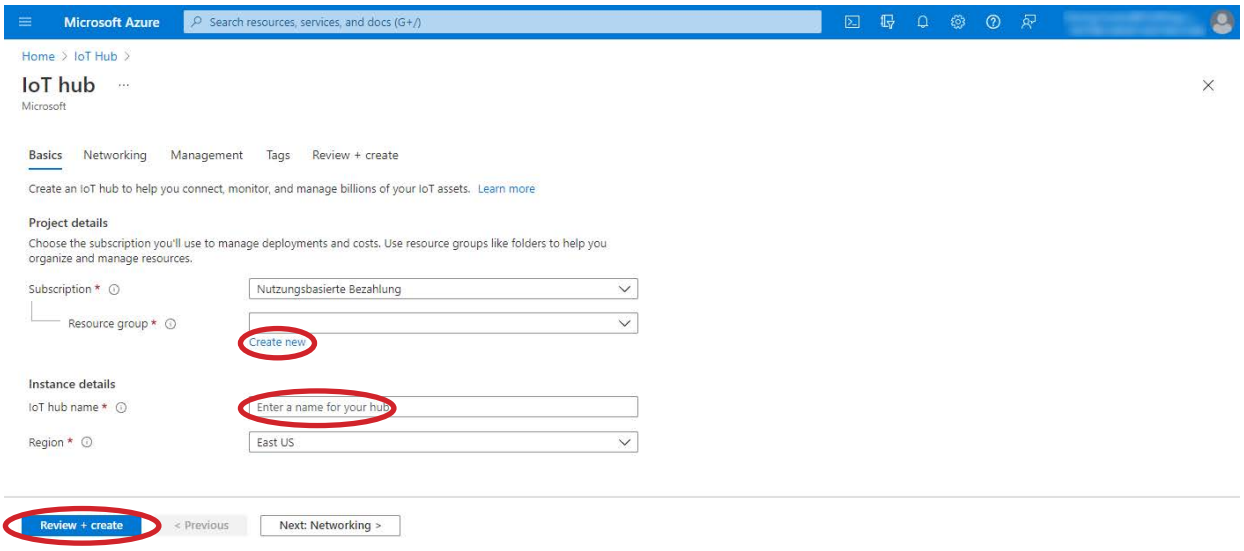
- Set up an Azure account, if not yet available
- Download latest *Azure IoT Explorer* version from https://github.com/Azure/azure-iot-explorer/releases and install it, if not yet available
- Open *Azure* portal in Internet Browser using https://portal.azure.com/ URL and sign in



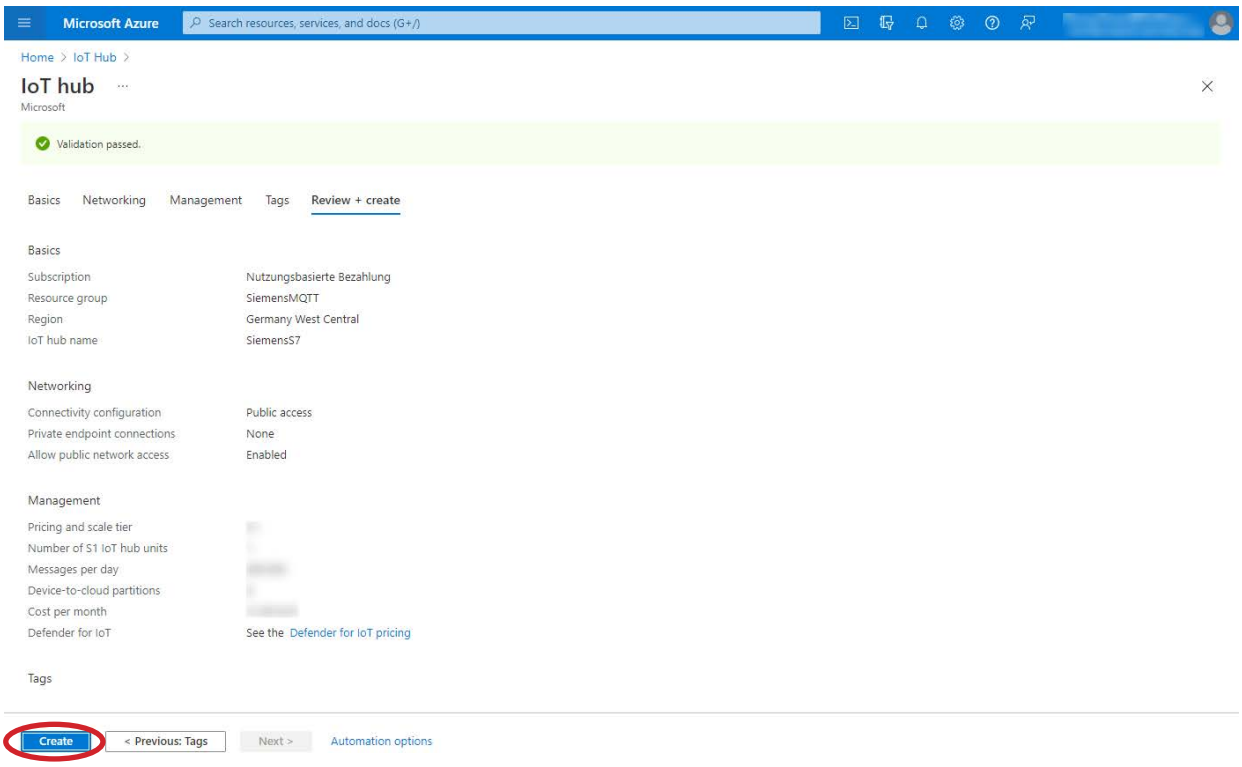
- Press *IoT Hub* button



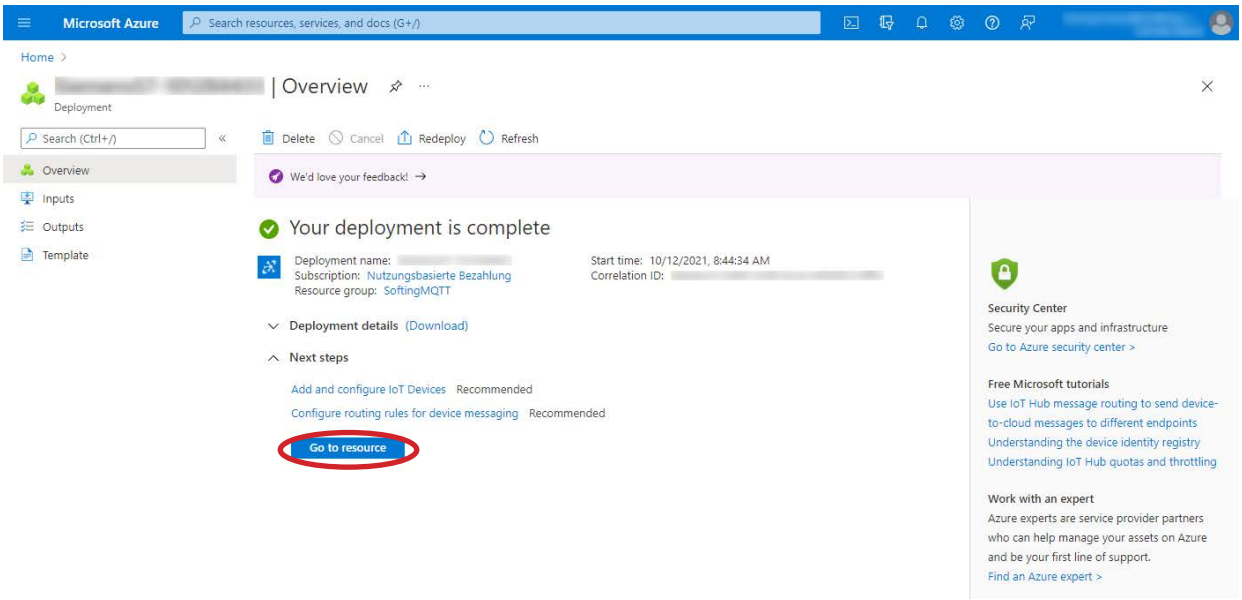
- Press *Create IoT Hub* button



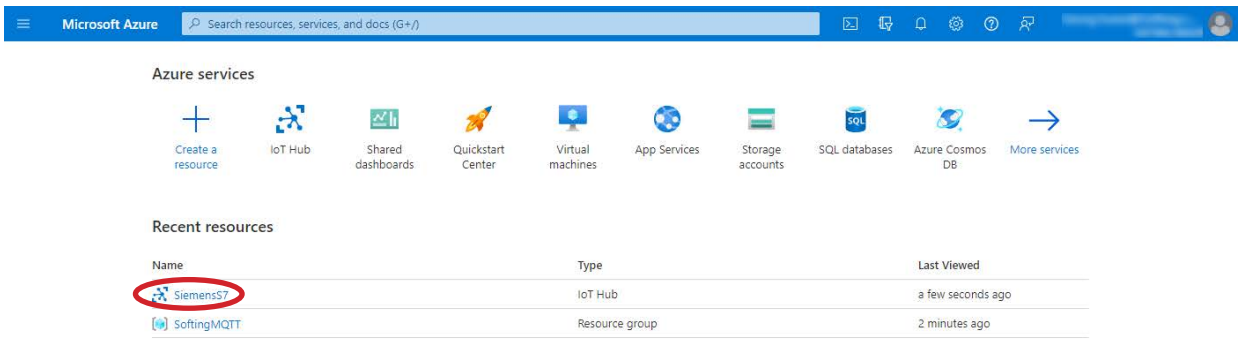
- Click *Create new* link and enter resource group name
- Enter name in *IoT hub name* field
- Press *Review + create* button



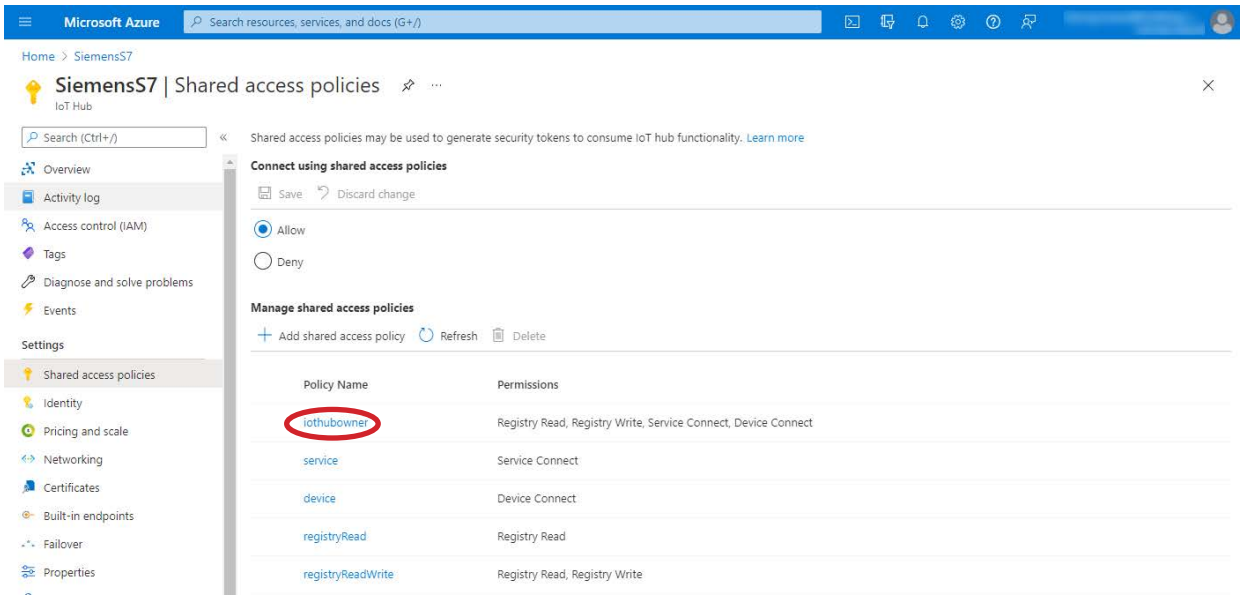
- Press *Create* button



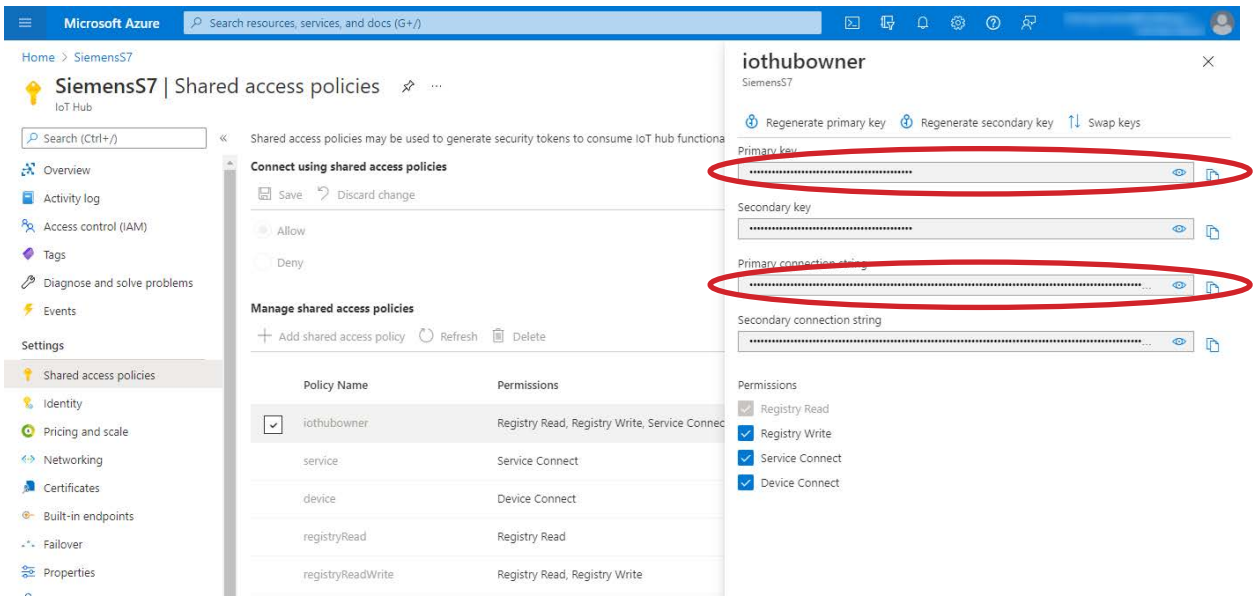
- Press *Go to resource* button



- Click link of created IoT hub
- Navigate to *Settings/Shared access policies*

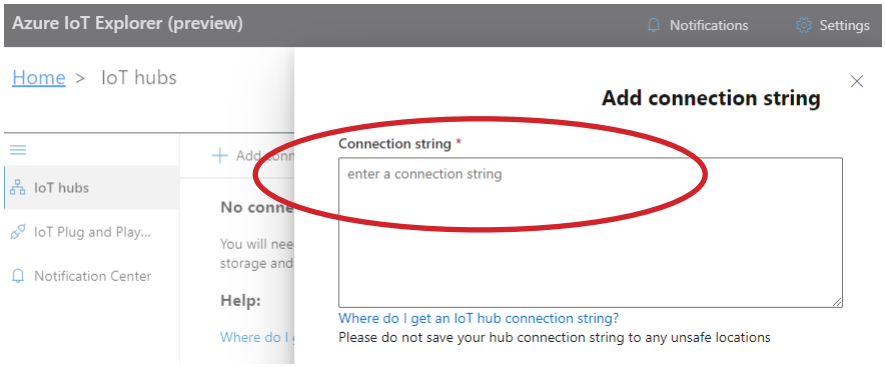


- Click *iothubowner* link

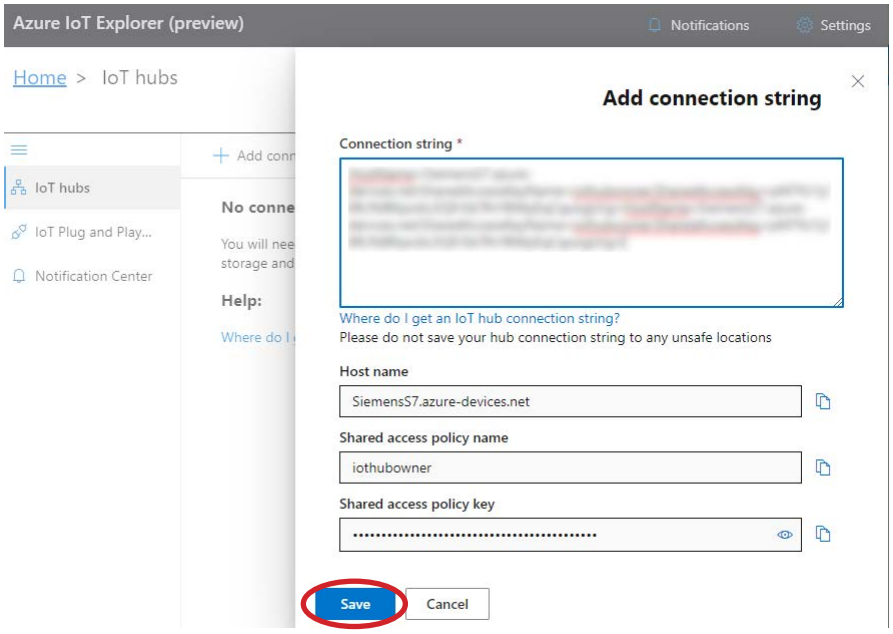


- Copy *Primary key*
- Copy *Primary connection string*

- Start *Azure IoT Explorer*
- Click *Add connection* link

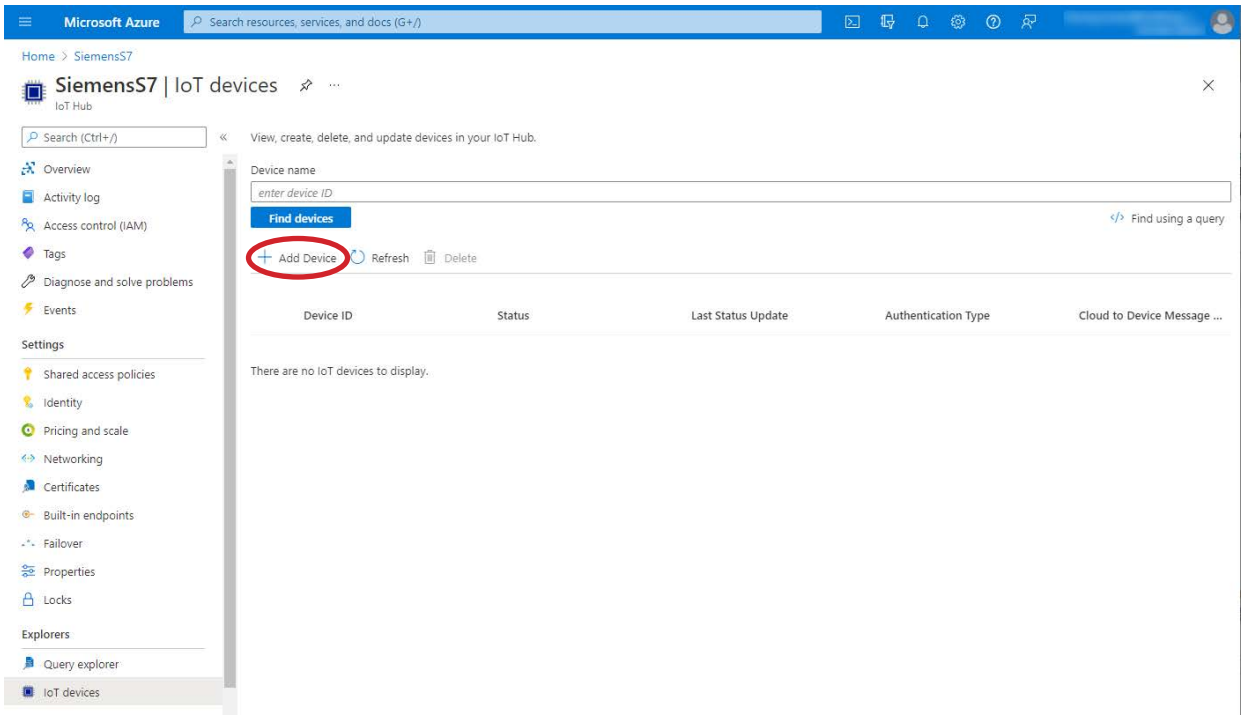


- Paste *Primary connection string* from *Azure* portal to *Connection string* field

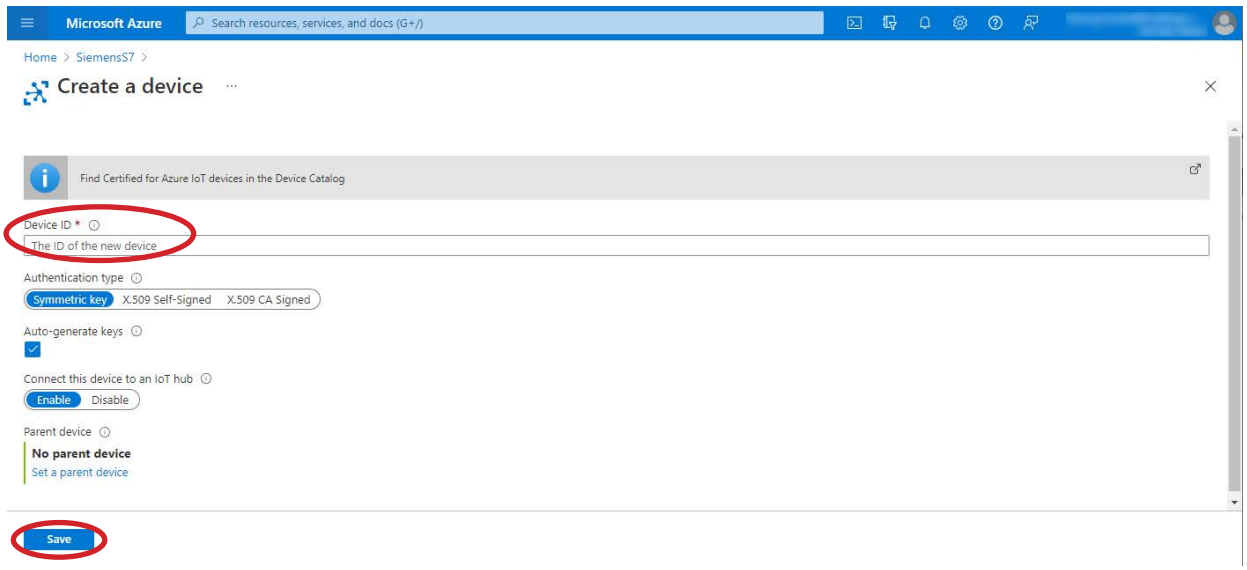


- Press *Save* button

- In *Azure* portal navigate to *Explorers/IoT devices*

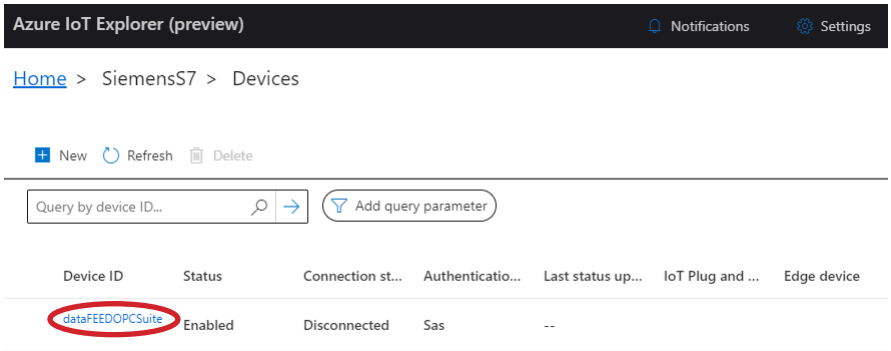


- Click *Add Device* link

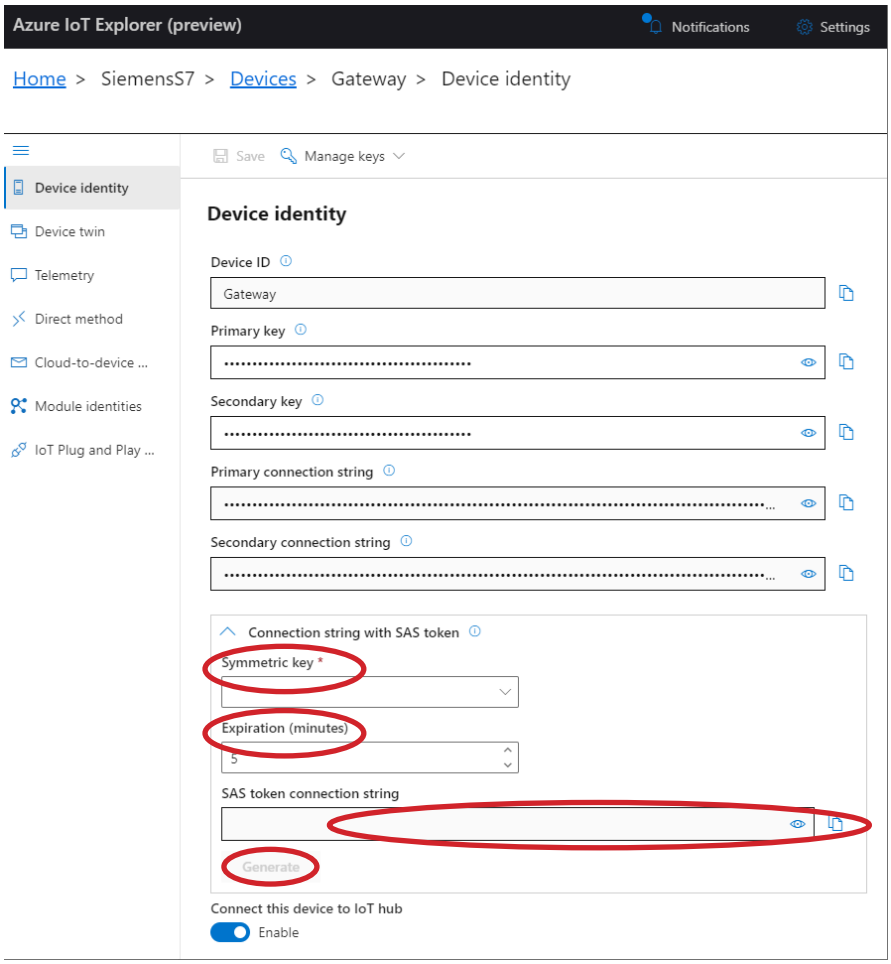


- Enter unique device name in *Device ID* field
- Do not modify default settings for rest of the fields
- Press *Save* button
- At *Explorers/IoT devices* page click *Refresh* link
  The added device is shown.

- In *Azure IoT Explorer* click *Refresh* link
  The added device is shown.



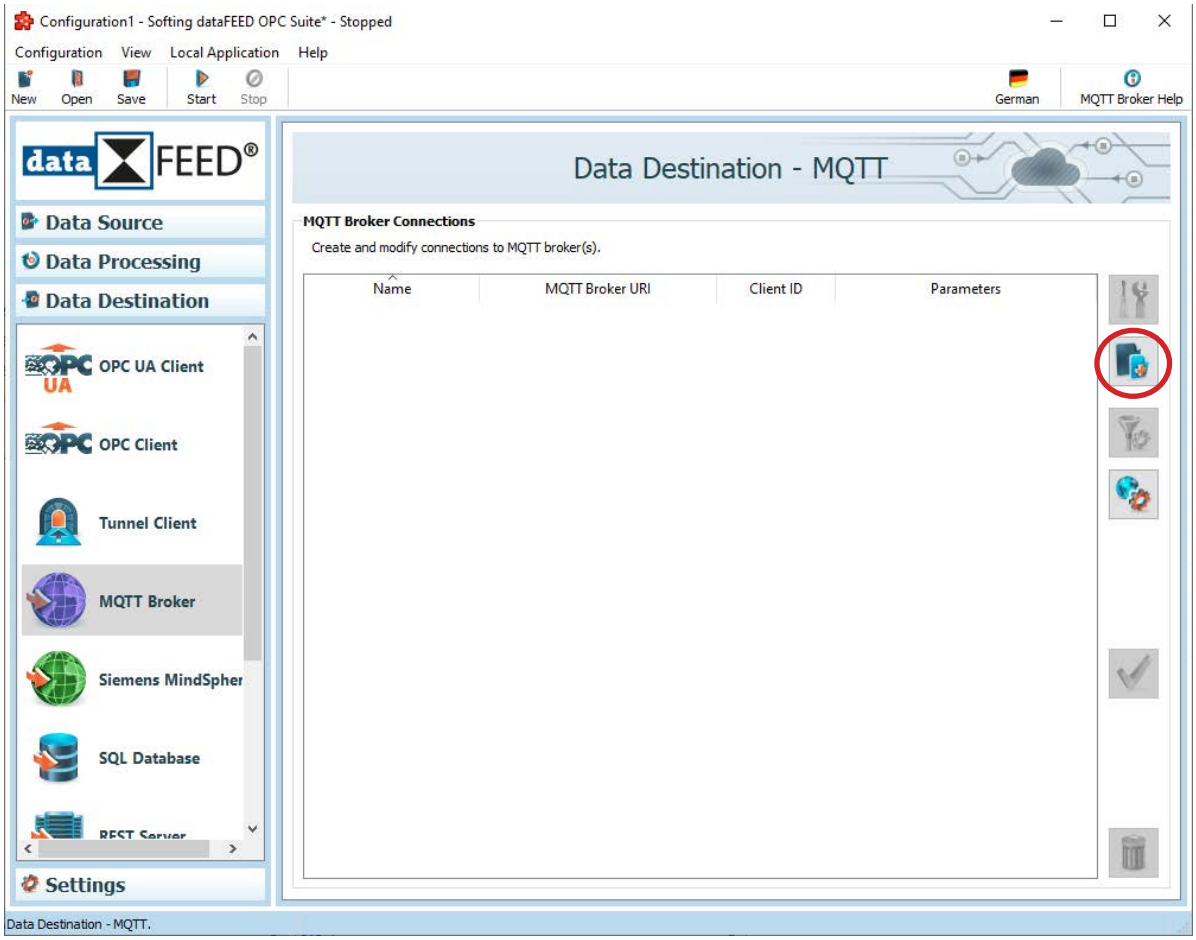
- Click link of added device
- Navigate to *Device Identity*
- Expand *Connection string with SAS token*



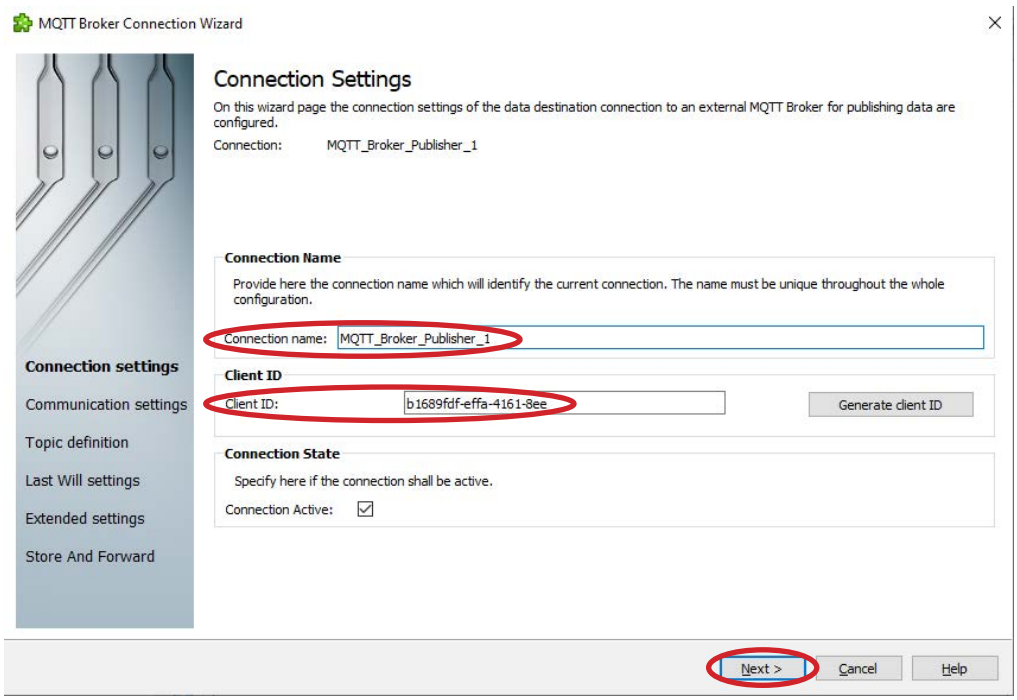
- Choose *Primary key* in *Symmetric key* field
- Enter connection string expiration time in *Expiration (minutes)* field
  (e.g. *525,600*, representing *1* year)
- Press *Generate* button
- Copy generated *SAS token connection string*

3. Configure *dataFEED OPC Suite*

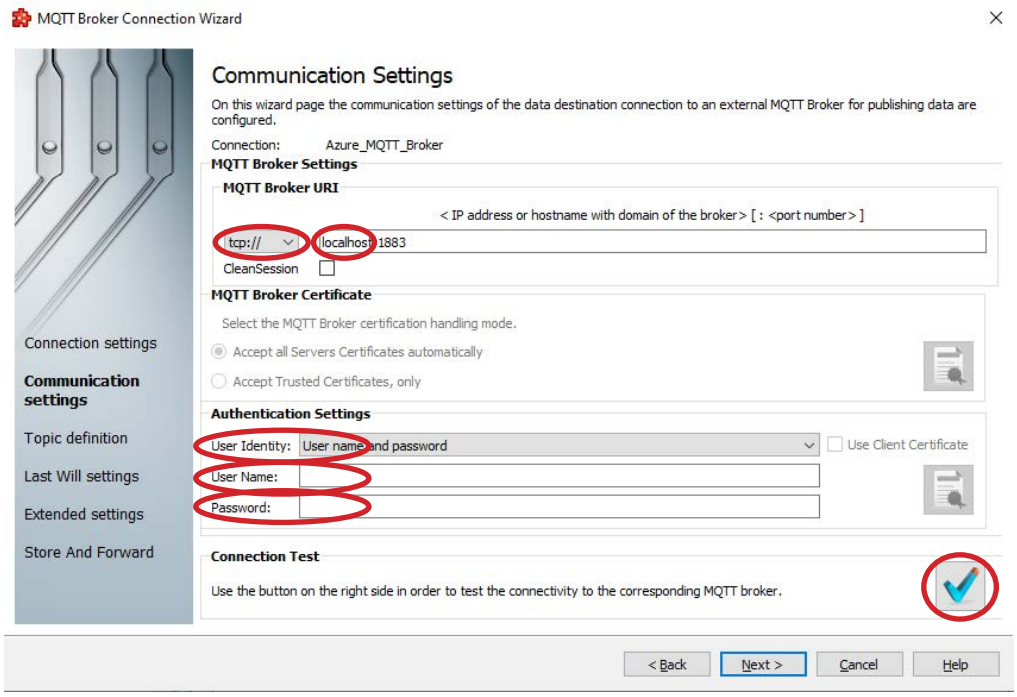
- Open ***dataFEED OPC Suite*** configurator
- Navigate to *Data Destination/MQTT Broker*



- Press  (*Add a new data source*) button



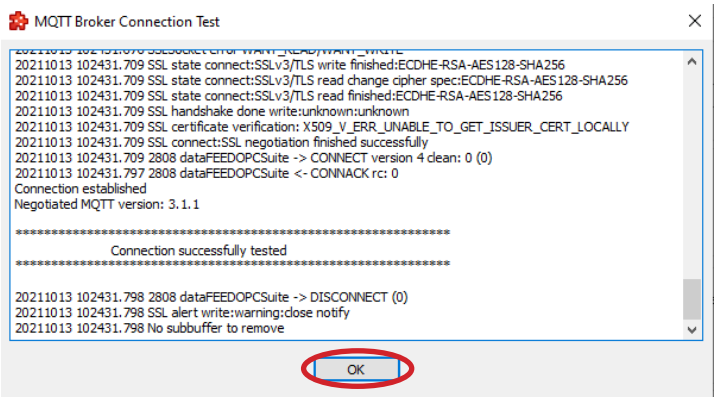
- Enter unique connection name in *Connection Name* field
- Enter device name as defined in *Azure* portal in *Client ID* field
- Press *Next >* button



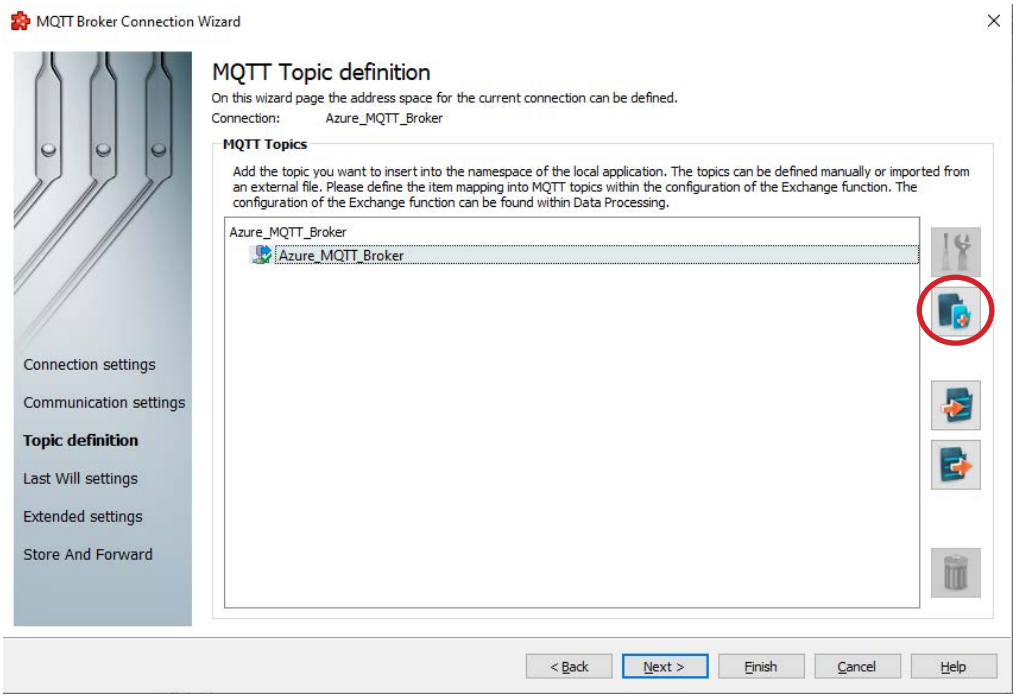
- Select *ssl://* protocol
- Enter hostname as prefix in
  < IP address or hostname with domain of the broker > [: <port number>] field

  NOTE:

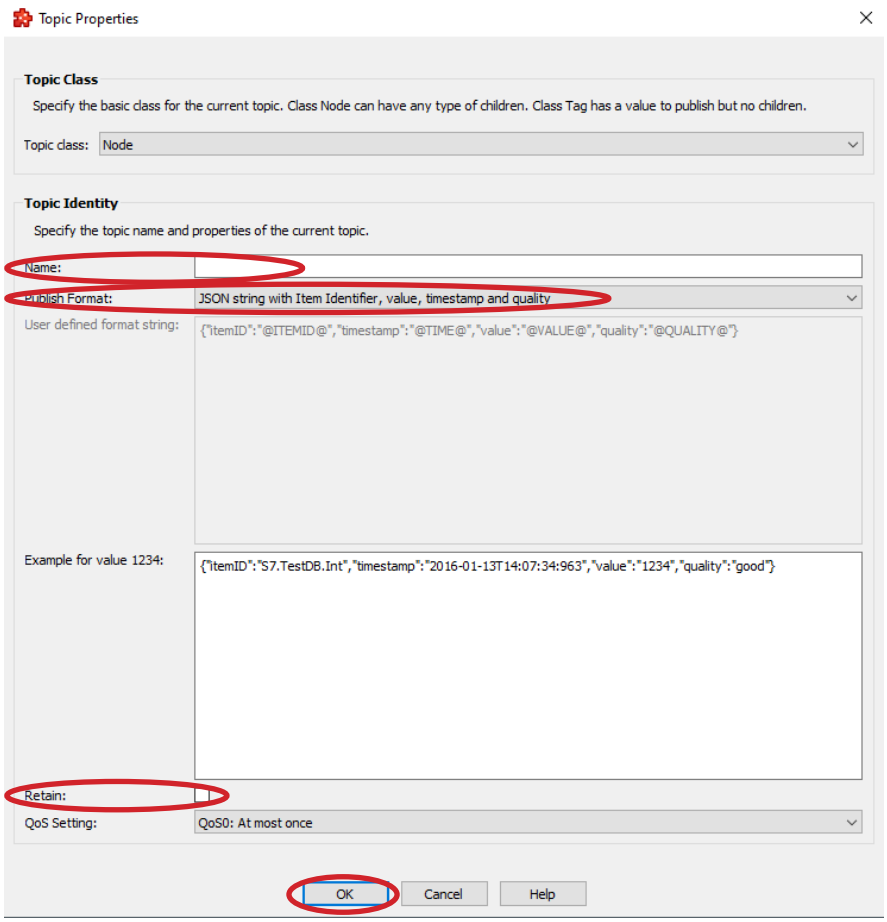
  The hostname can be copied from the SAS token connection string as generated in *Azure IoT Explorer*. (The hostname is the string after the *HostName=* identifier, terminated by *;* character.)
- Select *User name and password* in User Identity field
- Enter string consisting of hostname, the character */* and the device ID in *User Name* field
- Copy complete string after *SharedAccessSignature=* identifier from SAS token connection string as generated in *Azure IoT Explorer* in *Password* field
- Press  (*Connection test for the selected data destination*) button



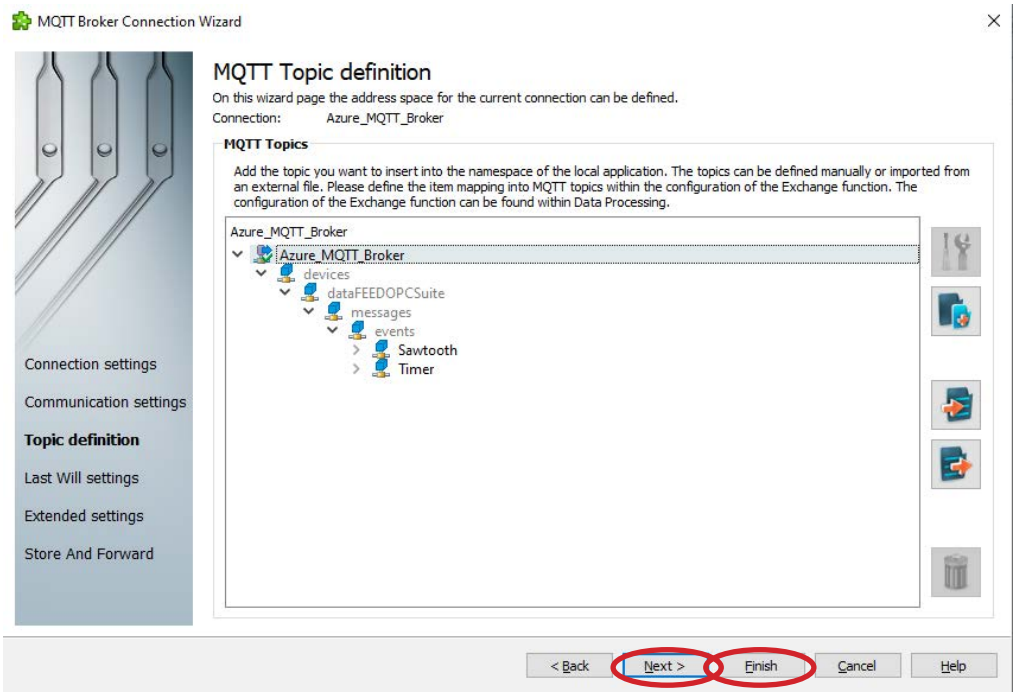
- Press *OK* button
- Press *Next >* button at *Communication Settings* page



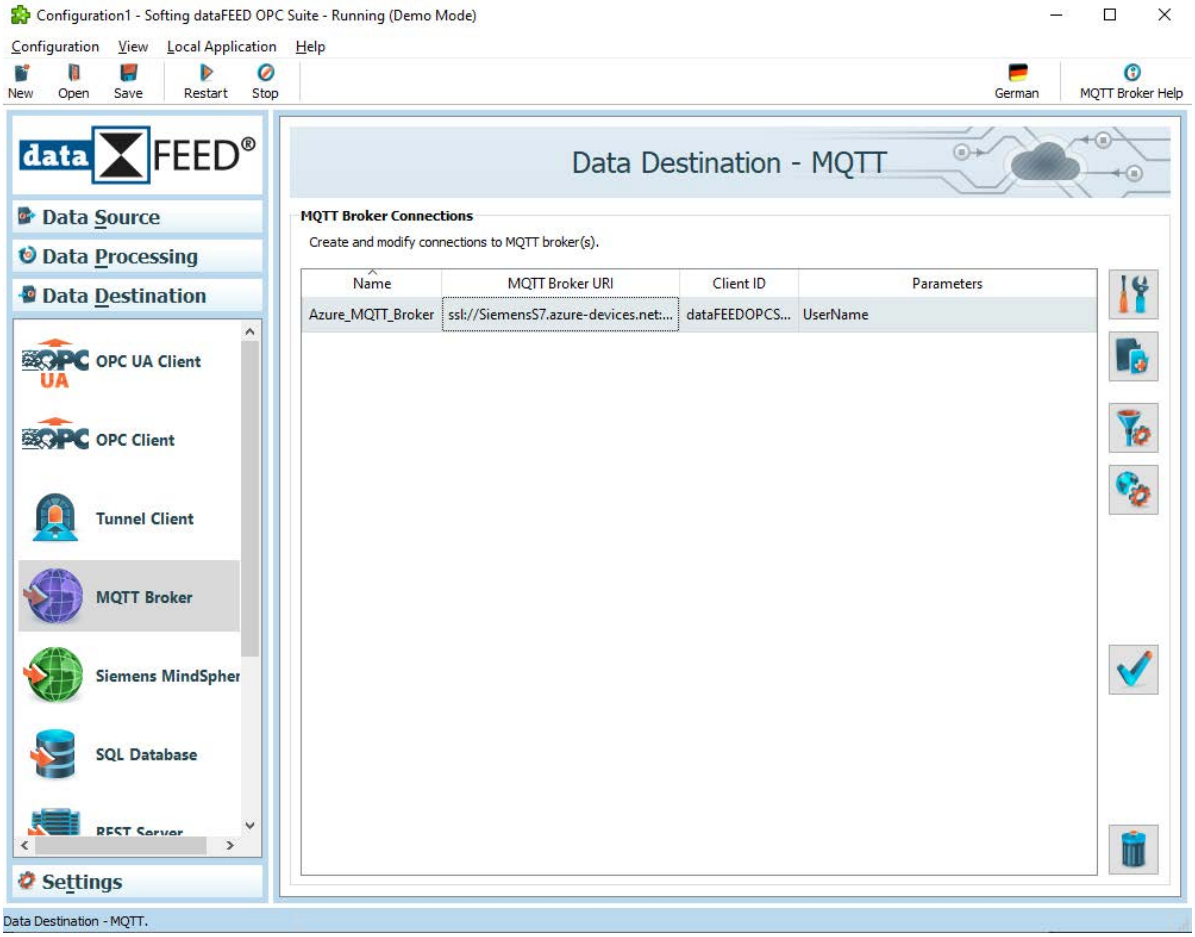
- Define *devices/<device ID>/messages/events* hierarchy for MQTT connection by pressing  (*Add a new item*) button
- Press  (*Add a new item*) button to add all items to be used in the MQTT connection with *Azure* cloud



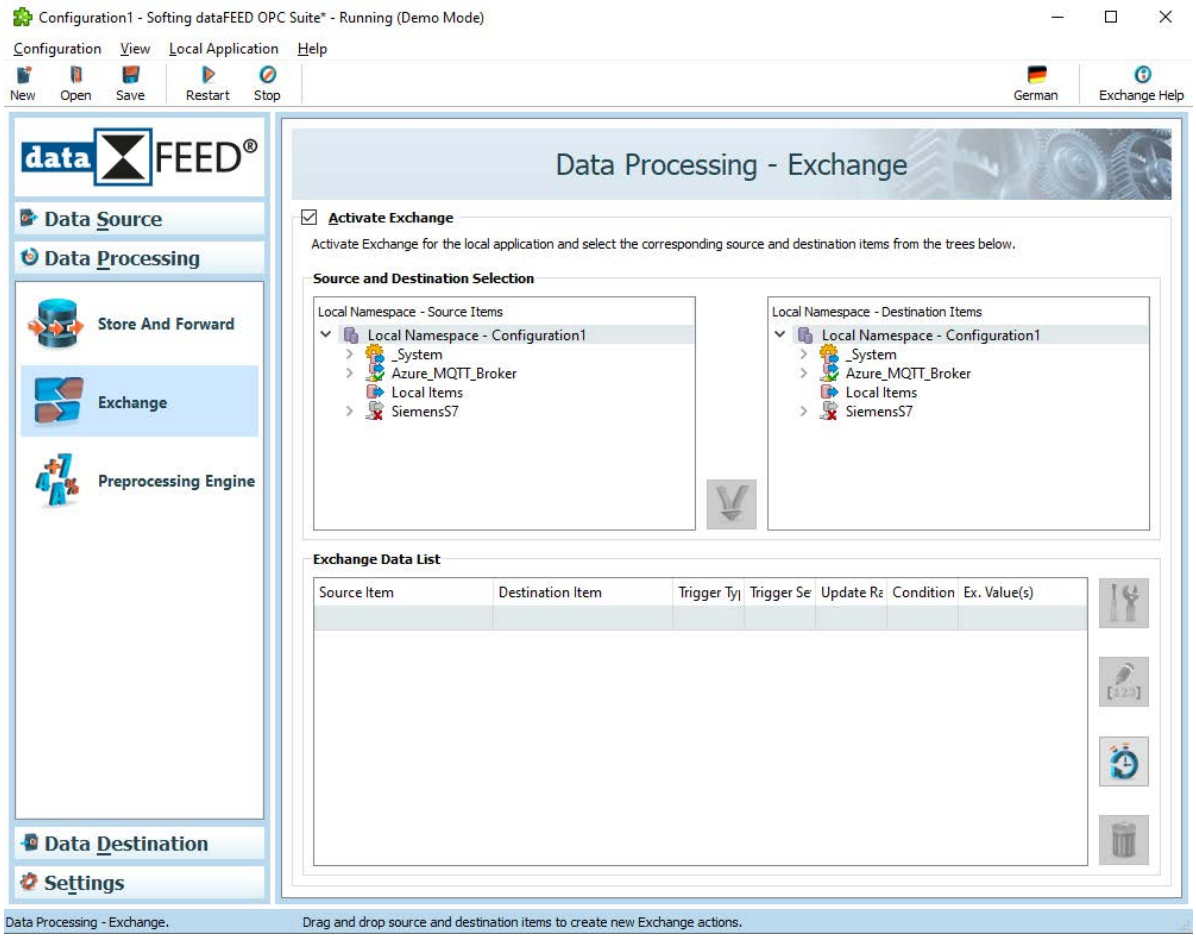
- Enter item name in *Name* field
- Select JSON string in *Publish Format* field
- Deactivate *Retain* checkbox
- Press *OK* button
-
- Select ssl:// protocol
- Enter hostname as prefix in
- < IP address or hostname with domain of the broker > [: <port number>] field
- NOTE:
- The hostname can be copied from the SAS token connection string as generated in Azure IoT Explorer.
- (The hostname is the string after the HostName= identifier, terminated by the ; character.)
- Select User name and password in User Identity field
- Enter string consisting of hostname, the character / and the device ID in User Name field
- Copy complete string after SharedAccessSignature= identifier from the SAS token connection string as generated in Azure IoT Explorer in Password field
- Press (Connection test for the selected data destination) button



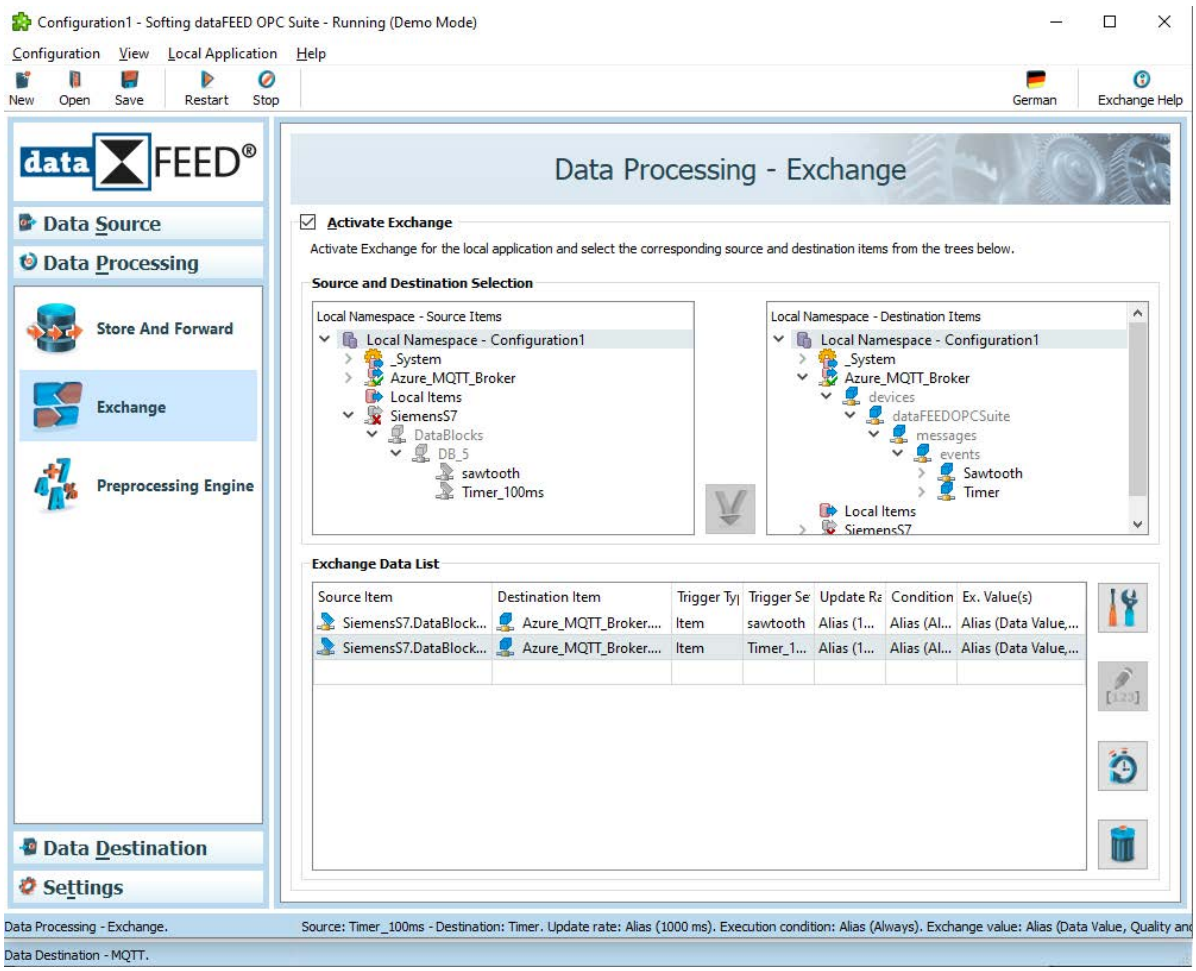
- Once all items are configured press *Next >* button to proceed to the next MQTT Broker settings or press *Finish* button to finish the MQTT Broker configuration.



- Navigate to *Data Processing/Exchange*



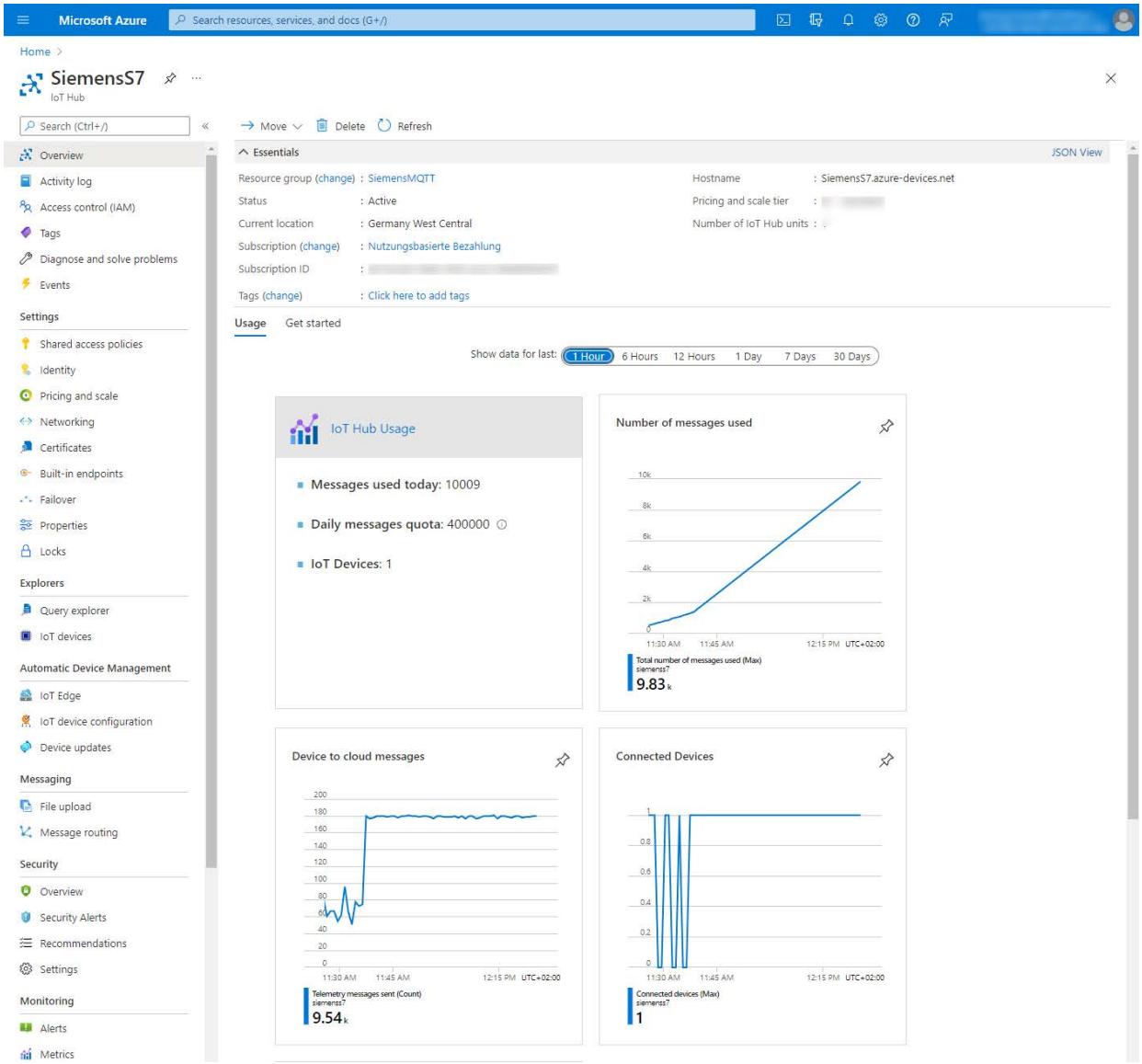
- Define mapping of source items (shopfloor data) to destination items (configured MQTT Broker items) by selecting the appropriate combinations in the *Local Namespace - Source Items* tree and the *Local Namespace - Destination Items* tree and afterwards by pressing the  (*Use the selecetd items as a new Exchange action*) button



- Press Save (*Save*) button to store ***dataFEED OPC Suite*** configuration
- Press Start (*Start*) button to start ***dataFEED OPC Suite***

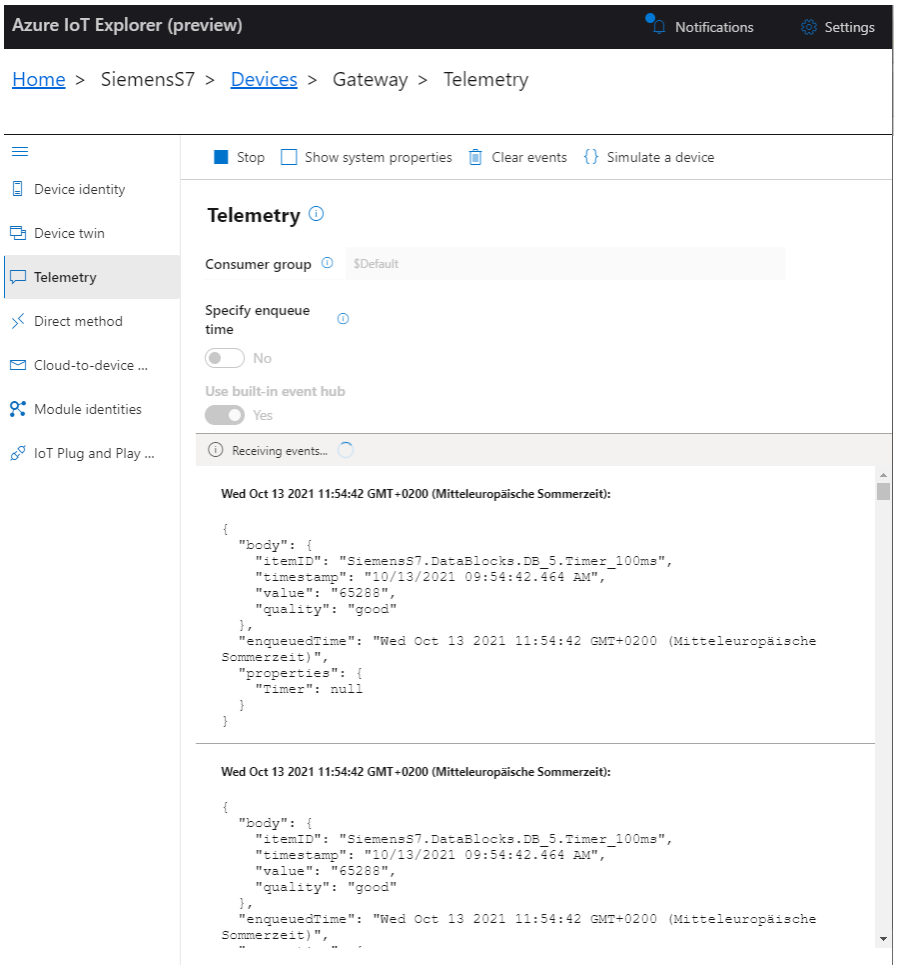
4. Test MQTT Connection and Data Exchange

- In *Azure* portal navigate to *Overview*



Various MQTT message KPIs are shown for the connected device.

- In *Azure IoT Explorer* portal navigate to *Devices/Telemetry*



The data values of the connected device are shown in JSON format.

NOTE:

The given URLs have last been checked on Jan 18, 2022.

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