Azure connectivity: Get started document

platform	device	language
Proprietary	DIRIS Digiware M-xx	Not required
	DIRIS Digiware D-xx	

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Introduction

About this document

This document describes how to connect the SOCOMEC DIRIS Digiware M/D gateways with Azure IoT. This multi-step process includes:

- Configuring Azure IoT Hub
- Registering your IoT device
- Provisioning your devices on Device Provisioning service (DPS)
- Configuring Azure IoT connectivity on device

Step 1: Prerequisites

You should have the following items ready before beginning the process:

- Setup your IoT hub
- Provision your device over DPS

The DIRIS Digiware M/D gateways integrate a firmware natively compatible with Azure connectivity. There is no need to compile source code or libraries, and configuration can be done easily through the integrated web server.

Step 2: Prepare your DIRIS Digiware M/D gateway

System wiring

Please refers to the user manual of the device to get all the details of commissioning. You can also look at Configure your DIRIS Digiware system video.

A Before enabling the Azure connectivity from your gateway, please verify that all devices are correctly connected and configured (you can check it with the diagnostic page of the integrated web server).



Configuration with DPS (Device Provisioning Service)

1 The configuration through DPS is provided in the Socomec gateways to ensure the complete compatibility with Azure platform.

The gateways can also be declared directly in the Azure IOTHub without need of DPS. In that case the provisioning mode "Manual" should be selected in the integrated web server (see below).

DPS with SAS Token authentication

First step is to retrieve the parameters from your DPS instance.

- ID Scope of the DPS
- Registration ID of the enrollment
- Primary key of the enrollment

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Home >		
Device Provisioning Service	D x	~
₽ Search (Ctrl+/)	\ll \rightarrow Move \checkmark (i) Delete (i)	Refresh
Overview		JSON View
 Activity log 	Resource group (Move)	: IOTDEV_CTD
Access control (IAM)	Status	: Active
Tags	Location	: West Europe
Diagnose and solve problems	Subscription (Move)	: CSP Azure IOT
	Subscription ID	: 1adff130-f187-49a4-94ce-f88a07c24
Settings	Service endpoint	: ProvisioningCTD.azure-devices-provi
Quick Start	Global device endpoint	: global.azure-devices-provisioning.net
Shared access policies	ID scope	: 0ne0031AC78
흤 Linked IoT hubs	Pricing and scale ber	: 51
🔎 Certificates	Tags (Edit)	: Click here to add tags
Manage enrollments	Quick Links	
A Manage allocation policy	1	
Networking	Azure IoT Hub Device Pro	visioning Service Documentation
Properties		
🔒 Locks	Learn more about IoT Hut	b Device Provisioning Service
Monitoring		
Alerts	Device Provisioning conce	epts Cf
ma Metrics		
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Home > ProvisioningCTD >		
Enrollment Details	2	×
🔚 Save 🖒 Refresh < Regenerate keys		
		Â
You can view and update the enrollment details for an individual enrollment or remove the registration record for a previously provisioned device		
Registration Status		
Status: unassigned		
Assigned hub: -		
Device ID: -		
Last assigned: -		
Authentication Type Mechanism: Symmetric Key		
Primary Key	0	
Secondary Key		

Then you can go into the integrated web server of the Socomec's gateway to enter the settings accordingly. Log in the page with profile "Adminis trator" or "Cyber", then go in Settings>Protocols>Data Push.

Azure Cloud connection	× <							
Enable Cloud								
Provisioning mode	Provisioning service							
Id Scope	0 0ne0031AC78							
Registration Id	• registration-id							
Authentication	 Symmetric key 							
Primary key	o Ø							
Synchronisation status								
State	Not started							
Synchronize								

Validate settings and click on "Synchronize" to start the synchronisation process with the DPS.

The push of telemetry data into the Azure IoT Hub will start automatically, according to the devices capabilities (energy meters, power measurements, ...).

DPS with X.509 certificate authentication

The configuration is similar than SAS Token authentication. Get the parameters from your DPS and set the Socomec's device parameters.

- ID Scope of the DPS
- Registration ID of the enrollment
- Certificate and private key generated from the certificate/key of the enrollment

Step 3: Integration with Azure IoT Explorer

The Socomec gateways are compatible with Azure IoT Explorer. However, there is no "Direct method" or "Cloud to Device" capabilities on these gateways.

1 Please refers to Azure IoT Explorer documentation to get all details about this software.

Connect Azure IoT Explorer to the Azure IOTHub

Bit Mer Window Help Azure IoT Explorer (preview) Home > IoT hubs IoT hubs Interview Interview </th
Azure IoT Explorer (preview) Notifications Settings Home > IoT hubs + Add connection & IoT hubs + Add connection & IoT hubs TEST-CTD © IoT Flug and Play Settings Host name © Notification Center TEST-CTD.
Home > IoT hubs A lot hubs A lot hubs A lot Nubs A
Add connection Add connection Add connection Add connection Inthis Inthis Introduction Interfaction Center
Ist Thubs Ist Thug and Play Settings TEST-CTD Notification Center Host name TEST-CTD.azure-devices.net
Interface Interface Interface Notification Center Interface Notification Center
Notification Center Host name TEST-CTD.azure-devices.net
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Shared access policy name
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Connection String
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ightarrow View devices in this hub

Acure IoT Explorer (preview) Elit [dit Verw Window Help						- D X
Azure IoT Explorer (preview)					Notifications	Settings
Home > TEST-CTD > Devices						
New 🕐 Refresh 🛞 Delete						
Query by device ID	,2 → (7 Add	query parameter				
Device ID	Status	Connection state	Authentication type	Last status update time	IoT Plug and	Edge device
MITO_test_cartificate	Enabled	Disconnected	CertificateAuthority			
M70_test_centificate2	Enabled	Disconnected	CertificateAuthority			
070,9CR	Enabled	Disconnected	Sas			
MT0_DEV_TM8_SAS	Enabled	Disconnected	Sas			
registration-id	Enabled	Disconnected	Sas			
dig12	Enabled	Disconnected	SelfSigned			

View telemetry messages

After selecting a device, it is possible to see all the messages send by the device to the IOTHub.

Ele (dt View Window Help	- 5	^
Azure IoT Explorer (preview)	Notifications ③ Sett	ngs
Home > TEST-CTD > Devices	> registration-id > Telemetry	
=	▷ Start □ Show system properties	_
Device identity	Telemetry ()	
Device twin		
Telemetry	Consumer group 🔍 strengt	
3 ⁵ Direct method	Specify engueue time ····································	
Cloud-to-device message	Use built-in event hub	
9. Module identities	115	
⁶⁷ IoT Plug and Play components	<pre>{ Toodyns { Typessed:: Type</pre>	

Step 4: Connect to Azure IoT Central

The Socomec gateways are fully compatible with Azure IoT Central.

After creating an application into Azure IOT Central, get the connection parameters from Administration>Device connection:

- ID Scope of the application
- Primary key from SAS-IoT-Devices enrollment group of the application

×socomec	Socomec Test	P Search for devices	o ? 🐉
-	Administration	< + New	
Dashboards	Your application	Device connection	
② Devices	Organizations	We use the Azure IoT Hub Device Provisioning Service (DPS) to register and connect devices. Learn more 🖬	
Device groups	Users	10 scope ()	
🖧 Rules	Roles	0ne0046588C	
😰 Analytics	Pricing	Auto-approve new devices ③	
D. Jobs	Device connection	On On	
App settings	Device file upload		
Cevice templates	API tokens	Enrollment groups	
Q Data export	Customize your application	Name Attestation type Created Group type	Certificate expirati
Administration	Customize help	SAS-IoT-Devices Shared access 12/20/2021 IoT devices	N/A
	Application template export	SAS-IoT-Edge-Devices Shared access 12/20/2021 IoT Edge devi	N/A
🗄 My apps			

Then you can go into the integrated web server of the Socomec's gateway to enter the settings accordingly. Validate settings and click on "Synch ronize" to start the synchronisation process with the application DPS.

The gateway and all devices connected to it will automatically appear in the **Devices** page:

2	socomec	Socomec Test	2	Search for device	1						0	?	3
-		Devices	< + New	ei Import							-	7	٥
63	Dashboards	Filter templates											
۲	Devices	All devices		All device	HS .								
ы	Device groups	Socomec Device		Device name	Device ID	Device status	D	evice template	Organization	Simulated			
4	Rules	Socomec Gateway		0.30	68cd4e80-8a2	Provisioned	54	comec Devi	Socomec Test	No			
kź	Analytics			-35	b4253070-911_	Provisioned	s	ocomec Devi	Socomec Test	No			
D.	Jobs			0-10	68e06150-8a2	Provisioned	54	ocomec Devi	Socomec Test	No			
App	settings			M-70	45d71940-bda	Provisioned	s	ocomec Gat	Socomec Test	No			
6	Device templates			L-RHT	cf9ef00-ab11	Provisioned	s	ocomec Devi	Socomec Test	No			
9	Data export												
-4	Administration												
B	My apps												

The push of **telemetry** and **property** data into the Azure IoT Hub will start automatically, according to the devices capabilities (energy meters, power measurements, ...). The **device templates** are retrieved from the public space, so the data will be automatically decoded by Azure IOT Central application.

× socomec	Socomec Test	,P Search for devices			0 ?	-
-	🖉 Connect 🐞 Manage template 🗸 🎯 Manage d	evice ~		0	co 🕫	Υ.
Dashboards	Devices > Socomec Device > 1-35					
② Devices	- I-35					
Ld Device groups	Disconnected Last data received: 1/1	3/2022, 11/21/00 AM Status: Provisioned Organization: Socom	vec Test			
& Rotes	Raw data Mapped aliases					
😰 Analytics	Timestamp ; Message type	Event creation time Analogic alarm 1 Analogic alarm 2	Analogic alarm 3 Analogic alarm 4	Ea- Load 1	Ea- Load 2	
Da 2000	O > 1/13/2022.112 Telemetry					
App settings	() > 1/13/2022.112 Telemetry					
Device templates	() > 1/13/2022.112 Telemetry			100230000	101693000	
Q Data export	> 1/13/2022.112 Device disconn					
Administration	O > 1/13/2022.112 Telemetry					
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	> 1/13/2022, 11:1 Device discom					
🗄 My apps	() > 1/13/2022.11:1 Telemetry					

You can now customize the application with dashboards, analytics, etc...

Step 5: Additional Information

The Socomec's gateway send the message in JSON format. The complete description is available on demand, for any information please contact Socomec's support team.

Step 6 : Additional Links

Please refer to the below link for additional information for Plug and Play

- Manage cloud device messaging with Azure-IoT-Explorer
- Configure to connect to IoT Hub
- How to use IoT Explorer to interact with the device