

A man in a light blue shirt is seen from the side, holding a tablet. He is in a factory environment with various industrial machines and equipment in the background. Overlaid on the image are several digital graphics: a '24/7' icon with a circular arrow, a 'NEWS' section with a person icon, a 'Home' button, and a large 'Industry Online Support' text. There are also icons representing a folder, a network of people, and a gear. The overall theme is industrial digitalization and online support.

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# Configuring of the CloudConnect 7 with MindSphere

IoT / SIMATIC CC712 / CC716 / Cloud / MQTT

<https://support.industry.siemens.com/cs/ww/en/view/109766675>

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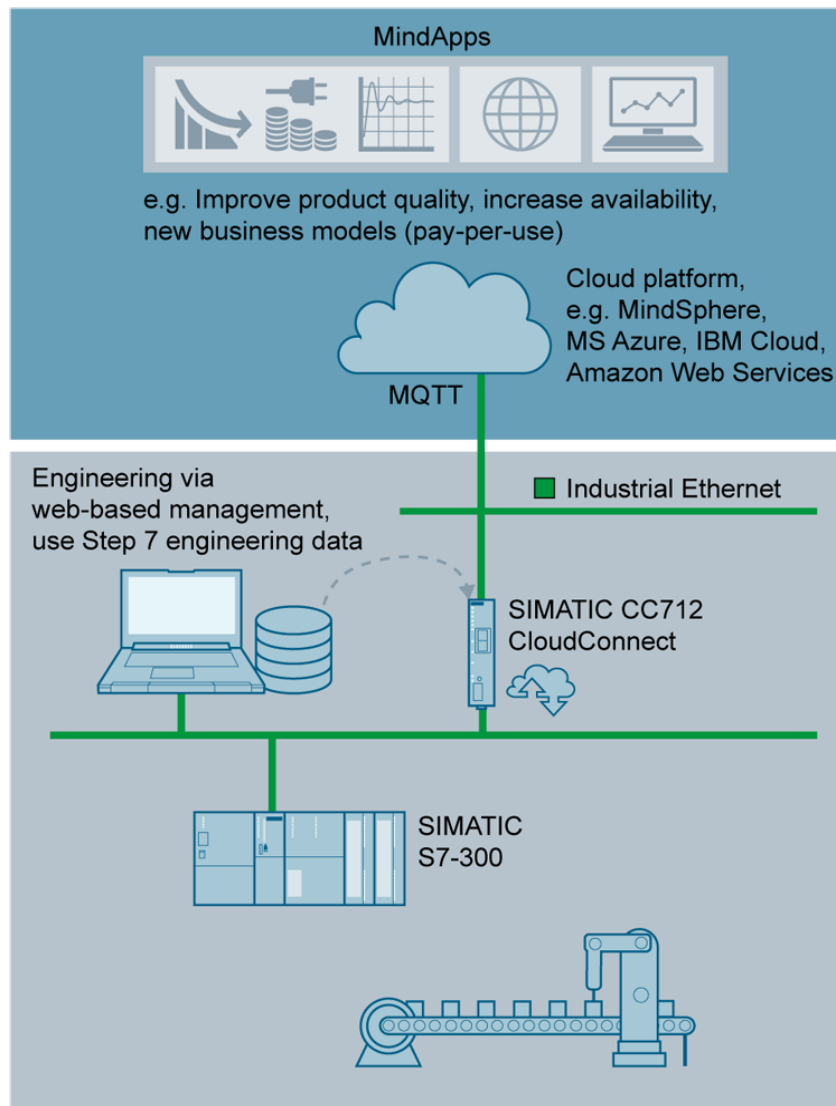
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# 1 Introduction

## 1.1 Overview

Cloud computing is an important prerequisite for exploiting the benefits of digitization in the industry. With the SIMATIC CloudConnect 7 Industrial IoT Gateways, existing systems can also be easily connected to a wide variety of cloud platforms that support the standardized MQTT protocol, such as MindSphere.

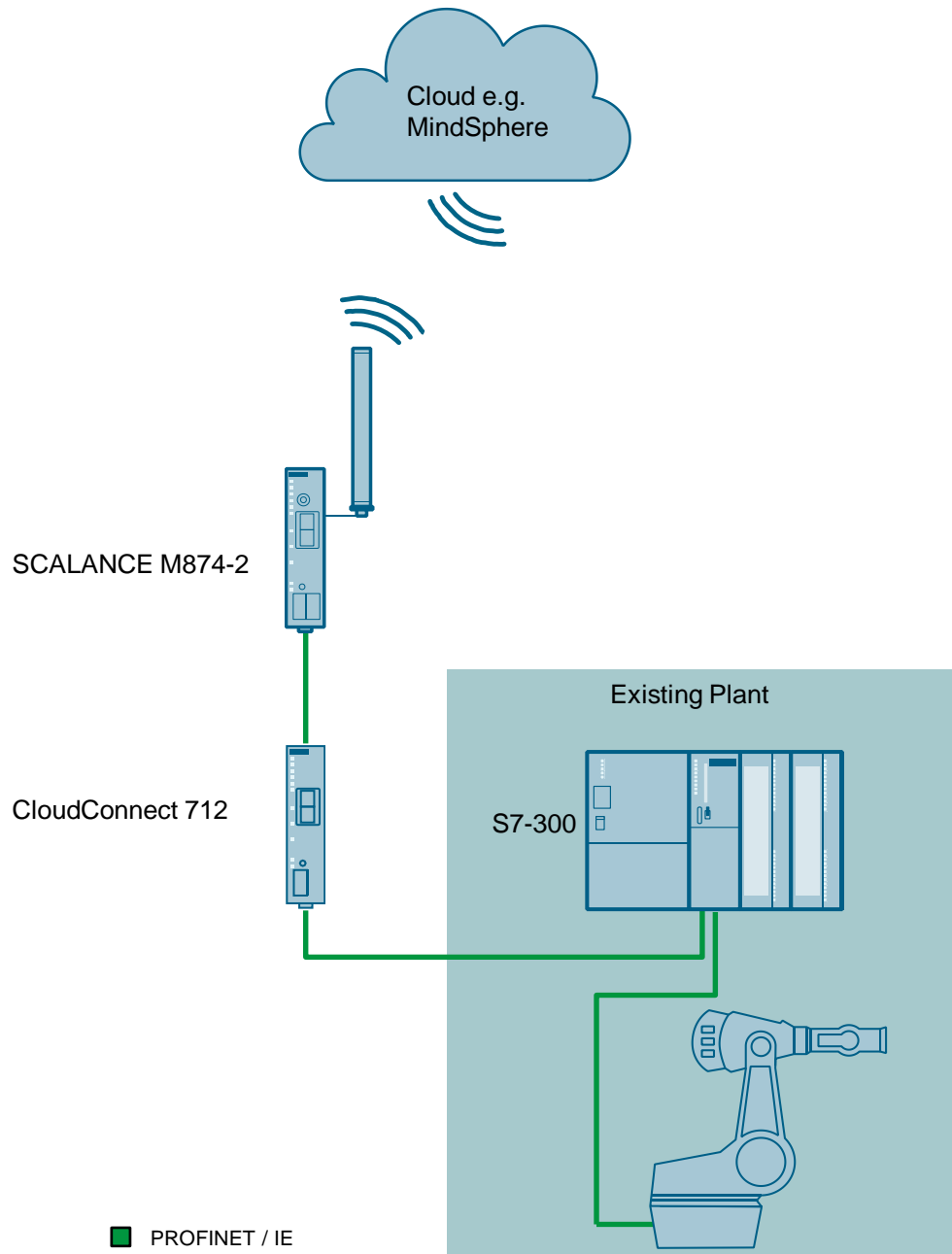
Figure 1-1



## 1.2 Applicative implementation

The application example shows you how you can connect new and existing systems to a cloud platform. In the example, a SIMATIC S7 300 CPU is connected to MindSphere via Ethernet. This is realized via the IoT Gateway SIMATIC CloudConnect 712. An existing project planning in STEP 7 does not have to be changed, since CloudConnect 712 is configured via its own Web Based Management.

Figure 1-2





## 1.3 Function principle of the CloudConnect 7 Gateway

The Industrial IoT Gateway SIMATIC CloudConnect 7 (SIMATIC CC7) makes it possible to read data easily and reliably from S7-based devices and transmits them to various cloud platforms such as MindSphere, Microsoft Azure or Amazon Web Services using the standardized MQTT protocol. The data management for existing S7 controllers can continue to be imported for quick and easy configuration.

SIMATIC CC712 enables the connection of a SIMATIC CPU via Industrial Ethernet using the S7 protocol.

SIMATIC CC716 enables the connection of up to seven SIMATIC CPUs via Industrial Ethernet or PROFIBUS/MPI.

The connection to Cloud systems via Internet or mobile communication can either be made via an existing network infrastructure or can be directly realized through the combination with the Industrial Ethernet routers SCALANCE M.

In addition, the data read by subordinate S7 stations via SIMATIC CC 7 can be made available as OPC UA variables (server). This enables standardized data exchange, e.g. with MES systems or HMIs and controllers from other manufacturers.

### Advantages

- IoT data transfer to cloud-based solutions for existing SIMATIC S7 systems (investment protection).
- Quick and fault-free configuration by data transfer from SIMATIC STEP 7 or TIA Portal
- Event-driven communication reduces the network load and the data exchange costs

### Note

MQTT is based on a publish/subscribe mechanism. Devices send messages to a topic (Publish). Devices can also create a subscription at the MQTT Broker and receive all subscribed messages forwarded by the broker. The subscriber function is not implemented up until FW 1.1.5.

## 1.4 Components used

The following hardware and software components were used to create this application example:

### Hardware components

Table 1-1

Components	Quantity	Article number	Note
SIMATIC CloudConnect CC712	1	6GK1411-1AC00	Firmware V1.1.5
SCALANCE M874-2	1	6GK5874-2AA00-2AA2	-
SIMATIC S7-300	1	9ES7 315-2EH14-0AB0	-

### Software components

Table 1-2

Components	Quantity	Article number	Note
STEP 7 V5.6 SP1	1	6ES7810-4CC11-0YA5	-
MindSphere	1		With the following apps: <ul style="list-style-type: none"> <li>• Asset Manager</li> <li>• IoT Extension</li> <li>• Fleetmanager</li> </ul>
Browsers	1	Any browser	Google Chrome was used.

This application example consists of the following components:

Table 1-3

Components	File name	Note
Documentation	109766675_CloudConnect_MindSphere_DOC_en_V20.pdf	This document
Project	109766675_CloudConnect_MindSphere_CODE_V20.zip	STEP 7 project and CC 7 project engineering file

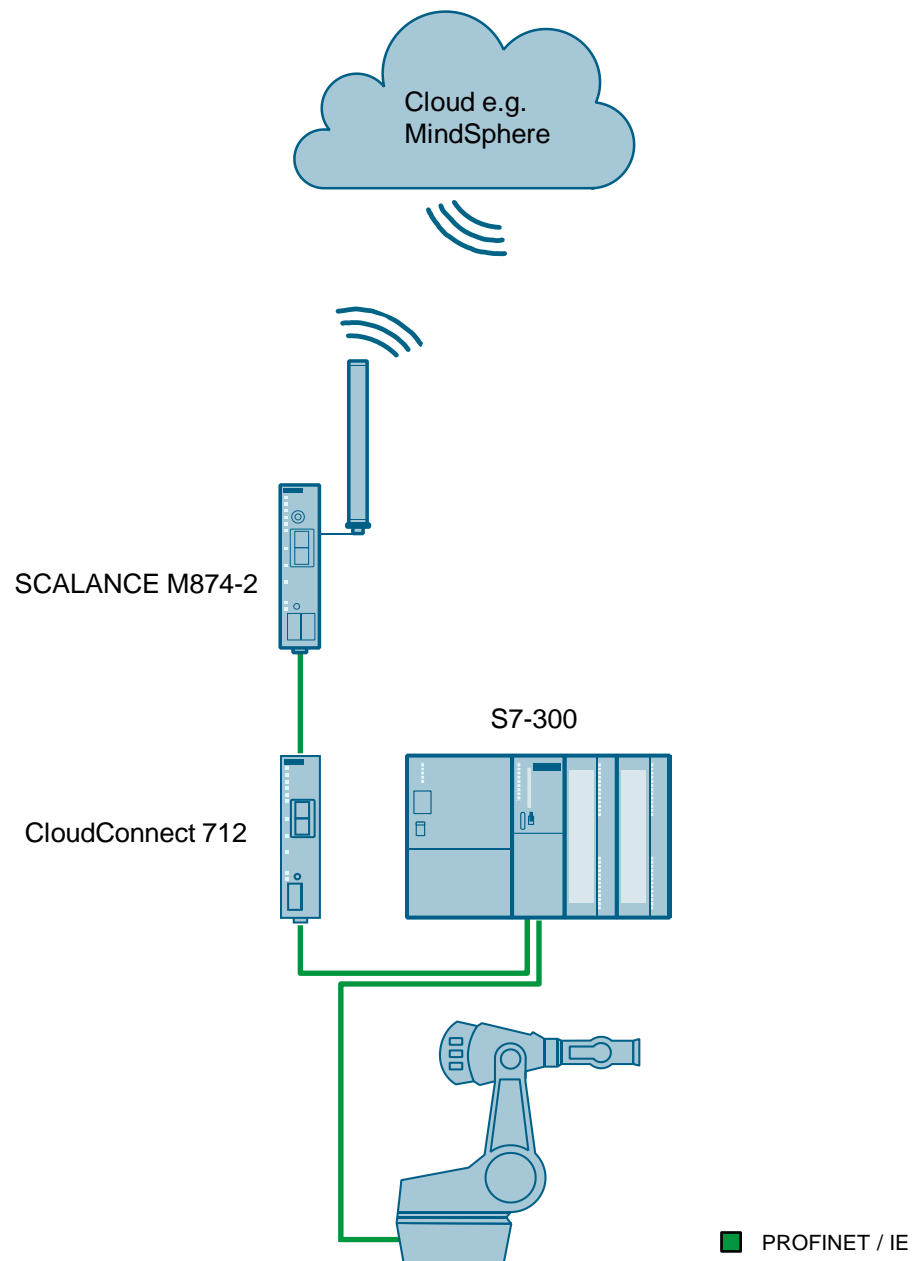
## 2 Engineering

This chapter shows you the required configuration steps. You will also find instructions on how to put the sample project into operation.

### 2.1 Hardware setup

In the following figure you can see the hardware structure used in the example:

Figure 2-1



The robot is simulated in a SIMATIC S7-300 CPU.



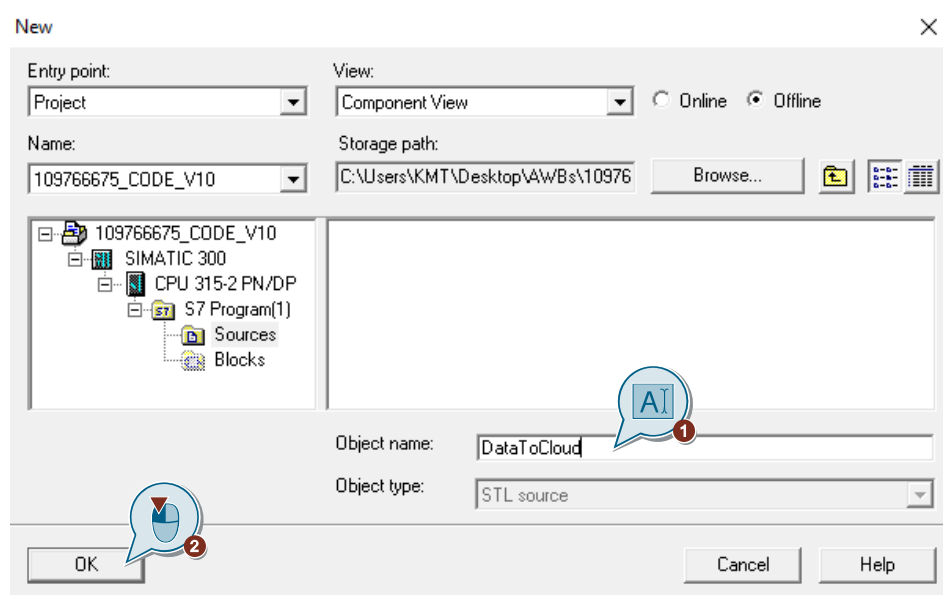
## 2.2 Configuration

In order to connect your existing system to a cloud service (e.g. MindSphere), project planning in Web Based Management of the CloudConnect 7 gateway and in the cloud used is necessary. You do not have to make any changes to your STEP 7 project if the "PUT/GET" function is activated in the controller. The data points sent to the cloud can be created manually or by importing an existing data block source.

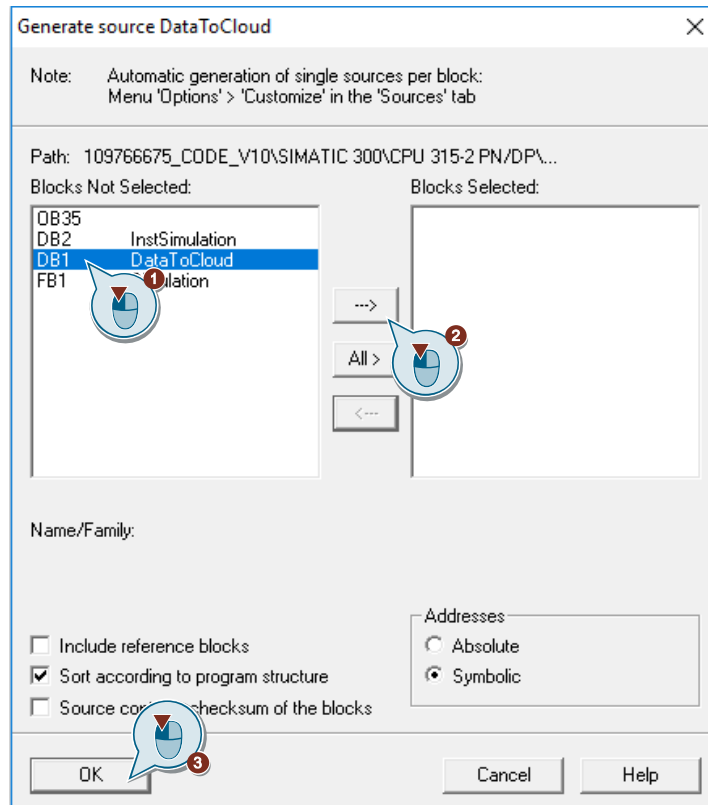
### 2.2.1 Export data block source from a STEP 7 project

This chapter describes how to create and export a data block source in SIMATIC Manager. The prerequisite for this is that you save/store the relevant data in data blocks. If you want to create the data points manually, you can also select other memory areas.

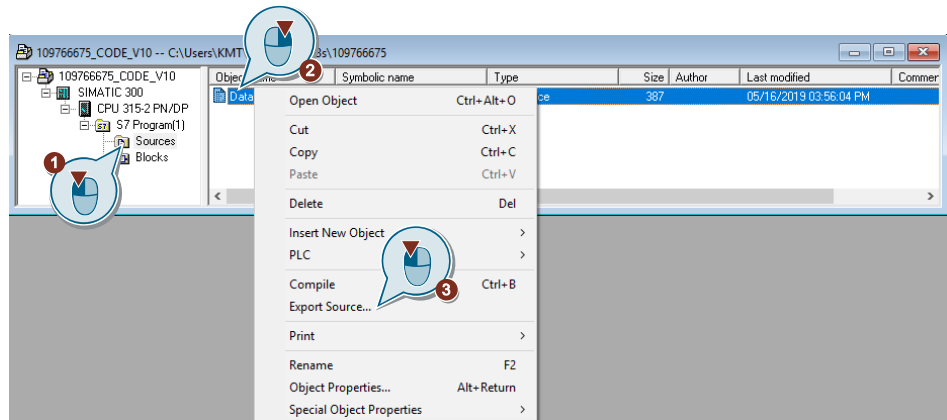
1. Open your STEP 7 project with SIMATIC Manager.
2. Open the editor, e.g. by opening a block.
3. Generate a block source via "File > Generate Source...".
4. Assign a meaningful name (e.g. the name of the data block) and confirm the dialog with "OK".



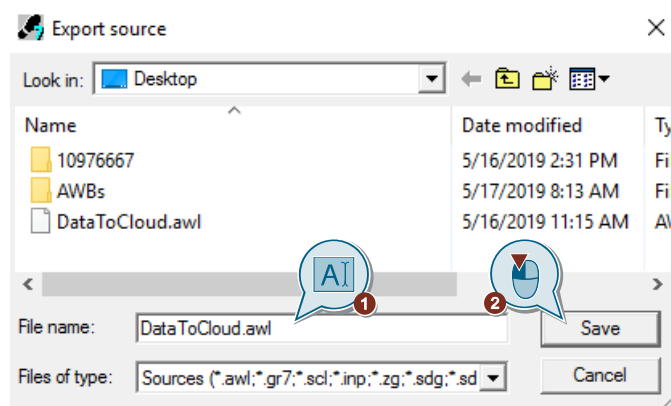
5. Select the data block that contains the data to be sent to the cloud. Click "OK" to confirm your selection.



6. Close the editor and switch to the "Sources" folder. Select the generated source and export it via "Export Source..."



7. Save the file to any location with the ".awl" extension.



The export of the data block as source has been completed.

### 2.2.2 Commissioning CloudConnect 7

CloudConnect 7 is configured using its own Web Based Management (WBM). No additional software is required.

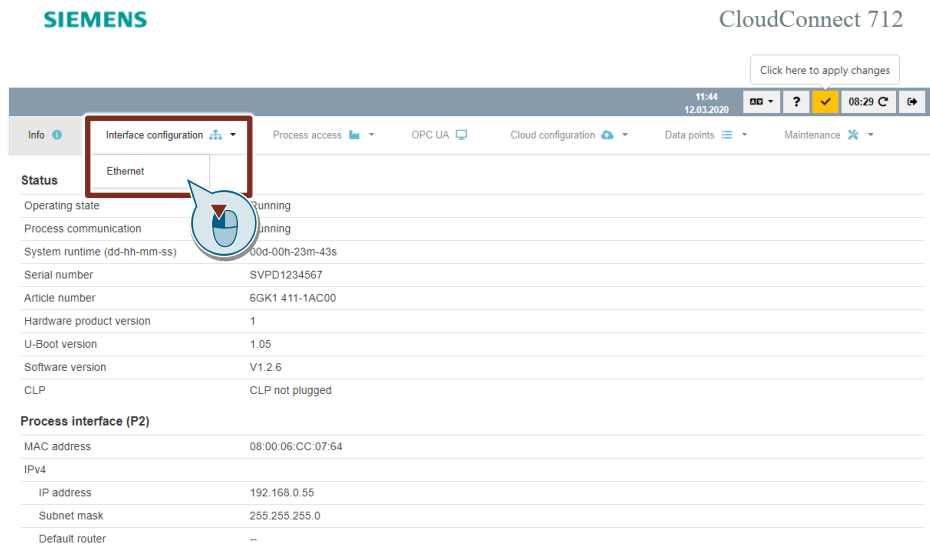
1. Connect your programming device to interface X2.
2. Open any web browser and enter the default IPv4 address in the address bar: "192.168.0.55".
3. Log on to the device with the default user data:
  - User Name: admin
  - Password: admin

After the first login, you will be prompted to change the access data.

## General settings

To make the general settings, proceed as follows:

1. Switch to the "Interface configuration" tab.



**SIEMENS** CloudConnect 712

Click here to apply changes

11:44 12.03.2020

Info **Interface configuration** Process access OPC UA Cloud configuration Data points Maintenance

**Ethernet**

**Status**

Operating state	Running
Process communication	Running
System runtime (dd-hh-mm-ss)	00d-00h-23m-43s
Serial number	SVPD1234567
Article number	6GK1 411-1AC00
Hardware product version	1
U-Boot version	1.05
Software version	V1.2.6
CLP	CLP not plugged

**Process interface (P2)**

MAC address	08:00:06:CC:07:64
IPv4	
IP address	192.168.0.55
Subnet mask	255.255.255.0
Default router	--

2. Adapt the IP address and the subnet mask to your system. Save the settings.

**Process interface (P2)**

MAC address	08:00:06:CC:07:64
IPv4	
IP address	192.168.0.55
Subnet mask	255.255.255.0
Default router	

**Cloud interface (P1)**

Cloud interface in the same subnet ☐

MAC address	08:00:06:CC:07:65
IPv4	<input checked="" type="checkbox"/>
IP address via DHCP	<input type="checkbox"/>
IP address	172.16.62.35
Subnet mask	255.255.0.0
Default router	172.16.0.1
IPv6	<input type="checkbox"/>

**DNS server**

Preferred DNS	172.16.0.1
Alternative DNS	

**Save**

3. Switch to the "Maintenance > System time" tab.
4. Activate the use of an NTP server and set it up.

The screenshot shows the 'System time' configuration page in the Siemens CloudConnect 7 interface. The 'Maintenance' tab is selected, and the 'System time' sub-tab is active. The 'Use NTP server' checkbox is checked. The NTP server address is set to 'de.pool.ntp.org'. The synchronization cycle is set to 64 seconds. The time zone is set to UTC+02:00. The 'Save' button is at the bottom left.

### Addition of station

To connect your control to the CloudConnect 7, proceed as follows:

1. Switch to the "Process access" tab.

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The screenshot shows the 'Process access' configuration page in the Siemens CloudConnect 7 interface. The 'Station configuration' section is highlighted with a red box and a numbered callout (1). The MAC address is 08:00:06:cc:07:65. The IPv4 address is 192.168.0.55. The subnet mask is 255.255.255.0.

2. Add a new station. Enter the station name and press "Add". Close the following dialog window with "OK".

The screenshot shows the 'Add station' dialog window in the Siemens CloudConnect 7 interface. The 'Station name' field contains 'S7-300'. The 'Add' button is highlighted with a red box and a numbered callout (1).

3. Select the newly created station and select "S7" as protocol for this example. Then switch to the "S7" tab.

The screenshot shows the 'Process access' configuration page. Under 'Station configuration', the 'Select station' dropdown is set to 'S7-300'. The 'Protocol' dropdown is set to 'S7'. The 'Settings' section has tabs for 'S7' and 'S7-300', with 'S7' being the active tab. Callout 1 points to the 'Select station' dropdown, callout 2 points to the 'Protocol' dropdown, and callout 3 points to the 'S7' tab in the 'Settings' section.

4. Enter the IP address of the controller and select the corresponding controller family. If you do not use the standard TSAP, remove the check mark and enter the assigned TSAP. Save the settings.

The screenshot shows the 'Process access' configuration page. Under 'Station configuration', the 'Select station' dropdown is set to 'S7-300'. The 'Settings' section has tabs for 'S7' and 'S7-300', with 'S7-300' being the active tab. The 'IP address' field is set to '192.168.0.1'. The 'Controller family' dropdown is set to 'S7-300/400'. The 'Standard TSAPs' checkbox is checked. The 'Local TSAP' field is set to '01.01'. The 'Remote TSAP' field is set to '03.02'. The 'Polling cycle' field is set to '50'. Callout 1 points to the 'IP address' field, callout 2 points to the 'Controller family' dropdown, and callout 3 points to the 'Save' button.

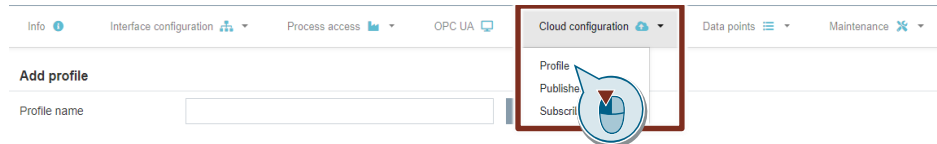
## Cloud configuration for MindSphere connectivity

Follow the steps below to connect to MindSphere.

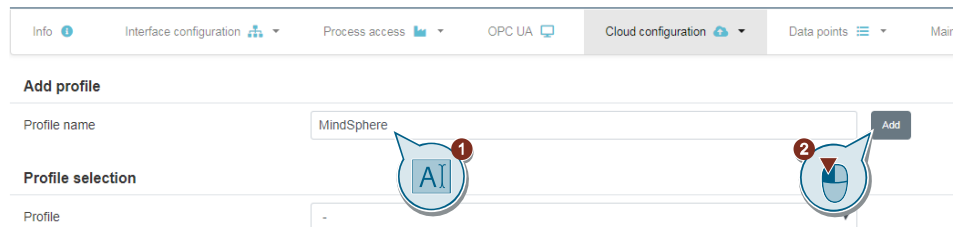
### Note

To connect to the various cloud systems, you create profiles that contain the configuration data. You can create several profiles, but only one profile can be activated at a time.

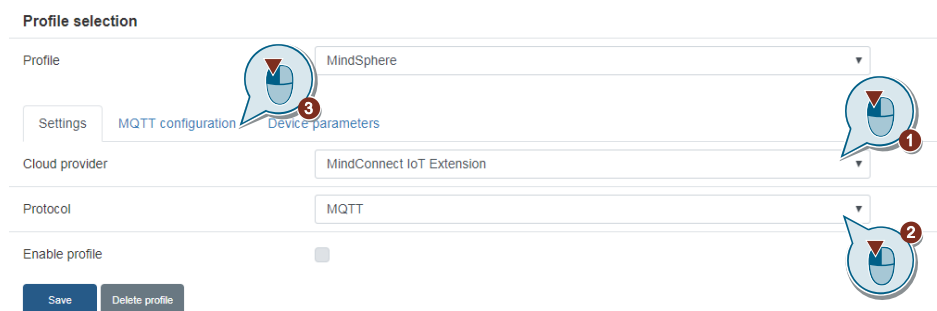
1. Go to the "Cloud configuration > Profile" tab.



2. Enter a meaningful profile name and press "Add". Confirm the dialog with "OK".



3. Select your cloud operator and the protocol to use. Currently only the protocol "MQTT" is supported. Then switch to the tab "MQTT configuration".



4. Select "v3.1.1" as "MQTT version" and enter the address of your MindConnect IoT Extension as "Broker address". These can be found, for example, in the address bar of your browser. The name is composed as follows: "TENANT.mciotextension.REGION.mindsphere.io".
5. Enter a unique name as "Client ID". The device logs into the MindConnect IoT Extension under this name. Check the box for "Authentication".



- Enter your login data for the MindConnect IoT Extension. Note that the User name must be prefixed. This consists of your tenant name and a "/" (e.g. "Siemens/"). Check "TLS" to activate encryption and save your entries.

**Profile selection**

Profile: MindSphere

Settings | MQTT configuration | Certificates | Device parameters

MQTT version: v3.1.1

Broker address: TENANT.mciotextension.eu1.mindsphere.io

Broker port: 8883

Client ID: CloudConnect712\_SIOS

Keepalive interval (s): 60

Authentication: ☒

User name: TENANT/Username

Password: \*\*\*\*\*

Clean session: ☒

TLS: ☒

TLS version: TLS v1.2

Last will / testament: ☐

Last will topic:

Testament:

Retain - Last will: ☐

QoS - Last: 0

Save Delete profile

7. Open a new tab in your browser to download MindSphere's root certificate. This can be found on the following website:  
["https://developer.mindsphere.io/resources/mindconnect-lib/resources-mclib-cacert.html"](https://developer.mindsphere.io/resources/mindconnect-lib/resources-mclib-cacert.html).

Select the certificate of your region and insert the certificate in any text editor. Save the certificate with the file extension ".cer". Then switch back to the CloudConnector WBM tab.

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### MindSphere Root CA Certificate Information for region Europe 1 / Europe 2

**Resources**

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- Change Log
- MindSphere OS Bar
- MindSphere SDK for Java
- MindSphere SDK V2 for Java
- MindSphere SDK for Node.js
- MindSphere Web Components
- Open Edge Device Kit

```

1 Common Name: QuoVadis Root CA 2 G3
2 Organization: QuoVadis Limited
3 Country: BM
4 Valid From: January 12, 2012
5 Valid To: January 12, 2042
6 Issuer: QuoVadis Root CA 2 G3, QuoVadis Limited
7 Serial Number: 445734245b81899b35f2ceb82b3b5ba726f07528

```

```

1 -----BEGIN CERTIFICATE-----
2 MIIFYDCA0IgaWIBAgIURF0JFuBis18e64KztbpybwdSgWQYJKoZIhvcNAQEL
3 BQAwSElMAkGA1UEBhMCQk0xGTAXBgNVBAoTEFF1b12h2G1zExpxW10zWQxHjAc
4 BgNVBAMTFV1b12h2G1zIFJvbnQgQ0UgM1BHMzAeFw0xMTIwODU5MzA4fj00
5 MjA0MTIwODU5MzA4fj00MjA0MTIwODU5MzA4fj00MjA0MTIwODU5MzA4fj00
6 aW1pdGVkMR4wHAYDVQQDExVdW9yYWRpcyB5b290IENBID1gRzZmMwggIiMA0GCSqG
7 S1B3DQEBAAUAA4ICDAAwggIKAoICAQChriWYARjcw4g/Ruv5z+LrI3HmtPh2iFF
8 qq8nUeVuGxbULX1QsFN3vXg6Y0JkApt8hpWGo6t/x8Vf9WVHhLL5hSEBMHfNzMW
9 n4rjyduYNM7YMc0RvynyfDStNVNCKJJ+fKH46naFaF9a7i6JaltUkSs+L5u+9ym
10 c5GQYAYDFCDy54ejiK2toIz/pgs1UiXnFgVY7g1gQyJO/Dh4fxaXc6AcW348as+
11 O7q414AB+6Xr7PFYXnAgMaCvN+ggOp+oM1wzAkd056OXbXm07FGmh77F0m6RQ1
12 o9/NgJ8M8Fsc9EG/Srj61Yx8sccfrf5BmrODXFEVU+V0PORA2Mq1W/xPtbAd0j
13 IaFYAI7D0Go778PjEiuA3GfmlbLNHiJuKvhl1FLKFAeNi1USxnnluI2oL1NeeNKq
14 IcQY5jDj21Xhm26sGahVpKUG0CM62+tlX8oREFA7T8pt9DTEceT/AFr2XK4jYIVz
15 8eQQs8Wu12K7E8EM4DnatDLXtas1qnIh04M15zHfeiFuDIIFR0YkRVKYNLp43eh
16 vNURG3YB2wjgQQvD6xVu+KQ22aKrr+InULYrAocoeFCT5v0ICvYbIxo/gbjh9Uy3l
17 7zi1zWNof/k19N+IxWAlka88aRkh1RbQ694Lrz4EEV1WFA4z0jyWbYw8jwNkALG
18 c04BrTw1wIDAQAB0IwODAPBgNVHRMBAf8EBTADAQH/MA4GA1UdDwEB/wQEAwIB
19 BjdBgNVHQ4EFgQU7edrdlg/Y0xW8ald7tyFnGbxD0wDQVJKoZIhvcNAQELBQAD
20 ggIBAJHfgD9DCX5xwvFrs4iP4VgyvD11+8hdyLy2m3tdqXK4Qr36LLTn91NMx66
21 AazHakE7kN0IXLJgspDwyM4DYvml7ftuKtwGTTwpD4kWhkMSA/ohGHqPHKmd+RC
22 toiJ01h5fQ7kPWNqTl1wSAZYaRoPxDmaHBR//47PERijXWmL2W2mWeyAMQ0Ga
23 W/22GVjeVYg3Uqt4Kaoe0L9x52ID8DyeAIKV30viYeIyUgPhHergbJ5hLja7NQ4n
24 1v1mNDhonFwFlxHBlRJAHPYERAK74X9abgdwqTBSLmYF5vHX/JHyPhGSGHoJE
25 +V+YtYlUkm1K77VHnoK6XouYvBxHaU4Aah26zNRDb19qkv6XU/IyAgkwo1jwDQHV
26 ceaxfGL7w/U2Rcxhbl5MLMVerugOXou/983g7aEOGzPuVBJ+D77vfoRzQ+NwmNtd
27 db1NWQeFF8M51vHfQSTYPlk7Hs6Y19TM3WpVhn3u6GBVv/9U2IINJ0gpnIdseFNWm
28 KCLja2WDZYWm388P52dSbravhXz18nPxT7AvSESBT/8ctwNJA1vIjeb1Vdj1eYeM
29 HVOyToV7BjHLEPj4eHKNJeV3UvQDHEimUf+IIDBu80JdQz2XhOdT+yHBTw8lmoa4
30 WSc2Rz0ZiG3oheGe7IUIarF8NMkd7Egr03jt2a80eWmD3n+M
31 -----END CERTIFICATE-----

```

8. Switch to the "Certificates" tab. Select the certificate you just saved and save the settings. Confirm the dialog that opens with "OK".

Settings MQTT configuration Certificates Device parameters

**MQTT server certificate manager**

Import certificate: MindSphere\_Root.cer Browse

No certificate imported

**MQTT client certificate manager**

Use MQTT certificate ☐

Save Delete profile

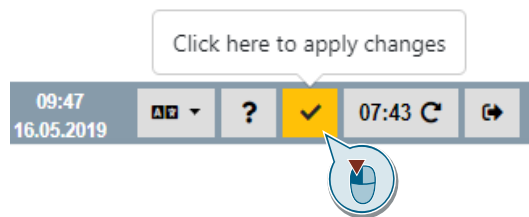
- Switch to the "Device parameters" tab and enter the "Client ID" entered in step 5 as the "Device name" here. Enter "c8y\_MQTTDevice" as "Device type". Save the entries you have made.

Settings   MQTT configuration   Certificates   **Device parameters**

Device name

Device type

- Activate the settings you have made. The device now logs into the MindConnect IoT Extension automatically.



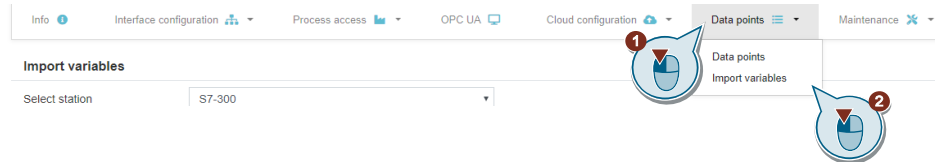
## Creating data points

You have two options for creating data points. Either you create each data point manually or you import a data block source that contains the data points.

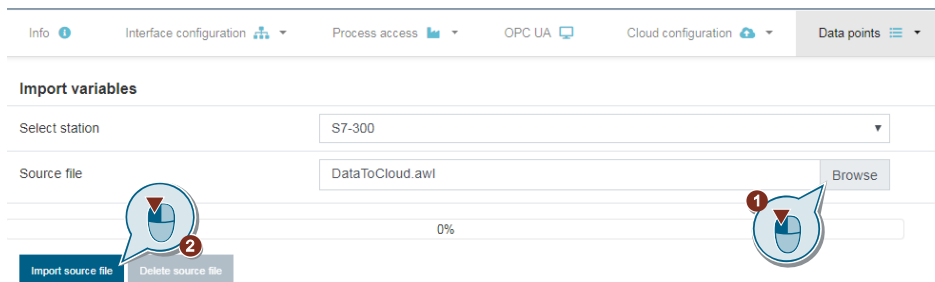
The following configurations are shown using MindSphere as an example.

## Importing the data points

1. Switch to the "Data points > Import variables" tab.



2. Select the block source created in chapter [2.2.1](#) and import the file.



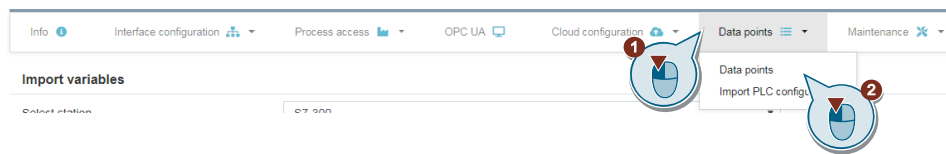
3. Select the data points you want to import or import all data points.



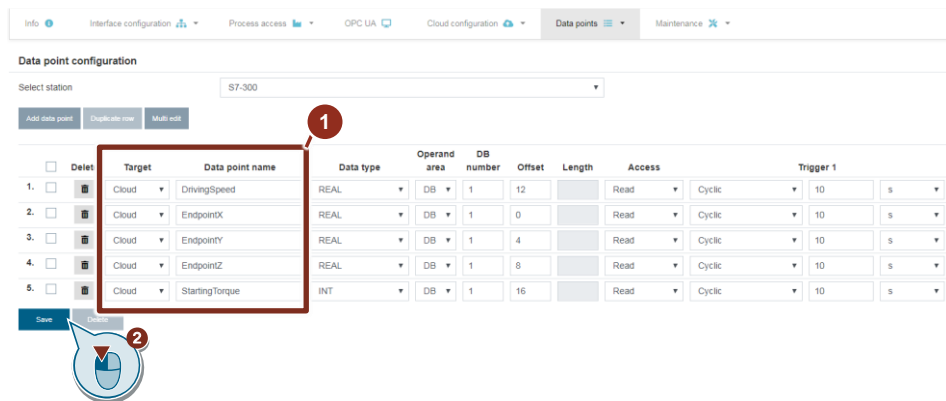
### Note

If you want to import data points from several data blocks, first import all the required data points before you start the assignment.

4. Change to the tab "Data points > Data points".



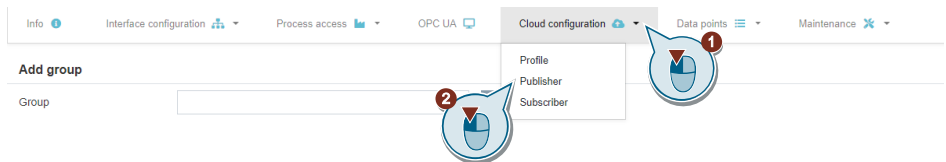
5. Select "Cloud" as "Target" and adjust the names of the data points if necessary. Save the settings.



### Note

With firmware V1.1.5 there is an error with the name resolution. Remove the special characters from the datapoint names.

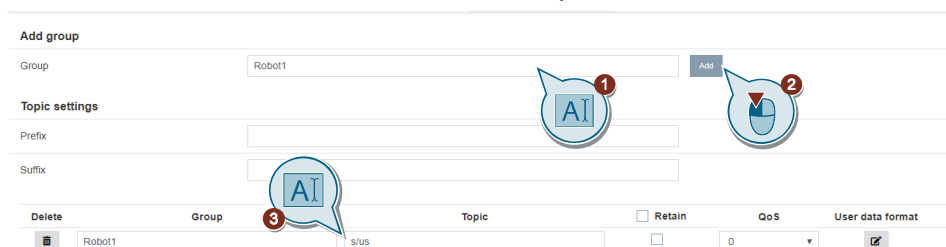
6. Switch to the tab "Cloud configuration > Publisher".



### Note

Subscriber functionality is not available for use with MindSphere.

7. Create a new group. Adjust the topic if necessary. For MindSphere, the topic must be "s/us" and will be entered automatically.



8. Assign the data points to the newly created group and assign units in the "Attribute" field.

**Station assignment**

Select station: S7-300

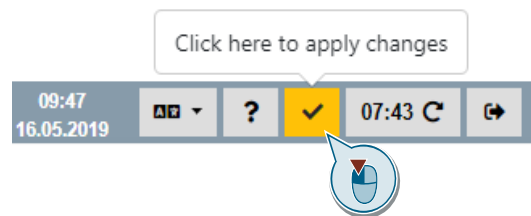
Group: Robot1

Apply to selected Apply to all

<input type="checkbox"/>	Data point name	Data type	Station	Group	Attribute
<input type="checkbox"/>	DrivingSpeed	REAL	S7-300	Robot1	m/s
<input type="checkbox"/>	EndpointX	REAL	S7-300	Robot1	
<input type="checkbox"/>	EndpointY	REAL	S7-300	Robot1	
<input type="checkbox"/>	EndpointZ	REAL	S7-300	Robot1	
<input type="checkbox"/>	StartingTorque	INT	S7-300	Robot1	Nm

Save

9. Activate the settings you have made. The data points are automatically created in the MindSphere IoT Extension.



### Manual creation of the data points

1. Go to the "Data Points > Data Points" tab.
2. Select the control and add a new data point.

Info Interface configuration Process access OPC UA Cloud configuration Data points

**Data point configuration**

Select station: S7-300

Add data point Duplicate site group Multi edit

3. Configure the data point as necessary and then save the parameterization.

Delete	Target	Data point name	Data type	Operand area	DB number	Offset	Length	Access	Trigger 1
<input type="checkbox"/>	Cloud	ButtonStart	BOOL	I		0		Read	Cyclic 1 s

**Note**

You can configure two different triggers per data point. You can see the different trigger types in the picture.

Trigger 1			Trigger 2		
Cyclic	10	s	Area outside	Low range lir	High range lir
Cyclic	10	s	No trigger		
Once daily	10	s	No trigger		
Once weekly	10	s	No trigger		
Once monthly	10	s	No trigger		
Deviation	10	s	No trigger		
Area outside	10	s	No trigger		
Area inside	10	s	No trigger		
Threshold HIGH	10	s	No trigger		
Threshold LOW	10	s	No trigger		

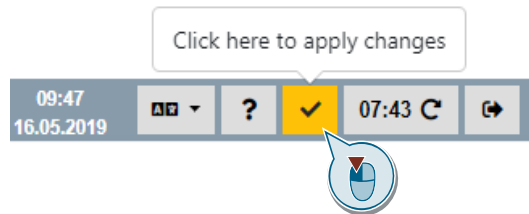
## 4. Switch to the tab "Cloud configuration &gt; Publisher".

## 5. Create a new group. Adjust the topic if necessary. For MindSphere, the topic must be "s/us" and will be entered automatically.

## 6. Assign the data points to the newly created group and assign units in the "Attribute" field.



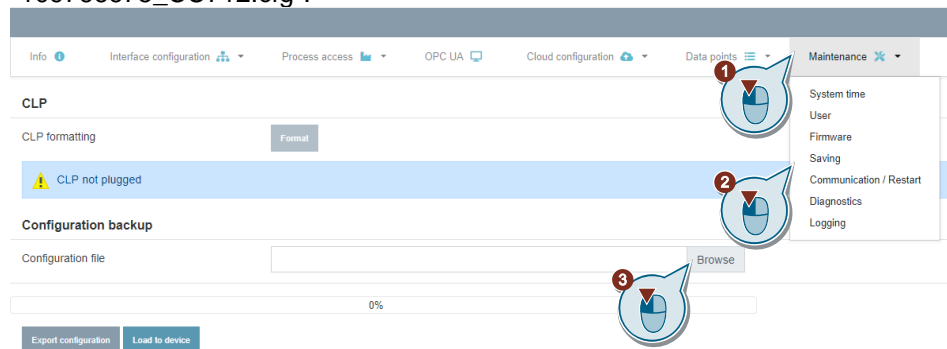
7. Activate the settings you have made. The data points are automatically created in the MindSphere IoT Extension.



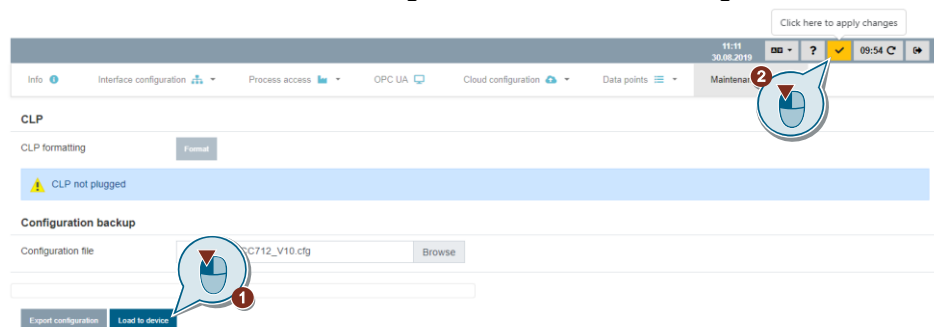
### Import of the project file

To save yourself the general project engineering effort, you can load the supplied project file into CloudConnect 7.

1. Switch to the "Maintenance > Saving" tab and select the downloaded file "109766675\_CC712.cfg".



2. Load the file and confirm the dialogs. Then activate the changes.



### Hinweis

The user data is not changed. The certificates of the profiles have to be imported again.

### 2.2.3 MindSphere setup

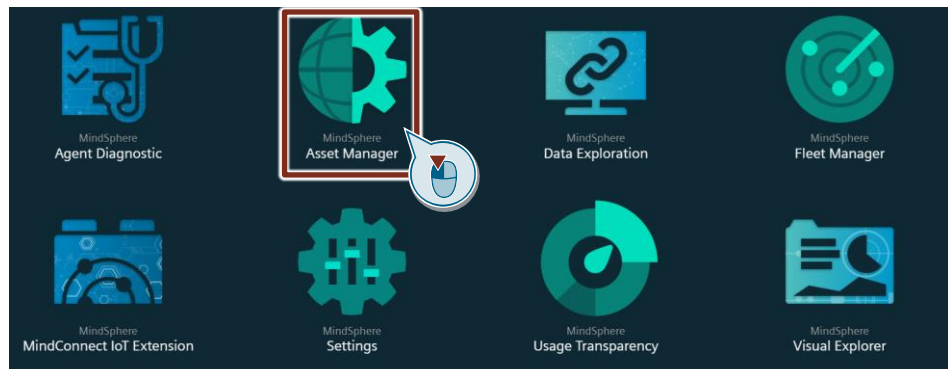
To integrate CloudConnect 7 as a gateway into MindSphere and view the data, you will need the following applications:

- IoT Extension
- Asset Manager
- Fleet Manager

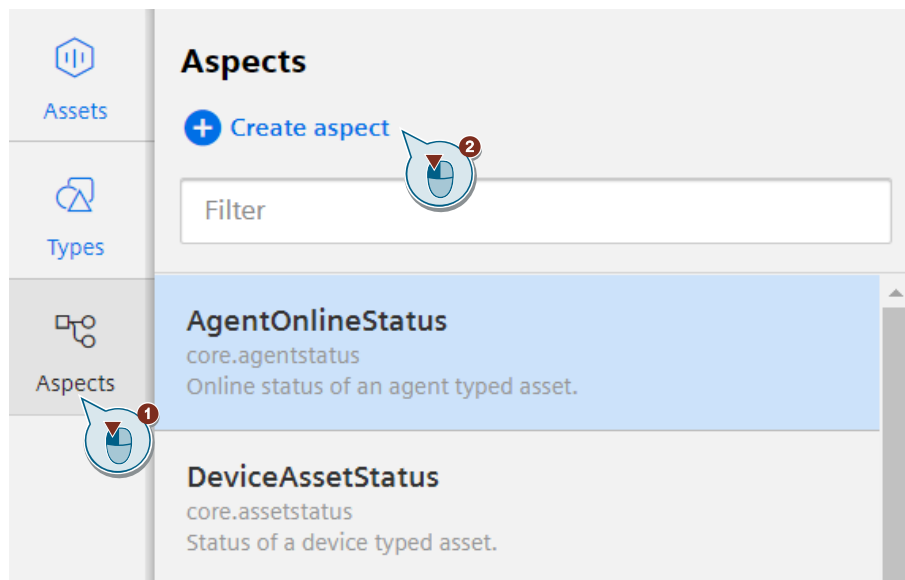
You can order the application via the MindSphere Store.

#### Asset Manager

1. Log in to MindSphere and open the "Asset Manager".



2. Create a new "Aspect".



3. Insert the required variables based on the data points created in chapter [2.2.2](#) and save the "Aspect".

## Create aspect

Aspect information

Type ID:

dfcskmt.RobotExample

Type ID cannot be changed after creation

Name: \*

RobotExample

Description:

This Aspect contains the Variables of the Application Example.

193 characters left

Choose category:

The category of an aspect cannot be changed afterwards.

☒ Dynamic  
The aspect is used for time-series data
 ☐ Static  
The aspect is used for static data

Variables

- Variable names must be unique inside an aspect.
- Once a variable is added to the aspect it cannot be renamed or removed.
- The data type BIG\_STRING is only available for a dynamic aspect.

+ Add variable

Name	Data type	Unit	Max. length
DrivingSpeed	DOUBLE	m/s	-
EndpointX	DOUBLE	cm	-
EndpointY	DOUBLE	cm	-
EndpointZ	DOUBLE	cm	-
Star	INT	Nm	-

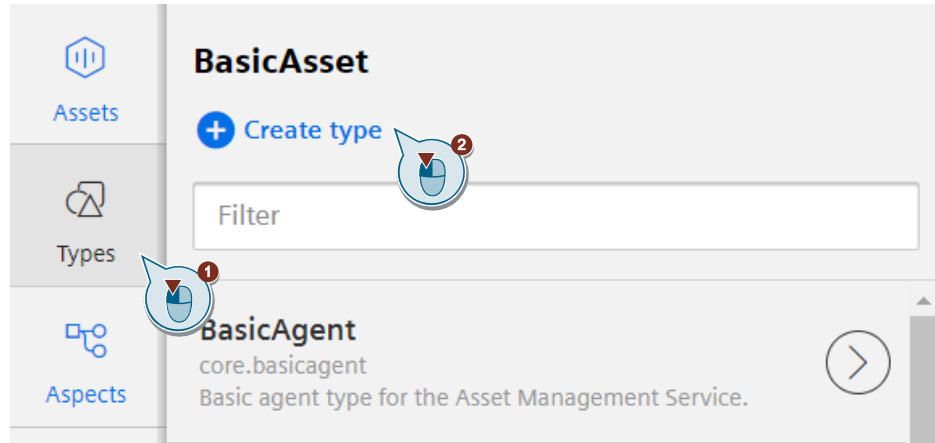
Save

Cancel

## 4. Create a new "Type".

**Note**

You can also use the automatically generated type "c8y\_MQTTDevice". Go to step 7 and select "c8y\_MQTTDevice" as the type for the new asset.



## 5. Assign a name and assign an "Aspect".

**Create type**

— Type information

**Parent type:**  
core.basicasset  
Parent type due to hierarchical order

**Type ID:**  
dfcskmt.CloudConnect\_RobotExample  
Type ID cannot be changed after creation

**Name: \***  
CloudConnect\_RobotExample

**Description:**  
Description  
255 characters left

+ Image

+ Variables

— Aspects

No aspects entered yet  
Add your first aspect to your type

+ Add aspect

6. Search for the previously created "Aspect" and assign a name. Then save the settings.

Aspects

+ Add aspect    🔍 Browse aspects

Name	Aspect	Category
> Robot1	dfcskmt.RobotExample	Dynamic

Save    Cancel

7. Create a new asset.

dfcskmt

Assets    Types

+ Create asset

Filter

deleted lkjh

8. Select the newly created type.

Select type

Filter Cancel

BasicArea <small>core.basicarea</small>	BasicSite <small>core.basicite</small>	EdgeAnalyticsApplication <small>core.edgeanalyticsapplica...</small>
IndustrialEdge <small>core.industrialEdge</small>	MindConnect X509 <small>core.mcX509</small>	MindConnectFB1500 <small>core.mcfb1500</small>
MindConnectIntegration <small>core.mcIntegration</small>	MindConnectIoT2040 <small>core.mciot2040</small>	MindConnectLib <small>core.mclib</small>
MindConnectNano <small>core.mcnano</small>	OPCUADatamodel <small>core.opcuadatamodel</small>	OPCUADatatype <small>core.opcuadatatype</small>
OPCUAHierarchyDataType <small>core.opcuahierarchydatatype...</small>	Achim_Type <small>dfcskmt.Achim_Type</small>	c8y_MQTTDevice <small>dfcskmt.c8y_MQTTDevice</small>
CloudConnect_RobotExample <small>dfcskmt.CloudConnect_Robo...</small>	EnMPRO_datamodel <small>dfcskmt.EnMPRO_datamodel</small>	EnMPRO_Test <small>dfcskmt.EnMPRO_Test</small>
EnMPRO_typeVariables <small>dfcskmt.EnMPRO_typeVariab...</small>	myType <small>dfcskmt.myType</small>	TestAmberg <small>dfcskmt.TestAmberg</small>
type_test_SPS_SITOP <small>dfcskmt.type_test_SPS_SIT...</small>		

- Assign a unique name and save the changes.

**General**

Type ID:  
dfcskmt.CloudConnect\_RobotExample  
Selected type of asset cannot be changed

Name: \*  
CloudConnect712\_Example

Description:  
Description  
255 characters left

+ Location

+ Variables

**Aspects**

Name	Aspect	Category
> Robot1	dfcskmt.RobotExample	Dynamic

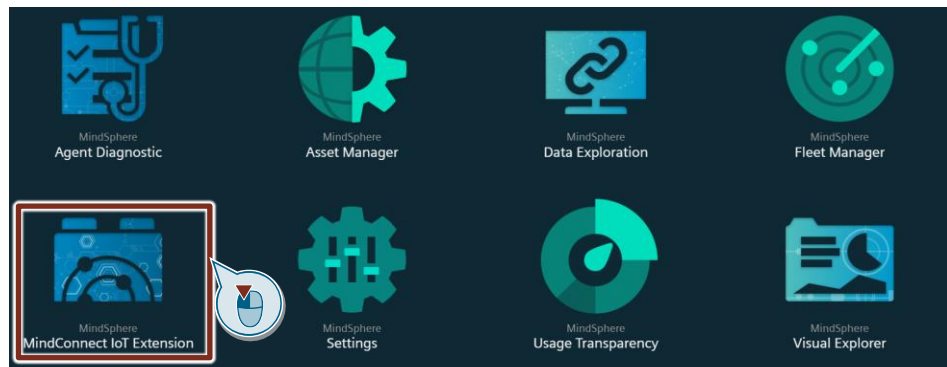
\* Required

Save Cancel

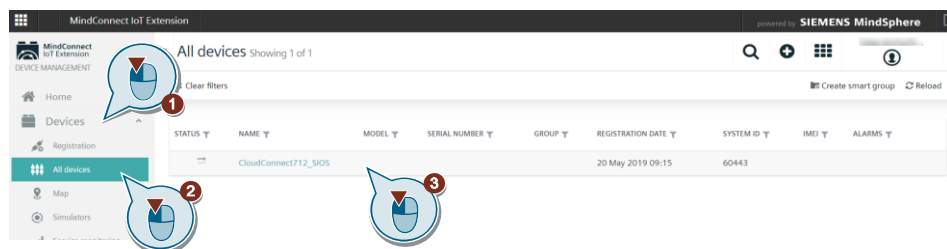
## MindConnect IoT Extension

The settings of CloudConnect 7 are managed in the MindConnect IoT Extension.

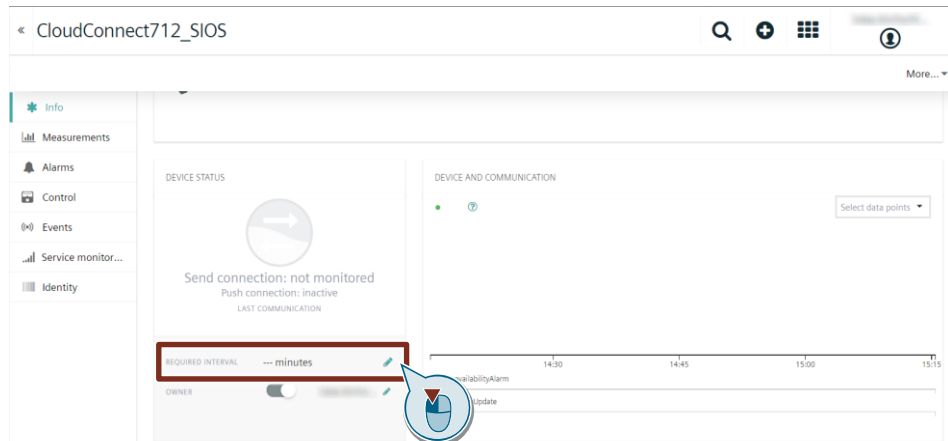
- Open the MindConnect IoT Extension via the MindSphere Launchpad.



- Open the device via "Devices > All devices".



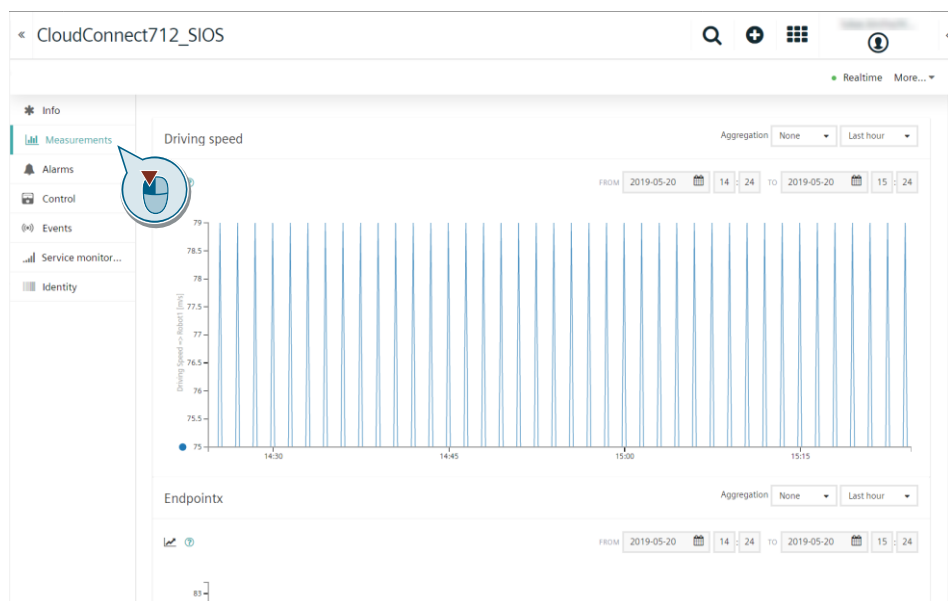
- Adjust the update interval (e.g. 1 minute). Your CloudConnect 7 then establishes an active connection to the MindConnect IoT Extension.



- Under "Measurements", you can observe values that have already been received.

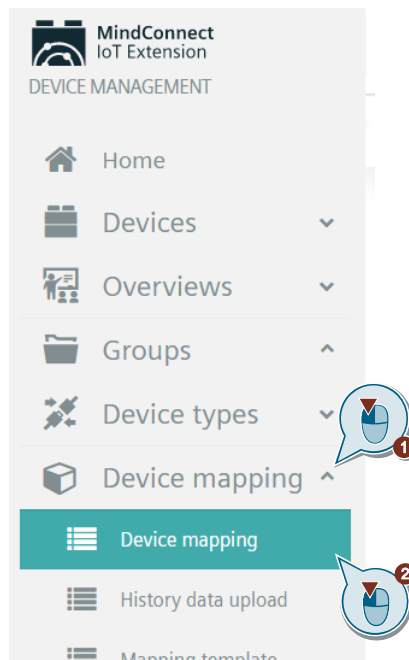
### Note

The Measurements item is not available until the data points have been sent for the first time.

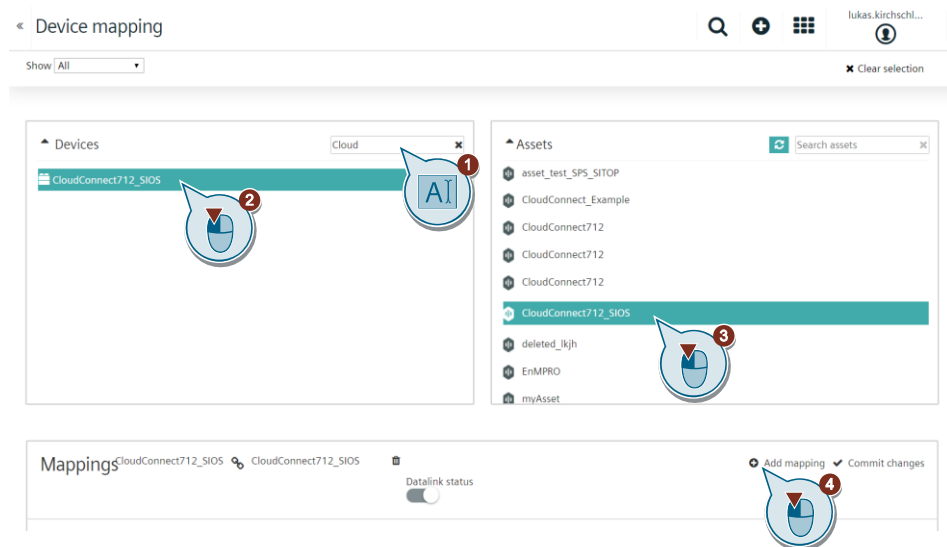




5. Switch to "Device mapping > Device mapping".




6. Locate CloudConnect 7 and link it to the previously created asset. Add a new mapping.



## 7. Link the measured values with the corresponding "Aspects".

Add mapping


Select from existing template


Template  
Select template (required) 

or

Source

Device name: CloudConnect712\_SIOS


Measurement  
DrivingSpeed 


Series  
Robot1 

Unit : m/s


Target



Asset name: CloudConnect712\_SIOS

Aspect  
Robot1 





Variable  
DrivingSpeed 


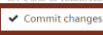
Unit : m/s Data Type : DOUBLE








## 8. Save the mapping via "Commit changes". The status then changes from "NEW" to "ACTIVE".

Mappings  CloudConnect712\_SIOS  CloudConnect712\_SIOS  Not a template 

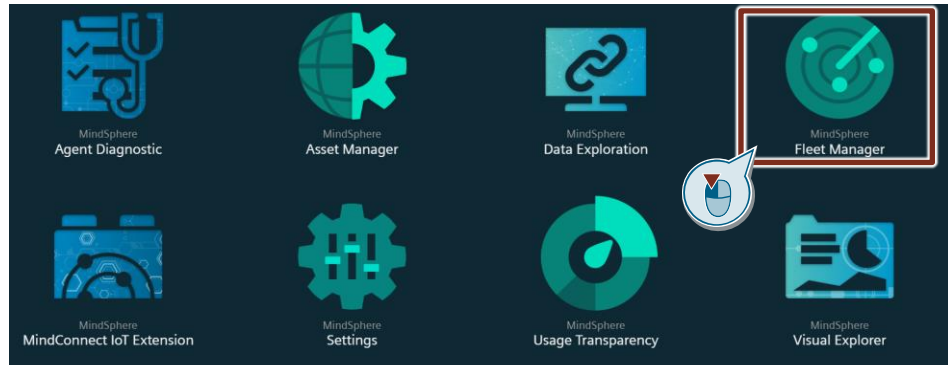
 DataLink status 

MEASUREMENT	SERIES	ASPECT NAME	VARIABLE	STATUS	
EndpointZ	Robot1	Robot1	EndpointZ	NEW	
EndpointY	Robot1	Robot1	EndpointY	NEW	
EndpointX	Robot1	Robot1	EndpointX	NEW	
StartingTorque	Robot1	Robot1	StartingTorque	NEW	
DrivingSpeed	Robot1	Robot1	DrivingSpeed	NEW	

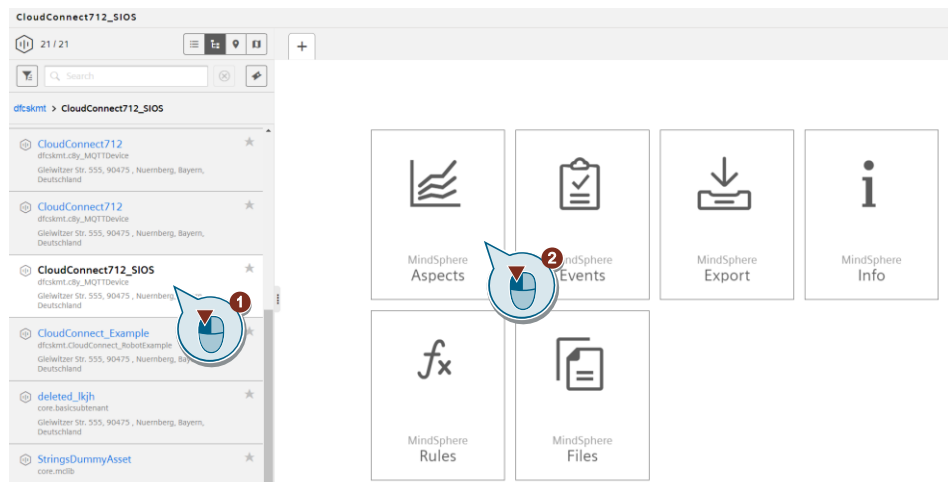
### Fleet Manager

You can display the received data in the Fleet Manager.

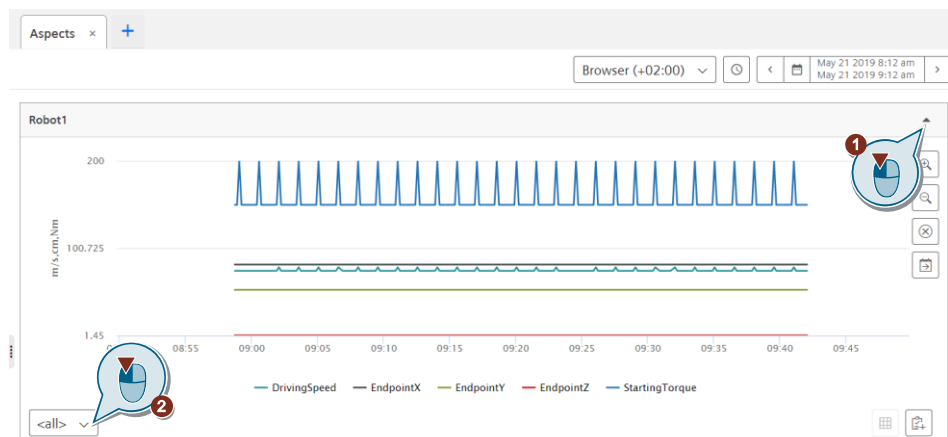
1. Start the Fleet Manager from the MindSphere Launchpad.



2. Select your device and open the tile "Aspects".



3. Unfold the Aspect. All configured measured values are displayed. You can also select individual measured values via a drop-down list.



## 3 Appendix

### 3.1 Service and support

#### Industry Online Support

Do you have any questions or need assistance?

Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.

The Industry Online Support is the central address for information about our products, solutions and services.

Product information, manuals, downloads, FAQs, application examples and videos – all information is accessible with just a few mouse clicks:

[support.industry.siemens.com](https://support.industry.siemens.com)

#### Technical Support

The Technical Support of Siemens Industry provides you fast and competent support regarding all technical queries with numerous tailor-made offers – ranging from basic support to individual support contracts. Please send queries to Technical Support via Web form:

[www.siemens.com/industry/supportrequest](https://www.siemens.com/industry/supportrequest)

#### SITRAIN – Training for Industry

We support you with our globally available training courses for industry with practical experience, innovative learning methods and a concept that's tailored to the customer's specific needs.

For more information on our offered trainings and courses, as well as their locations and dates, refer to our web page:

[www.siemens.com/sitrain](https://www.siemens.com/sitrain)

#### Service offer

Our range of services includes the following:

- Plant data services
- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
- Service programs and contracts

You can find detailed information on our range of services in the service catalog web page:

[support.industry.siemens.com/cs/sc](https://support.industry.siemens.com/cs/sc)

#### Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone:

[support.industry.siemens.com/cs/ww/en/sc/2067](https://support.industry.siemens.com/cs/ww/en/sc/2067)

## 3.2 Links and literature

Table 3-1

No.	Topic
\1\	Siemens Industry Online Support <a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>
\2\	Link to the entry page of the application example <a href="https://support.industry.siemens.com/cs/ww/en/view/109766675">https://support.industry.siemens.com/cs/ww/en/view/109766675</a>
\3\	Developer documentation <a href="https://developer.mindsphere.io/">https://developer.mindsphere.io/</a>
\4\	MindSphere Forum <a href="https://community.plm.automation.siemens.com/t5/MindSphere/ct-p/MindSphere">https://community.plm.automation.siemens.com/t5/MindSphere/ct-p/MindSphere</a>
\5\	Manual for SIMATIC CloudConnect 712 <a href="https://support.industry.siemens.com/cs/ww/en/ps/25621">https://support.industry.siemens.com/cs/ww/en/ps/25621</a>
\6\	Azure IoT Explorer <a href="https://github.com/Azure/azure-iot-explorer">https://github.com/Azure/azure-iot-explorer</a>
\7\	Documentation AWS IoT Core <a href="https://docs.aws.amazon.com/iot/latest/developerguide/what-is-aws-iot.html">https://docs.aws.amazon.com/iot/latest/developerguide/what-is-aws-iot.html</a>

## 3.3 Change documentation

Table 3-2

Version	Date	Change
V1.0	08/2019	First version
V1.1	10/2019	<ul style="list-style-type: none"> <li>• Correction of an error in the documentation.</li> <li>• Addition of a note</li> </ul>
V2.0	03/2020	<ul style="list-style-type: none"> <li>• Splitting of documentation by cloud provider.</li> <li>• Recreating the variant with AWS</li> </ul>