Software update Version 2

SpaceLogic KNX

DALI gateway Pro
MTN6725-0101

Technical Product Presentation
of the SW V2 update

Life Is On Schneider Electric

Agenda

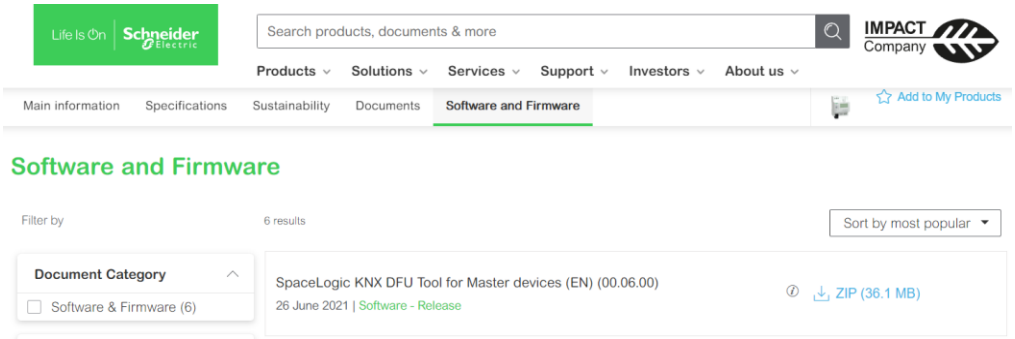
SpaceLogic KNX
DALI gateway Pro V2

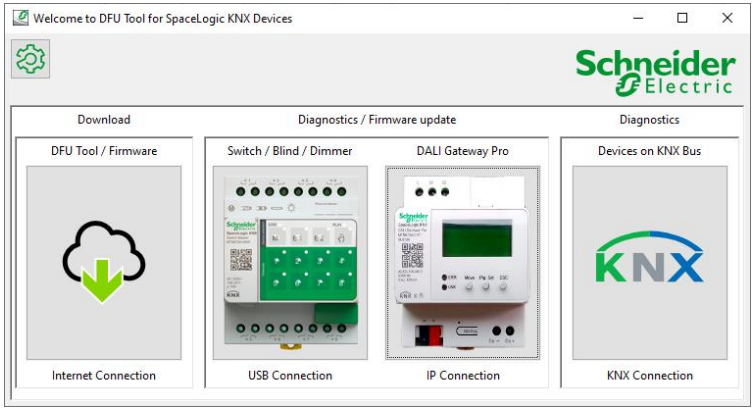
New Software’s

Step 5 – FW update in detail (3/4)

- Download the *Device Firmware Update Tool* from se.com, install and run it

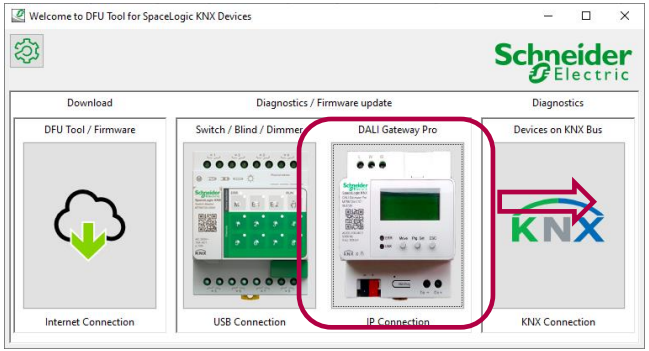
https://www.se.com/ww/en/product/MTN6725-0101/spacelogic-knx-dali-gateway-pro-1ch-dali2/

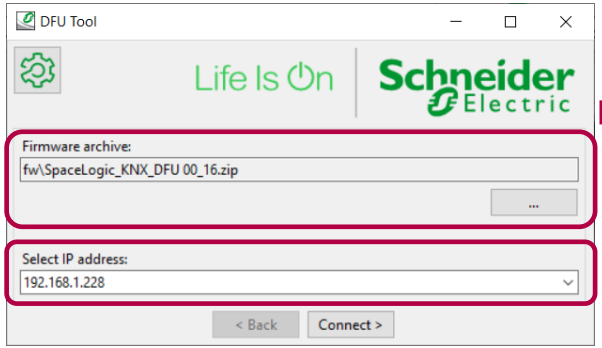


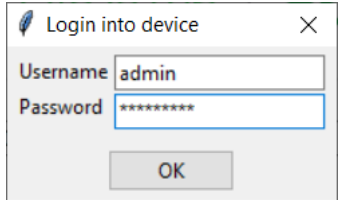


New Software's

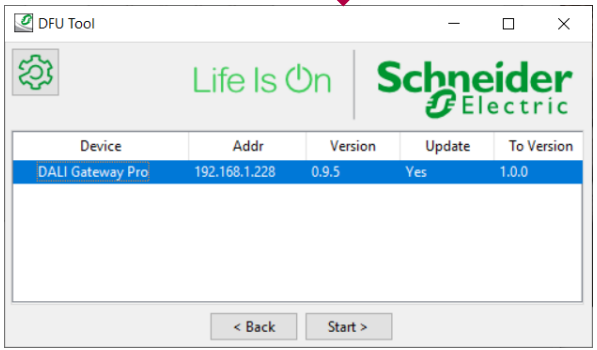
Step 5 – FW update in detail (4/4)

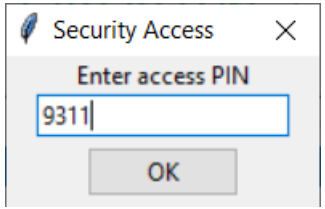




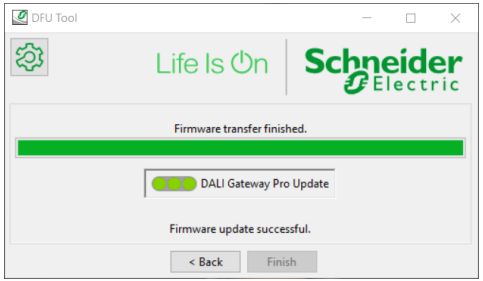


Note: You first have to login as admin and change the default password via a web-browser. You may not be logged in via the browser when doing the upgrade (only 1 admin session allowed)





The PIN-code must be entered in the parameters in ETS and the device must be downloaded



KNX/DALI GW Overview: Software relationships

FW, ETS application and DCA

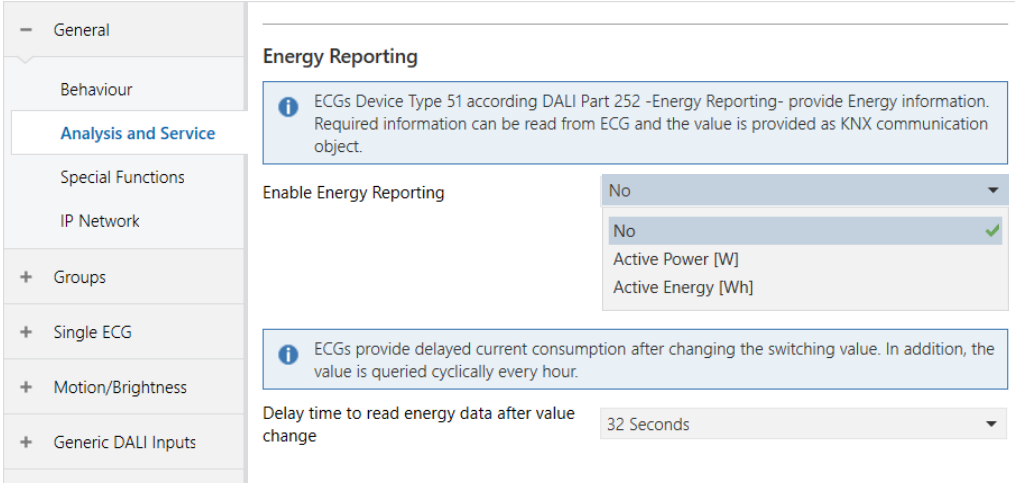
Schneider Electric KNX DALI Gateways - compatible Firmware / ETS / DCA Releases

Dali Gateway:	Firmware:	ETS:	Plugin:	DCA:	
MTN6725-0003	0.2.0 - 0.2.8	7308	No	2.1.1.0	
MTN6725-0003	0.3.0 - 0.3.5	7312/V1.0	No	1.0.0.1 / 1.0.2.0 / 1.1.0.0 / 4.0.0.0	
MTN6725-0003	0.3.0 - 0.3.5	7312/V1.1	No	1.1.2.0-1.1.2.1 / 4.0.0.0	
★ **MTN6725-0003**	1.4.2	7312/V4.0	No	4.0.0.0	Nov 2023
MTN6725-0004	0.2.0 - 0.2.8	7309	No	2.1.1.0	
MTN6725-0004	0.3.0 - 0.3.5	7313/V1.0	No	1.0.0.1 / 1.0.2.0 / 1.1.0.0 / 4.0.0.0	
MTN6725-0004	0.3.0 - 0.3.5	7313/V1.1	No	1.1.2.0-1.1.2.1 / 4.0.0.0	
★ **MTN6725-0004**	1.4.2	7313/V4.0	No	4.0.0.0	Nov 2023
MTN6725-0101	1.0.4 - 1.2.4	7311/V1.0	No	1.1.0.0 -1.2.1.0	
MTN6725-0101	1.2.0 - 1.2.4	7311/V1.2	No	1.2.1.0 (remains)	
★ **MTN6725-0101**	2.0.0 - 2.0.2	7311/V2.0	No	2.0.1.0 (new)	

New features for Groups and ECGs

Energy/Power reporting – Device Type 51 according to DALI part 252

I can report & aggregate lighting power demand (all GW)



Example with "Active energy"

Numb	Name	Object Fun	Length	Data Type	C	R	W	T	U	I
29	Total Active Energy	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
117	G1, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
627	G16, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
652	ECG 1, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
2164	ECG 64, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-

- ECGs of type DT-51 provides energy information and the gateway support to read energy ***or*** power values and make the information available on KNX group objects
  - Active Energy [Wh]: DPT13.010, 4 byte signed value
  - Power [W]: DPT14.056, 4 byte float value
- Select under *General -> Analysis and service* whether active power or active energy should be read
- The value is read from the ECG every hour and also after a status change
  - In the event of a status change, the correct value should be available within 30s in the ECG, according to standard.
  - As it is manufacturer dependent, the delay time can be adjusted (4-60s), or no specific reading by status change
- Automatic calculation per group and per device
  - By enabling the function, a group object for the device and one group object per group is made available
  - It is also possible to enable a group object for each ECG individually (*ECG x -> Analysis and Service*)

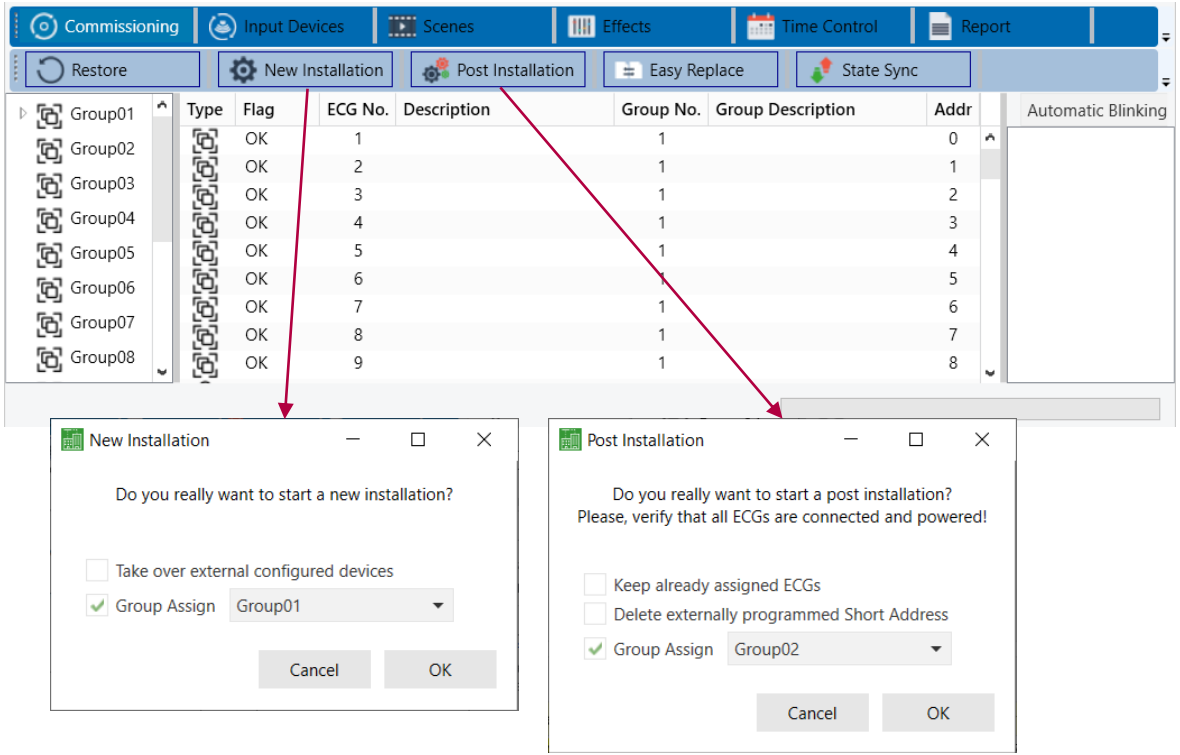
Back to ToC

New features by ECG commissioning

New features for Groups and ECGs

Automatically assign ECGs to a group by New and Post installation

I can directly assign all new found ECGs into a group (i.e. commission by power-group) (all GW)

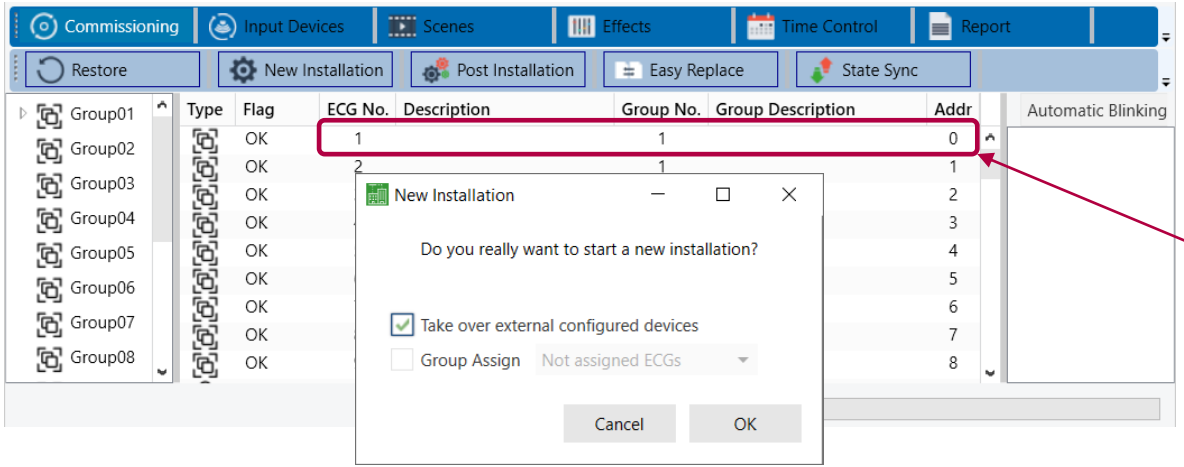


- By selecting “Group assign” and a group number, all found ECGs will automatically end up in the table and being assigned to the group
  - No need to drag the ECGs from the “found ECG” window to the table
  - No need to drag the ECGs to the group
- Available for New and Post installation
  - If the different DALI groups corresponds to the electrical circuits, the groups can be powered one after the other using post installation with automatic group assignment in-between, thus avoiding any drag&drop.

New features for Groups and ECGs

Overtake external configured devices by New installation

I can read-in pre-programmed ECG addresses and group addresses (commissioned by Installer) (DaliPro)



- If a DALI segment has been commissioned by an external tool, it is now possible to take over and read the configuration
  - The installer can now handover an addressed installation to the SI. ECG and wiring problems can then be discovered in an earlier phase.
- By New installation, enable the option *Take over external configured devices*
  - The short and long addresses and group belonging are read
  - Each short address is assigned to the corresponding ETS ECG no., i.e short address 0 is assigned ETS ECG No. 1. Another example: 2 found ECGs with short address 5 and 6 are assigned to ETS ECG No. 6 and 7
- NOTE:
  - The ECGs may not belong to several groups (currently multiple group assignment are kept)
  - Scene data are not read
  - The ETS application must be downloaded afterwards (to set System failure level and Power on level in the ECGs)

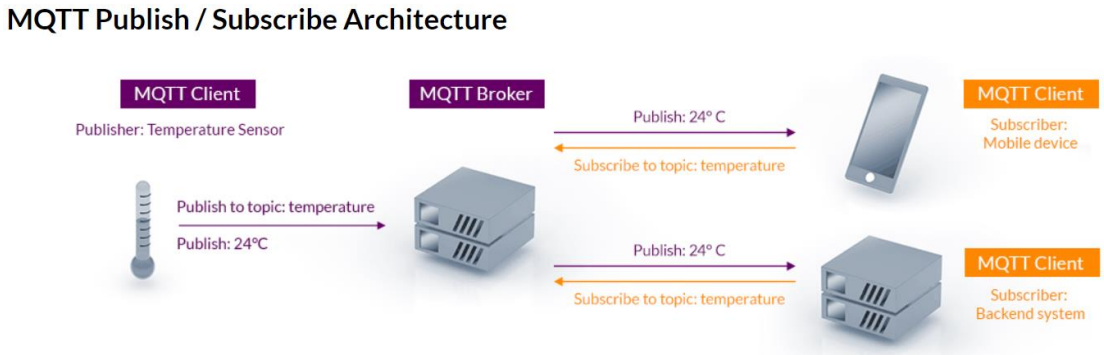
Back to ToC

MQTT protocol (Message Queuing Telemetry Transport)

MQTT = Message Queuing Telemetry Transport

IoT protocol on TCP/IP

- MQTT is designed for M2M and IoT
  - Lightweight, open, efficient and event driven
  - Scale to millions of things
  - Bi-directional communications
  - Secure (TLS, authentication by username/password, authorization to access data)
- Publish and subscribe messaging principal
  - Sender publish data on a MQTT server, originally called broker, and receiver(s) subscribe to the data
  - Clients never have direct contact with each other, which makes communication more efficient
  - The data are called Topics and are described with UTF-8 strings. Topics can be organized hierarchically in levels separated by forward slash /, e.g. *daliGW1/group/1/status*
  - A client can subscribe to multiple topics and can at the same time publish own topics
  - The server push the topics to the subscribers, no need to poll data



mqtt.org – information, FAQs and eLearnings

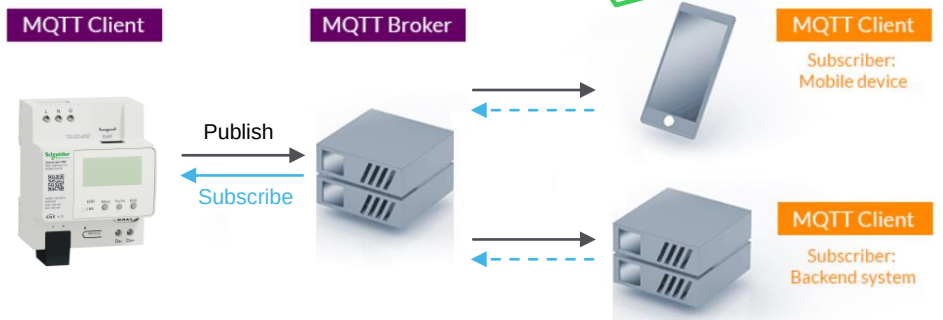
MQTT in the DALI GW

Topics that are published & topics that are subscribed to

- Provide status to and control lighting from a management system, not necessarily capable to communicate directly with KNX
- Published topics
  - Overall statistics, e.g.
    - Number of ECGs, ECG/lamp/KNX/DALI failures, power/energy
  - Configuration data for ECGs and Groups, e.g.
    - Groups: group. no, group name, no of ECGs, no. of converters
    - ECGs: ECG.no, long and short DALI adr, ECG name, device type
  - Individual data for groups and individually controlled ECGs, e.g
    - ECGs: alarms, brightness status, colour status, power/energy
    - Groups: statistics, alarms, brightness status, colour, power/energy
  - Emergency lights, e.g
    - Status, test modes, test results
  - Sensors, e.g.
    - Sensor status/value, error
- Subscription topics for Groups and ECGs (i.e. command reception)
  - On/off, brightness 0-100%, colour temperature, RGB/W colour

As a System Integrator, I can:
- “offload” KNX-TP traffic by reporting lighting status over Ethernet
- Report “unlimited” DaliPro status to a central server, BMS or Cloud backend directly from the edge
- Interact/integrate with other systems
- Control “grouped” lights differently, outside of Dali grouping limits

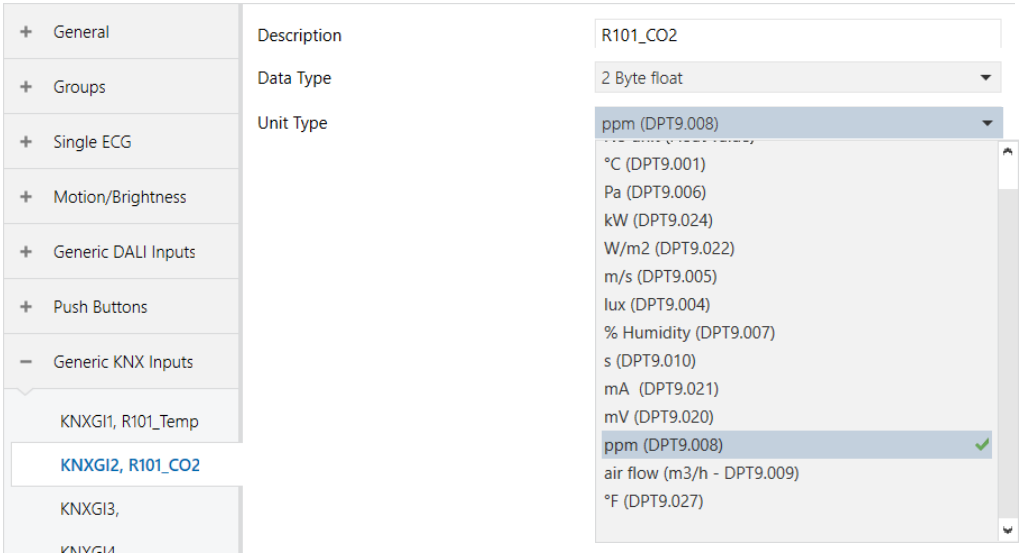
As a residential end-user, I can control lights from my mobile phone



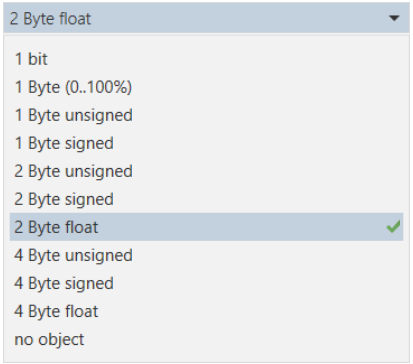
MQTT in the DALI GW

Generic KNX Inputs - additional topics to publish

The DALI-gateway works as a MQTT gateway for other KNX devices that like to publish topics (values)



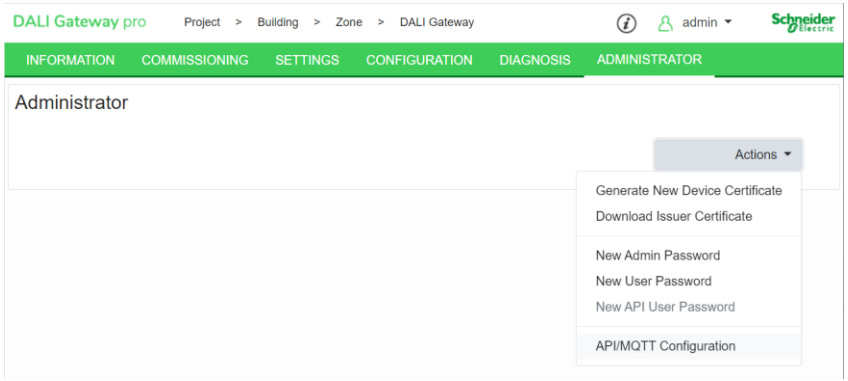
- Up to 16 KNX values can in addition be publisehd
- Data types

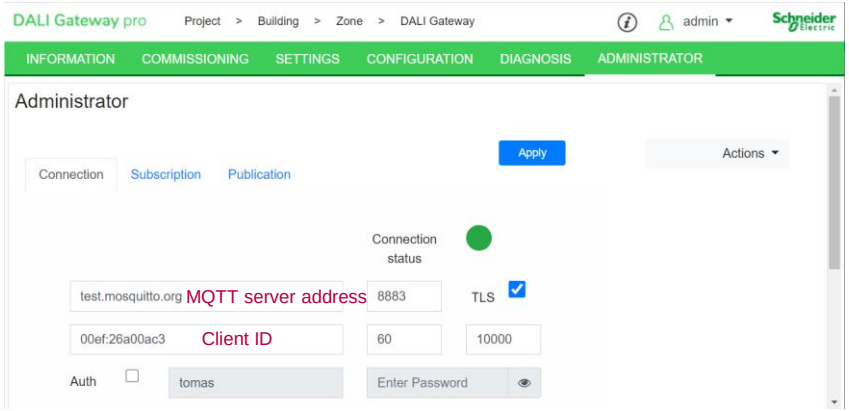


- Available unit types are depending on selected Data type. Some data types also doesn't have a unit

MQTT configuration

In webserver



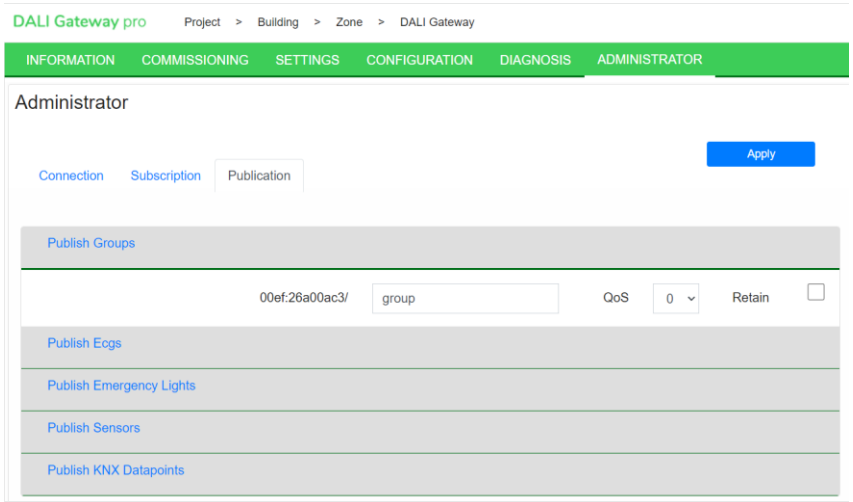


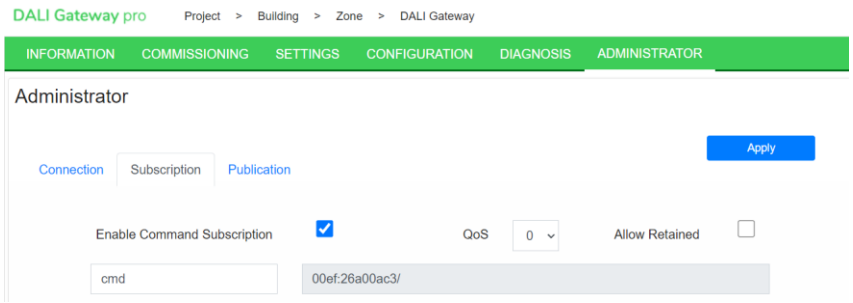
- In the webserver, go to ADMINISTRATOR -> Actions -> API/MQTT Configuration
- Select MQTT in the following dialog

- Enter MQTT URL or IP address
- Enter unique client ID (default dali+serial no.)
- Enter port address and whether TLS shall be used (standard ports: 1883 plain, 8883 TLS)
- Keep alive: 60 s (default)
- Communication timeout: 10000 s (default)
- Auth: Authorization defined by MQTT server
- Click Apply -> Gateway reboots
- Go back and check connection status (green = OK)

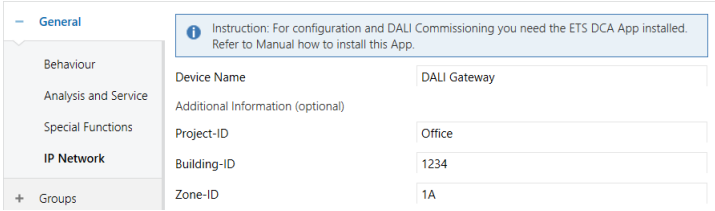
MQTT configuration

Publication and Subscription



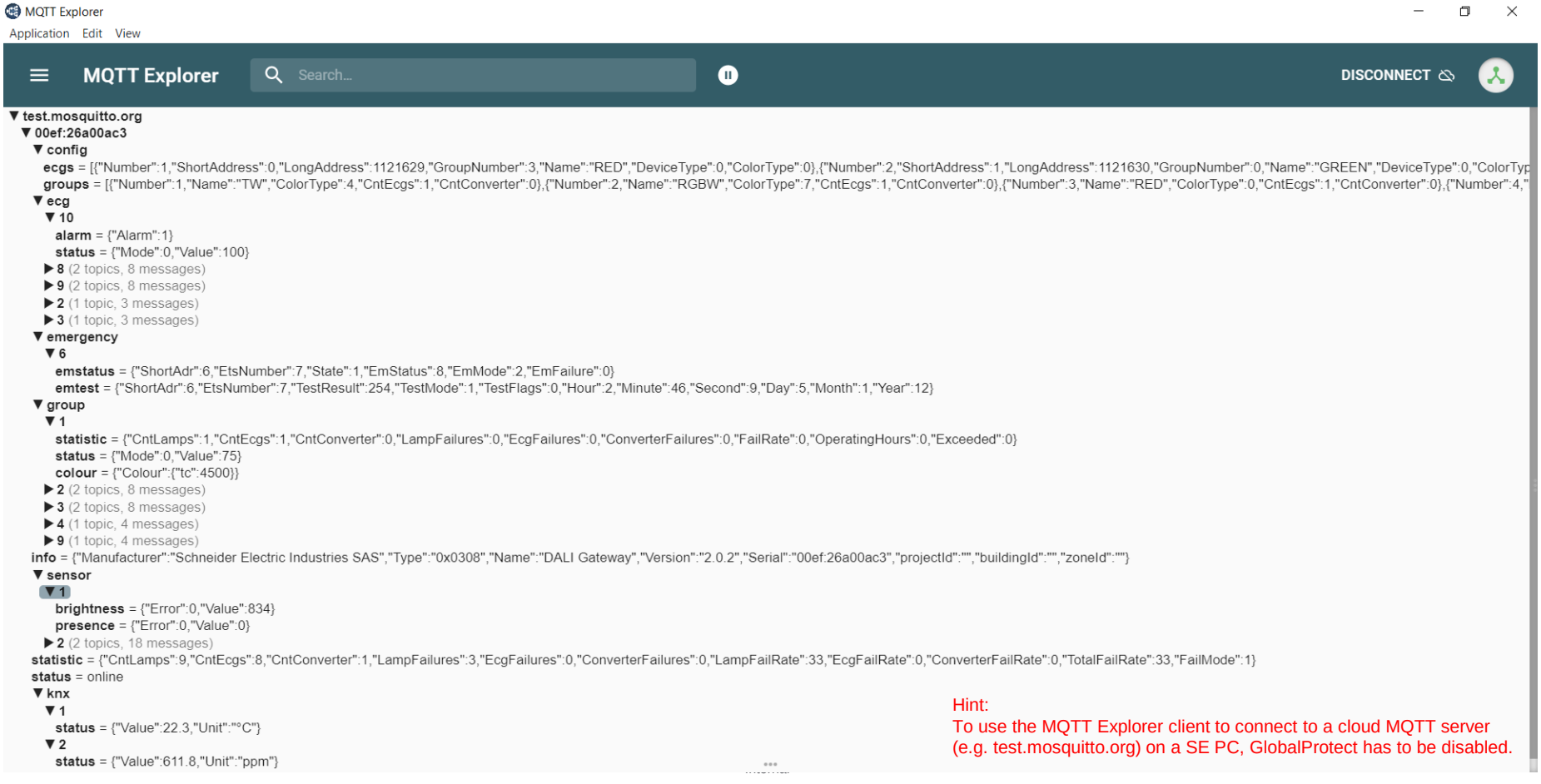


- The main topic can be only the client ID, but can also contain several location attributes which are set in the ETS parameters [Project-ID/][Building-ID/][Zone-ID/]client-ID, e.g. Office/1234/1A/00ef:26a00ac3/



- The next topic level names can be changed, i.e. group, ecg, emergency, sensor, knx
- Also the functions QoS (0, 1, 2) and Retain flag can be changed.
- By enabling “Subscription” properties of groups and individually controlled ECGs can be changed
  - On/Off, e.g:
    cmd/00ef:26a00ac3/group/1/status, payload on or off
  - Brightness value, e.g:
    cmd/00ef:26a00ac3/group/1/status, payload 0-255 or 0-100%
  - Colour temperature (or Colour), e.g.
    cmd/00ef:26a00ac3/group/1/status, payload 0-10000

Example: Published topics seen with MQTT Explorer client



Hint:
To use the MQTT Explorer client to connect to a cloud MQTT server (e.g. test.mosquitto.org) on a SE PC, GlobalProtect has to be disabled.