



# MQTT API

**V1.3**

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Nuki Home Solutions GmbH  
Münzgrabenstrasse 92/4, 8010 Graz

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# 1. Introduction

The MQTT API offers the possibility to connect supported Nuki products to an MQTT server in order to allow basic control of them, similar to the functionality available via the Bridge HTTP-API such as retrieving the current lock state and performing lock operations.

Supported product is currently only the Smart Lock 3.0 Pro.

Check for the latest version of this document at our [Developer Platform](#).

## 2. Provisioning & API activation

Connections will only be established to MQTT servers in the local LAN. I.e. either the hostname has to resolve to a local IP or a local IP is given as hostname (10.0.0.0 - 10.255.255.255, 172.16.0.0 - 172.31.255.255, 192.168.0.0 - 192.168.255.255).

### 2.1 Beta

If the Smart Lock 3.0 Pro runs a beta firmware and if the debug mode of the Smart Lock is enabled, a connection to a hardcoded MQTT server will be automatically established using the following login credentials:

Server: *mqtt.local* (mDNS) or *mqtt* (DNS). The Smart Lock first tries to resolve *mqtt.local* via mDNS. If this does not work, it tries to resolve *mqtt* via DNS. Connection attempts are made twice per hour and immediately after every successful WiFi reconnect.

Port: *1883*

Username: *nuki*

Password: SHA256 hash of the WiFi Password stored in the Smart Lock WiFi settings. The SHA256 hash has to be lowercase.

Example:

WiFi Password = *1234567890*

SHA256 = *c775e7b757ede630cd0aa1113bd102661ab38829ca52a6422ab782862f268646*

Source: <https://emn178.github.io/online-tools/sha256.html>

### Remarks for the current beta implementation:

- How to become a beta tester is [described here](#).
- How to enable Debug mode:  
Tap 7x on the Settings > Features & Configuration > “NUKI SMART LOCK” headline.
- After enabling debug mode, it can take up to one minute until the Smart Lock connects or disconnects from the MQTT server.
- The reconnect mechanism for the Smart Lock 3.0 Pros WIFI connection is bound to a successful connection to the Nuki server. i.e. you can not isolate the Smart Lock from the internet as this will lead to reconnect attempts involving WIFI log off/ons with exponentially growing downtimes in between. Likewise an unstable internet connection can lead to MQTT reconnects and downtimes.
- When the debug mode of the Smart Lock and “LED signal on the Smart Lock” are both active, the red LED of the Smart Lock acts as a traffic indicator for incoming WIFI packets, similar to a traffic indicator of a network switch. Turn off “LED signal on the Smart Lock” to disable this diagnostic feature.
- MQTT connections are not encrypted. The beta does not support Secure MQTT connections via TLS.

## 2.2 Final version (planned for later):

Provisioning of an MQTT server is done via the Nuki App by choosing Administration > Built-in WiFi > Configure MQTT and typing in the server credentials (hostname, port, username, password).

## 3. Data Models

### 3.1 Device Types

ID	name
0	Smart Lock
2	Opener
3	Smart Door
4	Smart Lock 3.0 (Pro)

### 3.2 Modes

mode	smartlock	opener	Description
2	door mode	door mode	Operation mode after complete setup
3	-	continuous mode	Ring to Open permanently active

### 3.3 Lock States

ID	smartlock	opener
0	uncalibrated	untrained
1	locked	online
2	unlocking	-

3	unlocked	rto active
4	locking	-
5	unlatched	open
6	unlocked (lock 'n' go)	-
7	unlatching	opening
253	-	boot run
254	motor blocked	-
255	undefined	undefined

### 3.4 Lock Actions

ID	smartlock	opener
1	unlock	activate rto
2	lock	deactivate rto
3	unlatch	electric strike actuation
4	lock 'n' go	activate continuous mode
5	lock 'n' go with unlatch	deactivate continuous mode
6	full lock	
80	fob (without action)	fob (without action)
90	button (without action)	button (without action)

## 3.5 Simple Lock Actions

Possible outcome of a simple lock action (mapping handled in the firmware of the device):

action	smartlock / knob	smartlock / handle	opener
lock	lock	lock	deactivate rto and cm
unlock	unlatch	unlock	open

## 3.6 Doorsensor States

ID	name
1	deactivated
2	door closed
3	door opened
4	door state unknown
5	calibrating
16	Uncalibrated
240	Tampered
255	Unknown

### 3.7 Trigger

ID	name
0	system / bluetooth command
1	(reserved)
2	button
3	automatic (e.g. time control)
6	auto lock



## 4. Topics

### 4.1 Topic Structure

Each Nuki device publishes to the same structure of topics:

***nuki/nuki\_id\_in\_hex/Topic***

The Nuki ID in hexadecimal format is printed on the device itself and also shown in the device administration. e.g. 2BB28570.

### 4.2 Published Topics for Device States

The following topic structure is available per device and updated whenever an update to a device state occurs. In addition the “last updated” timestamp is changed with every update. The retain flag is activated with all topics and QOS = 0 is used.

Topic	Description	Example
<b>deviceType</b>	Nuki device type (see <a href="#">Device Types</a> )  Beta: Only device Type 4 = Smart Lock 3.0 Pro is supported	4
<b>name</b>	Name of the device	Home door
<b>firmware</b>	Current firmware version of the device	3.2.0
<b>mode</b>	ID of the lock mode (see <a href="#">Modes</a> )	2
<b>state</b>	ID of the lock state (see <a href="#">Lock States</a> )	1
<b>batteryCritical</b>	Flag indicating if the batteries of the Nuki device are at critical level	true
<b>batteryChargeState</b>	Value representing the current charge status in %	18

<b>batteryCharging</b>	Flag indicating if the batteries of the Nuki device are charging at the moment	false
<b>keypadBatteryCritical</b>	Flag indicating if the batteries of the paired Nuki Keypad are at critical level	false
<b>doorsensorState</b>	ID of the door sensor state	2
<b>doorsensorBatteryCritical</b>	Flag indicating if the batteries of the paired Nuki Door Sensor are at critical level	false
<b>ringactionTimestamp</b>	Timestamp of the last ring-action. Only for Nuki Opener.	2018-10-03T06:49:00+00:00
<b>serverConnected</b>	Connection state to the Nuki server.	true
<b>timestamp</b>	Timestamp of the retrieval of the last update	2018-10-03T06:49:00+00:00
<b>connected</b>	Indicates if the device is currently connected to the MQTT server or not. Uses "false" as the last will message, which will be set by the mqtt server automatically if the device disconnects.	true

### 4.3 Published and Subscribed Topics for Device Control

The following topic structure allows to send commands to the device via a topic to which the device subscribes. For all messages QOS = 2 is used. The retain flag is not set.

Topic	Description	Example
<b>lockAction</b>	ID of the desired <a href="#">Lock Action</a> . Only actions 1-6 are supported.	1

<b>lock</b>	Set to “true” to execute the <a href="#">simple lock action “lock”</a>	true
<b>unlock</b>	Set to “true” to execute the <a href="#">simple lock action “unlock”</a>	true
<b>commandResponse</b>	<p>The Nuki device publishes to this topic the return code of the last command it executed:</p> <p>0 = Success 1-255 = Error code as described in the <a href="#">BLE API</a>.</p> <p>Note: Nuki devices can only process one command at a time. If several commands are sent in parallel the commandResponses might overlap.</p>	0
<b>lockActionEvent</b>	<p>The Nuki device publishes to this topic a comma separated list whenever a lock action is about to be executed:</p> <ul style="list-style-type: none"> <li>• <a href="#">LockAction</a></li> <li>• <a href="#">Trigger</a></li> <li>• Auth-ID: Auth-ID of the user</li> <li>• Code-ID: ID of the Keypad code, 0 = unknown</li> <li>• Auto-Unlock (0 or 1) or number of button presses (only button &amp; fob actions) or Keypad source (0 = back key, 1 = code, 2 = fingerprint)</li> </ul> <p>Only lock actions that are attempted to be executed are reported. E.g. unsuccessful Keypad code entries or lock commands outside of a time window are not published.</p>	<p>Unlatch via Keypad with Auth-ID 54321 from Code-ID 12345: 3,0,54321,12345,1</p> <p>Auto-Unlock via App from Auth-ID 54322: 1,0,54322,0,1</p> <p>Lock’n Go via Button: 4,2,0,0,0</p> <p>Button configured to “no action on double click” and pressed twice: 90,2,0,0,2</p> <p>Fob with auth-id 54322 configured to “unlatch” on triple click and pressed 3x: 3,3,54322,0,3</p>

## 5. Changelog

### 1.3 - 27.10.2022

- Added lockActionEvent
- Added Triggers
- Added Button & Fob (without action) to Lock Actions
- Document clean up

### 1.2 - 27.9.2022

- Changed hostname for dns resolution
- Added remarks for beta implementation

### 1.1 - 26.7.2022

- Removed ringactionstate
- Removed that serverConnected is limited to SL3P. In case of a Nuki bridge holding the MQTT connection, serverConnected would mirror the connection state of the bridge.

### 1.0 - 19.7.2022

- Initial version