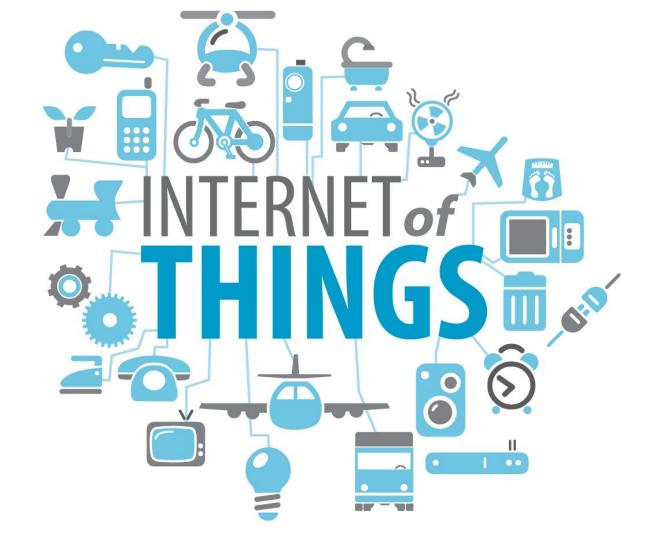
# MQTT Device Description

Bachelor Thesis Adrian Bärtschi

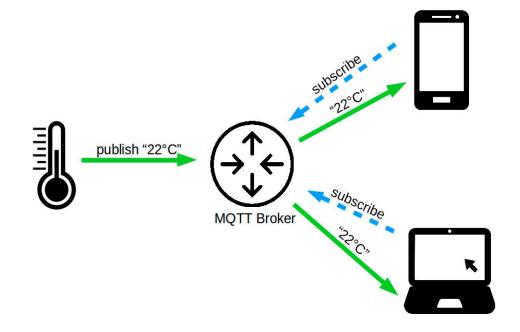


### **MQTT**

**Constrained Devices** 

Publish/Subscribe

Topics



### Problem

#### **Keine Topic Discovery**

"home/livingroom/getTemp"?

"home/temperatur/livingroom?"

"home/sensor1/temp"?

..

#### Problem

Keine Topic Discovery

#### **Payload Encoding**

02dc990 696c 6e65 2f74 716d 7474 3376 492f 714d 02dc9a0 7474 6341 6974 6e6f 694c 7473 6e65 7265 02dc9b0 632e 616c 7373 4b50 0201 0314 000a 0000 02dc9c0 0008 3920 4652 a66e b98c 1af9 0000 4b7a 02dca30 01be 0000 0034 0000 0000 0000 0000 0000 02dc990 696c 6e65 2f74 716d 7474 3376 492f 714d 02dc9a0 7474 6341 6974 6e6f 694c 7473 6e65 7265 02dc9b0 632e 616c 7373 4b50 0201 0314 000a 0000

#### Problem

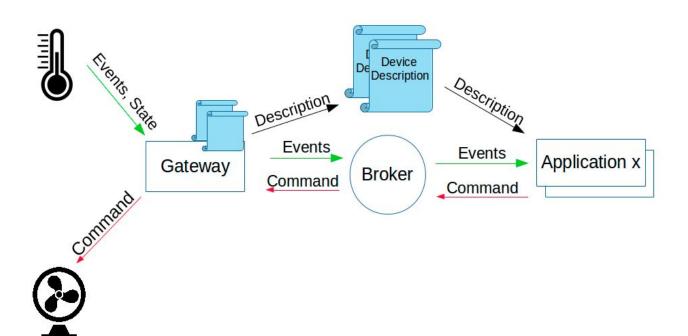
Keine Topic Discovery

Payload Encoding

**Message Interpretation** 

```
{
        "value": 22.3
```

# Lösung



## **Device Description**

State

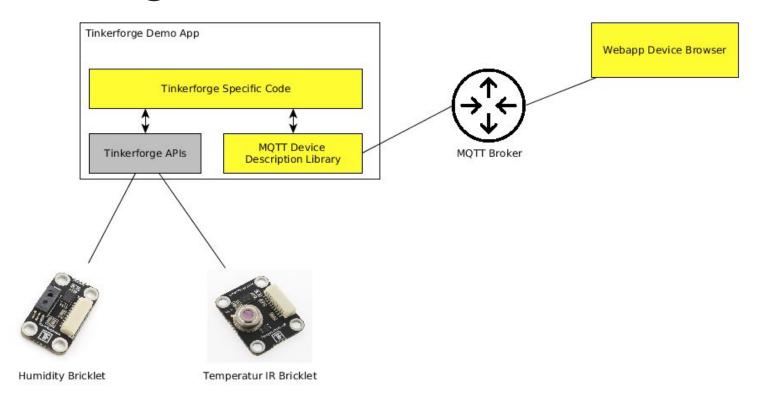
**Events** 

Commands

YAML / JSON

```
id: "IoT-Humidity Sensor"
description: "The Humidity sensor can be used to measure relative humidity."
stateDescription:
 states:
 - name: "HumidityInterval"
         range:
          min: 0
          max: 9223372036854775807
         type: "Long"
         description: "Interval of the measurements in ms."
eventDescription:
 events:
 - name: "Humidity"
          range:
          min: 0 0
          max: 100 0
         type: "Double"
          description: "Relative Humidity in percent"
commandDescription:
 commands:
 - name: "SetInterval"
         linkedState: "HumidityInterval"
         description: "Set the measurement interval of the sensor, 0 disables the measurements"
          parameter:
          Interval:
          min: 0
          max: 9223372036854775807
         type: "Long"
```

# Umsetzung



Application	Group	Subgroup	Device Type	Device ID	
home	red-brick	tfstack2	Temperature IR Bricklet	qC1	
home	red-brick	tfstack2	Humidity Bricklet	<u>qSG</u>	
			Info	<b>~</b>	
id: "IoT-Humidity	Bricklet"				
version: "0.0.1"	Home data of the co		ld: IoT-Humidity Bricklet		
description: "The Humidity Bricklet can be used to measure relative humidity. The\			Version: 0.0.1		
		directly in percent, n		n be used to measure relative humidity. The	
conversions are n		arreacty in percent, in	measured fluithfully call be read out un	rectly in percent, no conversions are	
\ with configur			necessary, with configurable interval		
stateDescription:					
states:			State	~	
- name: "Humidi	tyInterval"				
range:			HumidityInterval		
min: 0			Interval of the measurements in ms.		
	2036854775807		Value:		
type: "Long			Type: Long		
	"Interval of the meas	urements in ms."	• Min: 0		
eventDescription:			• Max: 9223372036854776000		
events: - name: "Humidi	+v"		Topic home/red-brick/tfstack2/Hu	midity Bricklet/qSG/state/HumidityInterval	
range:	Ly		Topic Home/red-brick/tistack2/10	initially Bricklet 430/state/FlumidityInterval	
min: 0.0					
max: 100.0					
type: "Doub	le"		Events	<b>~</b>	
	"Relative Humidity in	percent"			
commandDescriptio		. •	Humidity		
commands:			Relative Humidity in percent		
- name: "SetInterval"			Value:	Value:	
linkedState: "HumidityInterval"			Type: Double	The state of the s	
description: "Set the measurement interval of the sensor,					
O disables the me	asurements"		• Max: 100		
parameter:			Table   hamaded heid Mr. 10011	and the Delete MacColorest Allered the	
Interval:			Topic home/red-brick/tfstack2/Hu	midity Bricklet/qSG/events/Humidity	
min: 0	272025054775007				
	372036854775807		Subscribe		
type: "Lo	ng				
complexTypes: []					

### Fazit

Viel neu, wenig Erfahrungen

Funktionierendes Konzept

Implementation an System in Praxis

## Vielen Dank