

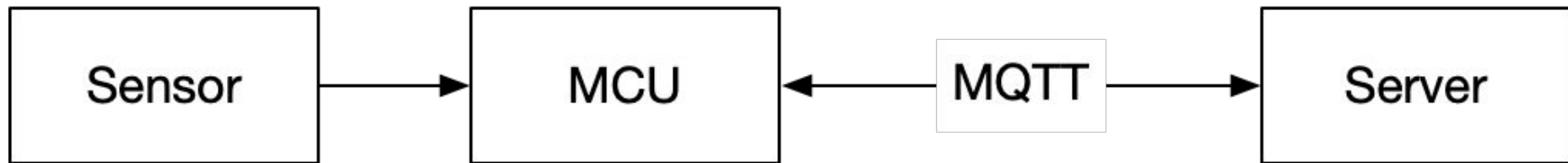
Introduction to MQTT

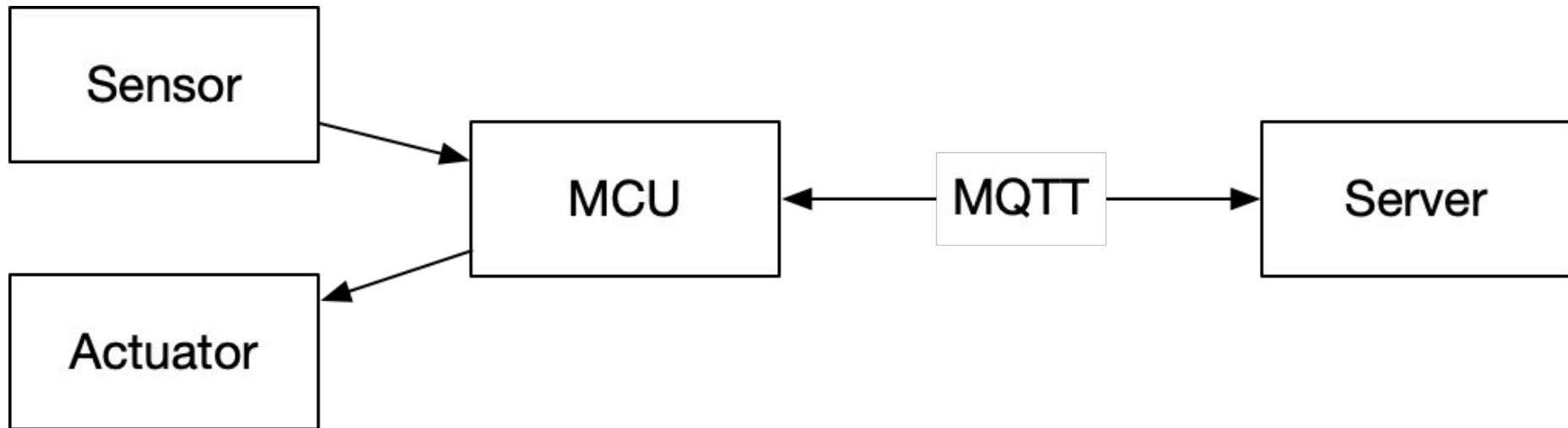
Don Coleman

IoT on AWS

A Philly Cloud Computing Event

CHARIOT
SOLUTIONS





Broker

Client

Topic

home/kitchen/temperature

home/basement/lights

Payload

home/kitchen/temperature

72

home/kitchen/humidity

57

home/kitchen/environment

```
{  
  temperature: 72,  
  humidity: 57  
}
```

home/kitchen/lights

```
{  
  power: "on",  
  brightness: 75  
}
```

```
import paho.mqtt.client as mqtt
```

```
from settings import broker, username, password
```

```
def on_connect(client, userdata, flags, rc):  
    print("Connected")
```

```
client = mqtt.Client()
```

```
client.on_connect = on_connect
```

```
client.username_pw_set(username, password)
```

```
client.connect(broker)
```

```
client.loop_forever()
```

```
def on_connect(client, userdata, flags, rc):  
    print("Connected")  
    client.publish("message", "hello, world")
```



```
topic = "home/kitchen/temperature"  
temperature = sensor.get_temperature()  
client.publish(topic, temperature)
```

```
client = mqtt.Client()
client.on_connect = on_connect
client.on_message = on_message
client.username_pw_set(username, password)
client.connect(broker)
client.loop_forever()
```

```
def on_connect(client, userdata, flags, rc):  
    client.subscribe("home/kitchen/lights")  
  
def on_message(client, userdata, msg):  
    print(f"{msg.topic}: {msg.payload}")
```

#

home/#



home/+/temperature

home/kitchen/+

QoS

Last Will and Testament

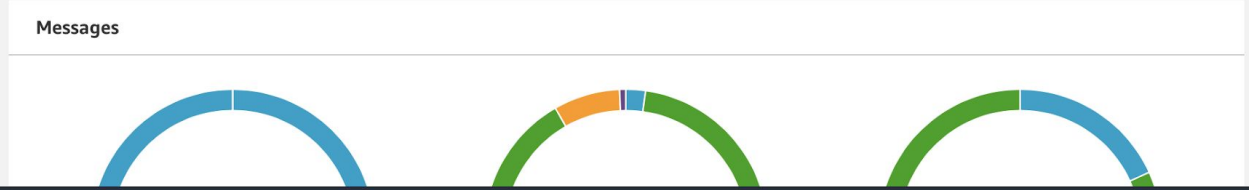
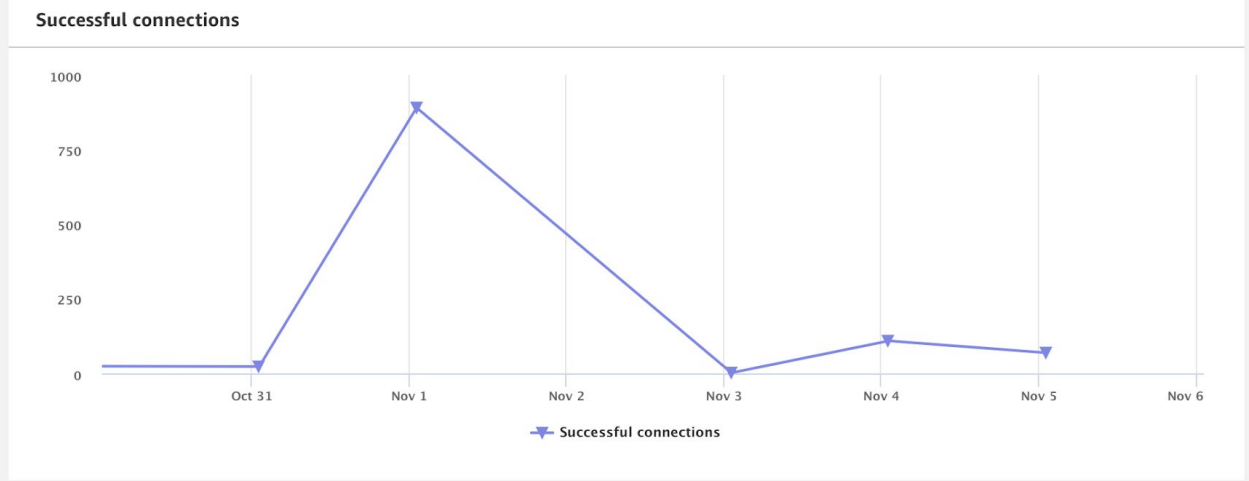
AWS IoT Core



Monitor

Sample period: One day
Time range: Week

- Monitor
- Onboard
- Manage
- Greengrass
- Secure
- Defend
- Act
- Test
- Software
- Settings
- Learn



Policy ARN

A policy ARN uniquely identifies this policy. [Learn more](#)

```
arn:aws:iot:us-east-1:661516571298:policy/ThingPolicy
```

Policy document

The policy document defines the privileges of the request. [Learn more](#)

Version 1 updated Oct 31, 2019 4:42:56 PM -0400

[Edit policy document](#)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Action": "iot:Connect",
      "Resource": [
        "arn:aws:iot:us-east-1:661516571298:client/${iot:Certificate.Subject.Com"
      ],
      "Effect": "Allow"
    },
  ],
}
```

Rule query statement

Edit

The source of the messages you want to process with this rule.

```
SELECT topic(2) as device, timestamp() as timestamp, * FROM
'things/+/environment'
```

Using SQL version 2016-03-23

Actions

Actions are what happens when a rule is triggered. [Learn more](#)



Split message into multiple columns of a Dyna...
environment

Remove

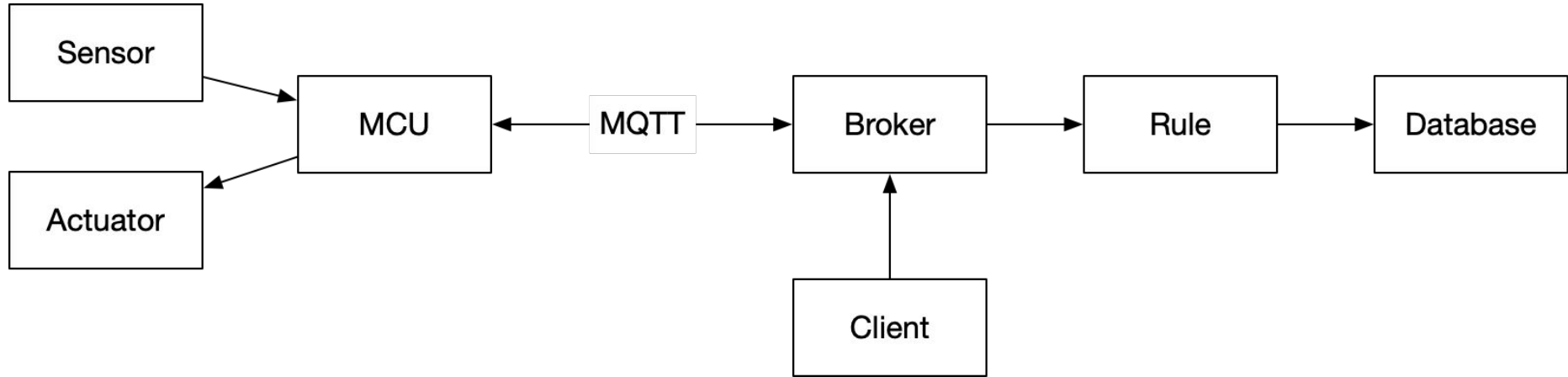
Edit ▶



Send a message to an Amazon Kinesis Stream
iot-data

Remove

Edit ▶



Questions?



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