What is mqtt

Describe, background, good stuff

Real world applications

//What does it do

How does it connect

Use what technique,

How does it receive data

# Background

MQTT(MQ Telemetry Transport) is a light weight event and message oriented protocol which allows devices to asynchronously communicate efficiently across constrained remote networks. It is designed for connections with remote location s where a “small code footprint” is required or where the network bandwidth is limited.

MQTT was built in 1999, with the intention to simplify the connection between the M2M would to the ‘internet of things’. Its use wasn’t controversial until IBM created an open source MQTT. IBM’s version of MQTT had added extra aspect into the design, including a open standard and a list of favourable, neat features.

get controled data events from constrain networks into some where useful

Invented in 1999, got big when ibm did the open source thing, gives open standard, neat features

Lightweight

Fast

Low cost

Small coat footprint, can be put into small devices

Efficient, saves battery life

Real time

Low latency

Low network intensive protocol

Easy to understand and simple to implement

Rapid communication with low network usage

Real time communication

Usage:

It is a messageing pro w imple the publish/subsc messageing (one to many)

Publisher publish message on a topic

Topic = key/ subject of interest

Once topic is published, goes into server / broker

Zero or more Consermuer connected to server express interest in receiving messages on a given topic

The server reevied request, it pushes message to consumers, if 0 consumers, the messages get discarded, if more than one, all will receive

Durable and non durable subscriptions

Durable:

Once a subs is make to broker, if I am connected , I would get message imm, if I am offline, message is stored at broker , will get them when I get online

Non durable:

Only last the life thime the subsers are connected to the broker

Another feature

Retaining message

If message is marked as retained by publisher, Broker remembers the last message on topic, so when subser first subs, they get last topic sent to them , instead of waiting for the next new one

MQTT is designed for constrained networks, and cons systems , fixed header is 2 bybes, very small, compared to http

Push messages to both direction, from prod to server, if theres a client waiting for that message, broker pushes the message across the network, so there is no polling, good mechism for timely delivery of event messages and data between produer and consumers

Polling Is expensive

Two models for working with mqtt, Great for sometime connected model and always online clients≤== timely delivery, good, realtime

Feature:

Last willing testiment

Server see device disconnect abnormally, server publish message on behave of device ,say this device is disconnected, to let other users see it aand save it or fix it

Facebook, busy net work, smart home thing, poor internet area connecction

API:

Create a mqtt client oobject

Java client in paho, instantiate client obj tell what sever to connect to

Client id must be unique, if two tries to connect, the first gets kicked out, bad for atuo signins

Specify connection options and connect to it

// Keepalive() use to detect if connect breaks out , smaller number = quicker to find out but expensive

client.connect(opts)

connect with option

sending message:

creating a message:

create mqt messae, “dfgsd”.getBytes()

everything is in bytes in MQTT

can setRetained(true)

publish

sending a message:

need to know what topic to send to

so get topic and publish

the returned delivery token given by the publish is used to determine when delivery is complete,

asynchronous callback = delivery token

callback()

when msg get to server, a callback listener is notified, and returns token, to tell delivery is completed

connectionLost()

if connection breaks, client will be notified and ask if wanted to reconnect and resubcript

messageArrived()

be told topic, message content, process message in this method

hwo to subcribe:

client.subcribe(“sdf”);

client.unsubcribe(“dfsg”);

Describe clodu mqtt dashboard