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MQTT on the road

Using console and Wireshark

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Who am I ?

@ppatierno

- Senior Software Engineer @ Red Hat
  - Messaging & IoT team
- Lead/Committer @ Eclipse Foundation
  - Hono, Paho and Vert.x projects
- Microsoft MVP on Azure/IoT
- Technologies and protocols “globetrotter”
- Hacking low constrained devices in spare time
- Blogger and speaker about distributed systems, messaging, IoT and embedded “world”

Main features

- Publish/Subscribe
- Last Will Testament
  - “will” message set on brute disconnection or “not alive” client
- Retained message
  - also known as “last well known value”
- Sessions
  - broker saves subscriptions and messages when a client is offline

Packet format

bit	7	6	5	4	3	2	1	0
byte 1	Message Type				DUP	QoS		Retain
byte 2	Remaining length (i.e. length of option + payload)							
byte 3	Variable Header Component							
byte n								
byte m	Payload							
byte n								

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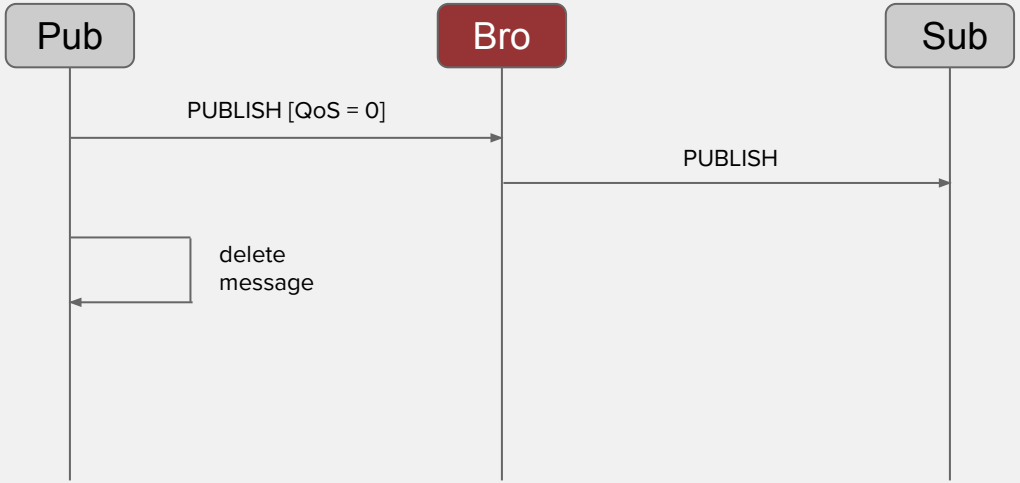
Quality of Service

QoS 0 : at most once (fire and forget)



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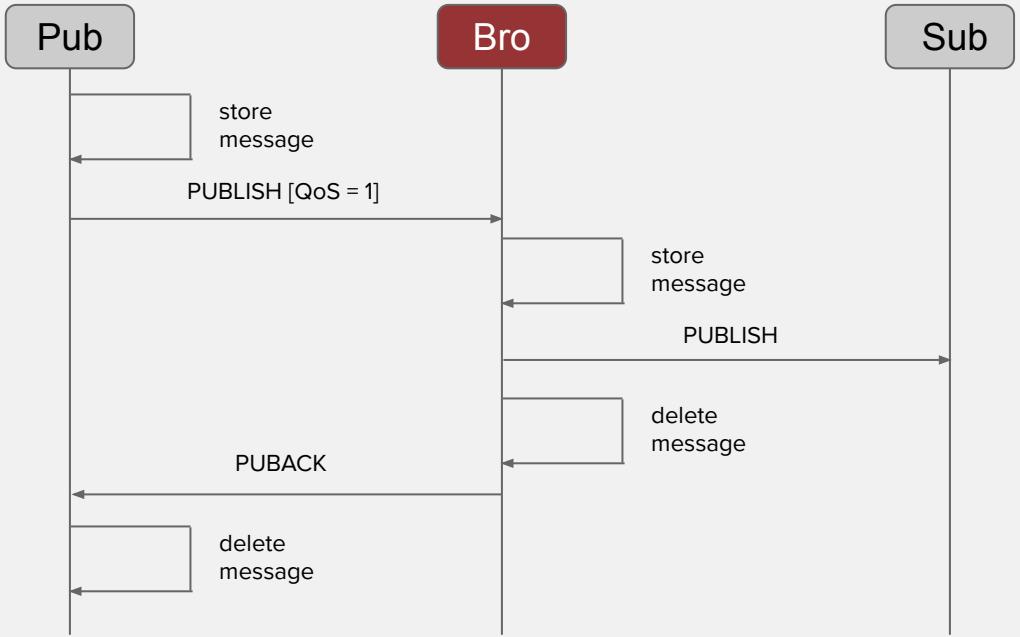
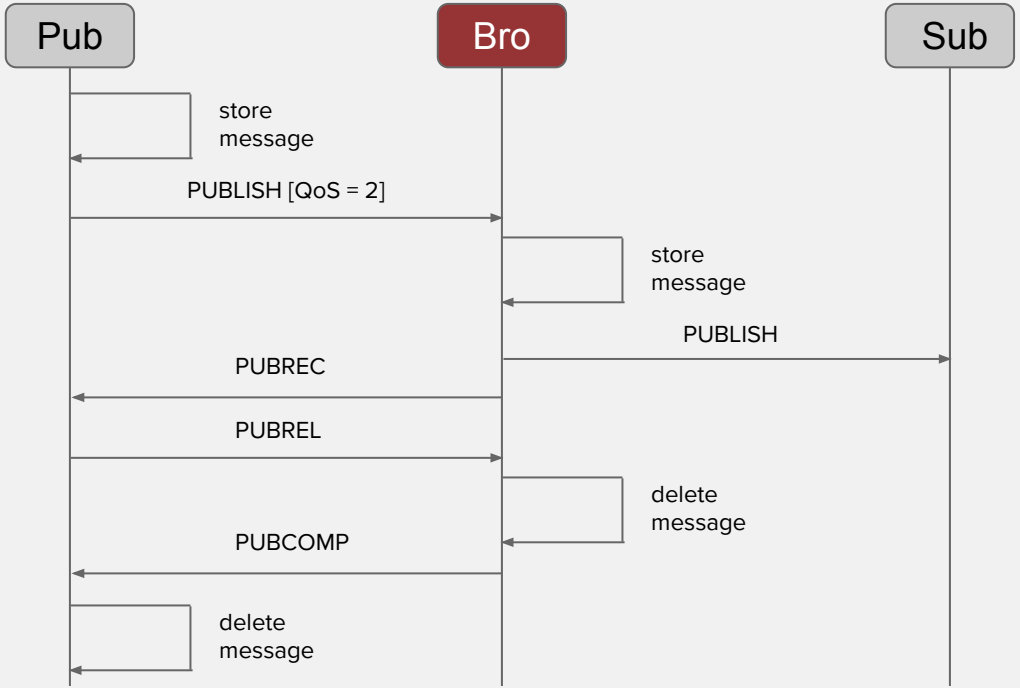
Quality of Service

QoS 1 : at least once



Quality of Service

QoS 2 : exactly once



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Slides end !!

Let’s use console and Wireshark !!

Examples

https://github.com/ppatierno/mqtt-on-the-road

- Connection
- Last Will Testament
- Publish/Subscribe
- Retaining messages
- Sessions
- Connection stealing
- Authentication
- Secure connection
- Request/Reply

Resources

- **MQTT** : http://mqtt.org/
- **MQTT specification** : http://docs.oasis-open.org/mqtt/mqtt/v3.1.1/os/mqtt-v3.1.1-os.html
- **MQTT v5 What is on the way ?** : https://paolopatierno.wordpress.com/2017/08/21/mqtt-v5-what-is-on-the-way/
- **Examples** : https://github.com/ppatierno/mqtt-on-the-road

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Thank you ! Questions ?

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