

# EMQX共享订阅bug记录

程序运行到docker中，测试环境如下

操作系统： Windows 10

Docker版本： Docker Desktop 4.5.1

EMQX版本： 4.4.16

配置文件修改部分如下：

```
broker.shared_subscription_strategy = hash_clientid
broker.shared_dispatch_ack_enabled = true
```

注意：该bug不是必现bug，在经过不到100次共享订阅中，大约出现过4次，但是出现问题后，每次重复之前的操作步骤，bug不会出现。

操作步骤

执行以下命令：

```
mosquitto_sub.exe -i client1 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure
mosquitto_sub.exe -i client2 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure
mosquitto_sub.exe -i client3 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure

mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 1a -i a
mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 2a -i aa
mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 3a -i aaa
```

观察client1和client2，均收到了1a和2a数据。

```
C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
λ mosquitto_sub.exe -i client1 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure
Client client1 sending CONNECT
Client client1 received CONNACK (0)
Client client1 sending SUBSCRIBE (Mid: 1, Topic: $queue/test, QoS: 2, Options: 0x00)
Client client1 received SUBACK
Subscribed (mid: 1): 2
Client client1 received PUBLISH (d0, q2, r0, m1, 'test', ... (2 bytes))
Client client1 sending PUBREC (m1, rc0)
Client client1 received PUBREL (Mid: 1)
Client client1 sending PUBCOMP (m1)
1a
Client client1 sending PINGREQ
```

```
C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
λ mosquitto_sub.exe -i client2 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt
--insecure
Client client2 sending CONNECT
Client client2 received CONNACK (0)
Client client2 sending SUBSCRIBE (Mid: 1, Topic: $queue/test, QoS: 2, Options: 0x00)
Client client2 received SUBACK
Subscribed (mid: 1): 2
Client client2 received PUBLISH (d0, q2, r0, m84, 'test', ... (2 bytes))
Client client2 sending PUBREC (m84, rc0)
Client client2 received PUBREL (Mid: 84)
Client client2 sending PUBCOMP (m84)
1a
Client client2 sending PINGREQ

C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
λ mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 1a -i
a
Client a sending CONNECT
Client a received CONNACK (0)
Client a sending PUBLISH (d0, q2, r0, m1, 'test', ... (2 bytes))
Client a received PUBREC (Mid: 1)
Client a sending PUBREL (m1)
Client a received PUBCOMP (Mid: 1, RC:0)
Client a sending DISCONNECT

C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
λ mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 2a -i
aa
Client aa sending CONNECT
Client aa received CONNACK (0)
Client aa sending PUBLISH (d0, q2, r0, m1, 'test', ... (2 bytes))
Client aa received PUBREC (Mid: 1)
Client aa sending PUBREL (m1)
Client aa received PUBCOMP (Mid: 1, RC:0)
Client aa sending DISCONNECT
```

查看subscriptions:

```
bash-5.1$ emqx_ctl subscriptions list
client2 -> test
client1 -> test
bash-5.1$ |
```

localhost:18083/#/subscriptions

JSON Formatter &...work

EMQX

Monitor

Clients

Topics

Subscriptions

Rule Engine

Analysis

Plugins

Modules

Tools

Alarms

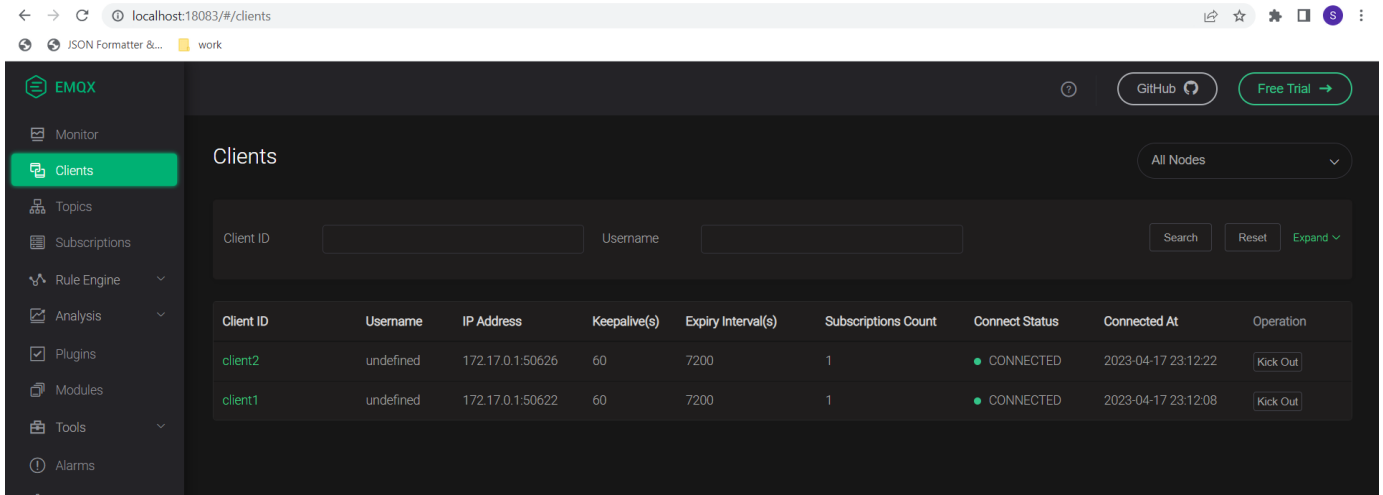
Subscriptions

All Nodes

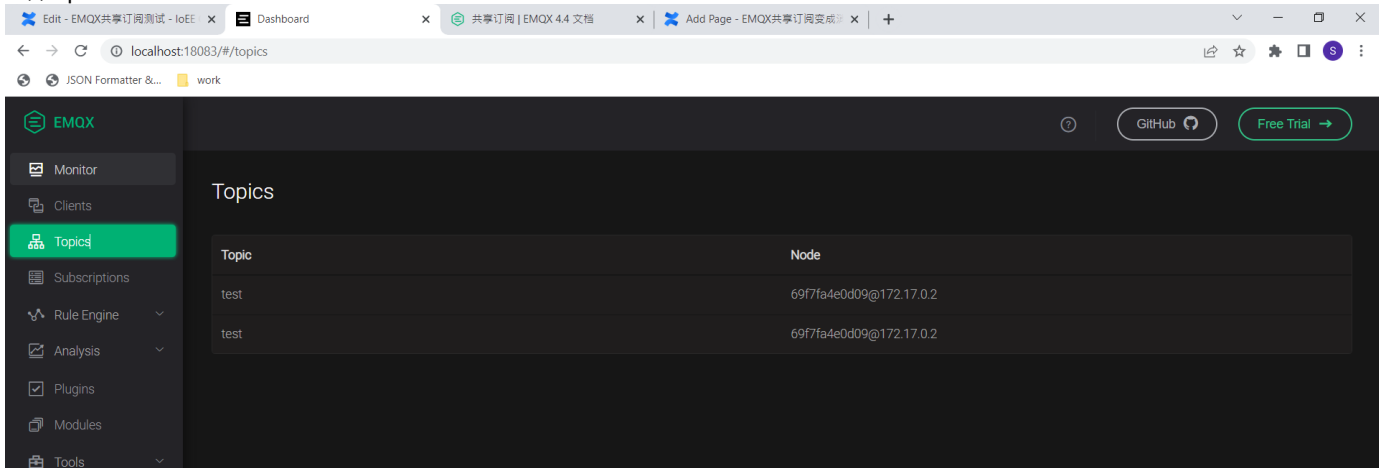
Client IDTopicfilterSearchResetExpand

Client ID	Topic	QoS
client1	\$share/\$queue/test	2
client2	\$share/\$queue/test	2

查看client



## 查看topics



再增加一个client订阅，并使用a,aa,aaa三个客户端发送数据

```
mosquitto_sub.exe -i client3 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure
```

```
mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 1a -i a
mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 2a -i aa
mosquitto_pub.exe -d -t test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 3a -i aaa
```

client1接收2a, client2接收1a, 2a, 3a, client3接收1a, 3a.

看起来client2共享订阅出现了问题，接受了全部数据。

```
Client client1 received PINGRESP
Client client1 received PUBLISH (d0, q2, r0, m3, 'test', ... (2 bytes))
Client client1 sending PUBREC (m3, rc0)
Client client1 received PUBREL (Mid: 3)
Client client1 sending PUBCOMP (m3)
2a
Client client1 sending PINGREQ
Client client1 received PINGRESP
Client client1 sending PINGREQ
Client client1 received PINGRESP
```

```
Client client2 sending PUBCOMP (m87)
1a
Client client2 received PUBLISH (d0, q2, r0, m87, 'test', ... (2 bytes))
Client client2 sending PUBREC (m87, rc0)
Client client2 received PUBREL (Mid: 87)
Client client2 sending PUBCOMP (m87)
2a
Client client2 received PUBLISH (d0, q2, r0, m88, 'test', ... (2 bytes))
Client client2 sending PUBREC (m88, rc0)
Client client2 received PUBREL (Mid: 88)
Client client2 sending PUBCOMP (m88)
3a
Client client2 received PUBLISH (d0, q2, r0, m89, 'test', ... (2 bytes))
Client client2 sending PUBREC (m89, rc0)
Client client2 received PUBREL (Mid: 89)
Client client2 sending PUBCOMP (m89)
1a
Client client2 sending PINGREQ
Client client2 received PINGRESP
Client client2 sending PINGREQ
Client client2 received PINGRESP
```

```
λ mosquitto_sub.exe -i client3 -c -d -t $queue/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key -insecure
Client client3 sending CONNECT
Client client3 received CONNACK (0)
Client client3 sending SUBSCRIBE (Mid: 1, Topic: $queue/test, QoS: 2, Options: 0x00)
Client client3 received SUBACK
Subscribed (mid: 1): 2
Client client3 sending PINGREQ
Client client3 received PINGRESP
Client client3 received PUBLISH (d0, q2, r0, m1, 'test', ... (2 bytes))
Client client3 sending PUBREC (m1, rc0)
Client client3 received PUBREL (Mid: 1)
Client client3 sending PUBCOMP (m1)
1a
Client client3 sending PINGREQ
Client client3 received PINGRESP
Client client3 received PUBLISH (d0, q2, r0, m2, 'test', ... (2 bytes))
Client client3 sending PUBREC (m2, rc0)
Client client3 received PUBREL (Mid: 2)
Client client3 sending PUBCOMP (m2)
3a
Client client3 received PUBLISH (d0, q2, r0, m3, 'test', ... (2 bytes))
Client client3 sending PUBREC (m3, rc0)
Client client3 received PUBREL (Mid: 3)
Client client3 sending PUBCOMP (m3)
1a
Client client3 sending PINGREQ
Client client3 received PINGRESP
Client client3 sending PINGREQ
Client client3 received PINGRESP
```

尝试kick out client2, 并clean session

The screenshot shows the EMQX dashboard with the 'Clients' tab selected. The table displays the following data:

Client ID	Username	IP Address	Keepalive(s)	Expiry Interval(s)	Subscriptions Count	Connect Status	Connected At	Operation
client1	undefined	172.17.0.1:50622	60	7200	1	CONNECTED	2023-04-17 23:12:08	Kick Out
client3	undefined	172.17.0.1:50794	60	7200	1	CONNECTED	2023-04-17 23:30:23	Kick Out

观察topics, 变成了一个topic

The screenshot shows the EMQX dashboard with the 'Topics' tab selected. The table displays the following data:

Topic	Node
test	69f7fa4e0d09@172.17.0.2

2023/4/24更新

我本地mosquitto版本是2.0.14 (windows 10)

```
C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
λ mosquitto_sub.exe --version
mosquitto_sub version 2.0.14 running on libmosquitto 2.0.14.

C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
λ |
```

今天用\$share/\$queue/test没测出来，但是用\$share/g1/test复现了，

测试脚本

```
mosquitto_sub.exe -i client1 -c -d -t $share/g1/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure

mosquitto_sub.exe -i client2 -c -d -t $share/g1/test -q 2 --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure

mosquitto_pub.exe -d -q 2 -t test --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 1a -i a

mosquitto_pub.exe -d -q 2 -t test --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 2a -i aa
```

测试步骤：

1. 先使用client1和client2订阅，然后使用a和aa发布消息，注意要先启动client1和clieng2，订阅成功后再发布消息。观察数据
2. 重复步骤1，有几率出现共享订阅bug。

一下是截图：

The screenshot shows the EMQX web interface. The sidebar on the left contains navigation links: Monitor, Clients (highlighted), Topics, Subscriptions, Rule Engine, Analysis, Plugins, Modules, Tools, Alarms, Settings, and General. The main panel is titled 'Clients' and shows a table of active clients. The table has the following columns: Client ID, Username, IP Address, Keepalive(s), Expiry Interval(s), Subscriptions Count, Connect Status, Connected At, and Operation. There are three rows of data:

Client ID	Username	IP Address	Keepalive(s)	Expiry Interval(s)	Subscriptions Count	Connect Status	Connected At	Operation
client2	undefined	172.17.0.1:58224	60	7200	1	CONNECTED	2023-04-24 06:10:16	Kick Out
client3	undefined	172.17.0.1:58200	60	7200	1	DISCONNECTED	2023-04-24 06:07:53	Clean Session
client1	undefined	172.17.0.1:58236	60	7200	1	CONNECTED	2023-04-24 06:10:58	Kick Out

localhost:18083/#/subscriptions

EMQX

Monitor Clients Topics Subscriptions Rule Engine Analysis Plugins Modules Tools Alarms Settings

Subscriptions

All Nodes

Client ID Topic filter Search Reset Expand

Client ID	Topic	QoS
client3	\$share/\$queue/test	2
client2	\$share/g1/test	2
client1	\$share/g1/test	2

EMQX共享订阅 x Edit - EMQX共享 x Dashboard x paho-mqtt - PyPI x HTTP API | EMQX x emqx - Google S x 面向物联网的现 x 共享订阅bug ( x

localhost:18083/#/topics

EMQX

Monitor Clients Topics Subscriptions Rule Engine Analysis Plugins Modules Tools Alarms Settings

Topics

Topic	Node
test	9f71821b6dfb@172.17.0.2
test	9f71821b6dfb@172.17.0.2

mosquitto的客户端截图如下:

```
Client client1 received PUBREL (Mid: 50)
Client client1 sending PUBCOMP (m50)
1atest
Client client1 received PUBLISH (d0, q2, r0, m51, 'test', ... (6 bytes))
Client client1 sending PUBREC (m51, rc0)
Client client1 received PUBREL (Mid: 51)
Client client1 sending PUBCOMP (m51)
1atest
Client client1 received PUBLISH (d0, q2, r0, m52, 'test', ... (6 bytes))
Client client1 sending PUBREC (m52, rc0)
Client client1 received PUBREL (Mid: 52)
Client client1 sending PUBCOMP (m52)
2atest
Client client1 received PUBLISH (d0, q2, r0, m53, 'test', ... (6 bytes))
Client client1 sending PUBREC (m53, rc0)
Client client1 received PUBREL (Mid: 53)
Client client1 sending PUBCOMP (m53)
2atest
```

```
Client client2 received PUBREL (Mid: 53)
Client client2 sending PUBCOMP (m53)
1atest
Client client2 received PUBLISH (d0, q2, r0, m54, 'test', ... (6 bytes))
Client client2 sending PUBREC (m54, rc0)
Client client2 received PUBREL (Mid: 54)
Client client2 sending PUBCOMP (m54)
1atest
Client client2 received PUBLISH (d0, q2, r0, m55, 'test', ... (6 bytes))
Client client2 sending PUBREC (m55, rc0)
Client client2 received PUBREL (Mid: 55)
Client client2 sending PUBCOMP (m55)
2atest
Client client2 received PUBLISH (d0, q2, r0, m56, 'test', ... (6 bytes))
Client client2 sending PUBREC (m56, rc0)
Client client2 received PUBREL (Mid: 56)
Client client2 sending PUBCOMP (m56)
2atest
Client client2 sending PINGREQ
Client client2 received PINGRESP
```

```
Client a received PUBCOMP (Mid: 1, RC:0)
Client a sending DISCONNECT
```

```
C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
```

```
λ mosquitto_pub.exe -d -q 2 -t test --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m latestest -i a
```

```
Client a sending CONNECT
Client a received CONNACK (0)
Client a sending PUBLISH (d0, q2, r0, m1, 'test', ... (6 bytes))
Client a received PUBREC (Mid: 1)
Client a sending PUBREL (m1)
Client a received PUBCOMP (Mid: 1, RC:0)
Client a sending DISCONNECT
```

```
C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
```

```
λ mosquitto_pub.exe -d -q 2 -t test --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 2atestest -i aa
```

```
Client aa sending CONNECT
Client aa received CONNACK (0)
Client aa sending PUBLISH (d0, q2, r0, m1, 'test', ... (6 bytes))
Client aa received PUBREC (Mid: 1)
Client aa sending PUBREL (m1)
Client aa received PUBCOMP (Mid: 1, RC:0)
Client aa sending DISCONNECT
```

```
C:\documents\SMS2.0\Monitor Center\EMQX certificate\EMQX P\client certificate
```

```
λ mosquitto_pub.exe -d -q 2 -t test --cafile p-cn-deviceID.ca.chain.pem --key schclient.key --cert schclient.crt --insecure -m 2atestest -i aa
```

```
Client aa sending CONNECT
```

我把日志全部都cope出来了，你可以只看 share/g1/test订阅之后的日志