


MQTT Keep Alive test issue

KEEP ALIVE Long Duration test:

this scenario validates if the device successfully disconnects after it doesn't receive a ping response from the broker. The connection must have a valid keep-alive timer configured. As part of this test, the broker blocks all responses sent for PUBLISH, SUBSCRIBE, and PINGREQ messages. It also validates if the device under test disconnects the MQTT connection.

The MQTT specification says the following:

"The Keep Alive ... is the maximum time interval that is permitted to elapse between the point at which the Client finishes transmitting one Control Packet and the point it starts sending the next. It is the responsibility of the Client to ensure that the interval between Control Packets being sent does not exceed the Keep Alive value. In the absence of sending any other Control Packets, the Client MUST send a PINGREQ Packet."

 **Issue:** Keep Alive test failed


Keep Alive


 Failed

Device failed to disconnect after 90.0 seconds.


What's going on?

The device continuously streams messages to the cloud. It sends new packets without waiting for broker confirmation for the previous ones. Therefore, without receiving an acknowledgment, we can't state that the transfer has been completed. But since for the MQTT library treats keep alive interval as the value between consecutive transfers, it erroneously resets the Keep Alive timer value ignoring the fact that messages might not be sent. And accordingly, the client doesn't react in any way - Keep Alive timer is reset and the connection re-establishment mechanism doesn't launch. Finally, Device Advisor test identifies the error.

 **Conclusion:** coreMQTT library resets the Keep Alive timer value when the device publishes a new message without waiting for an ACK.

 **Temporary Solution:** Disable continuous stream of messages published to MQTT to make Keep Alive mechanism work and to pass Keep Alive test. However, this is not applicable to real world scenarios.

Keep Alive

 Passed

No issues found