



Varroa

MQTT-Scenario-Testing-Tool

Masters Level Study Project, Prof. PhD. Siebert
SS 2018 - WS 2018/2019

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1 Vision

The Name of our MQTT-Scenario-Testing-Tool is inspired by Varroa mites. Varroa is a species of mites that infest honeybee colonies. Our MQTT-Scenario-Testing-Tool with the same name works in similar ways: it targets MQTT-brokers and tests their resilience to load. In that context load can be defined as the utilization of a MQTT-broker due to a big amount of MQTT-clients connected, that publish and subscribe to a lot of topics and show complex sequences of their interactions with the broker.

Varroa simulates the behaviour of large amounts of MQTT-clients – called scenarios – to determine the limit of the loading capacity of the targeted MQTT-Broker. As a speciality Varroa is organized as a distributed system, due to the almost impossible simulation of enough MQTT-clients on a single machine to overload a MQTT-Broker, especially if the broker is also a distributed system.

2 Requirements

2 Requirements

#	Title	User Story	Importance
1	Transparency	Varroa has to be comprehensible for the user.	Must have high
2	10.000.000 MQTT Clients	Varroa has to be able to generate a large amount of clients.	Must have high
3	Scalability	Varroa should scale vertically with relatively low scaling costs.	Must have
4	Determinism	Varroa has to work in deterministic ways, meaning it should produce the same result for a Scenario every time.	Must have
5	Distributed	Varroa is a distributed System.	Must have low
6	Usability	Varroa has to be easily usable.	Very important
7	Code Quality	Varroa's coding quality should be very high.	Important
8	Stability	Varroa has to run in a stable manner.	Important
9	Resource efficiency	Varroa has to use the available computation and memory resources efficiently.	Important
10	User / Developer Guide	Varroa needs a User / Developer Guide.	Somewhat important
11	Automation capacity	Varroa should be automatable	Somewhat important

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