Virtualization 1 - Project

MQTT

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What is MQTT

Problem 1

- Big computation
- Easily parallelizable
- Can be run on multiple machines
- No (easy) way to make the output thread coherent

Problem 2

- Many databases
  - need the same data
  - need data from remote location
- Need to be up to date every time they connect

What is MQTT

Problem 3

- High latency/unreliable network
- Internet of things

Solution

MQTT:

- **Message Queuing Telemetry Transport**
- Publish/Subscribe Protocol
- "The Core of MQTT is the **Topic**"
  - Numerical units can publish to a topic
  - Database client can subscribe to a topic

MQTT

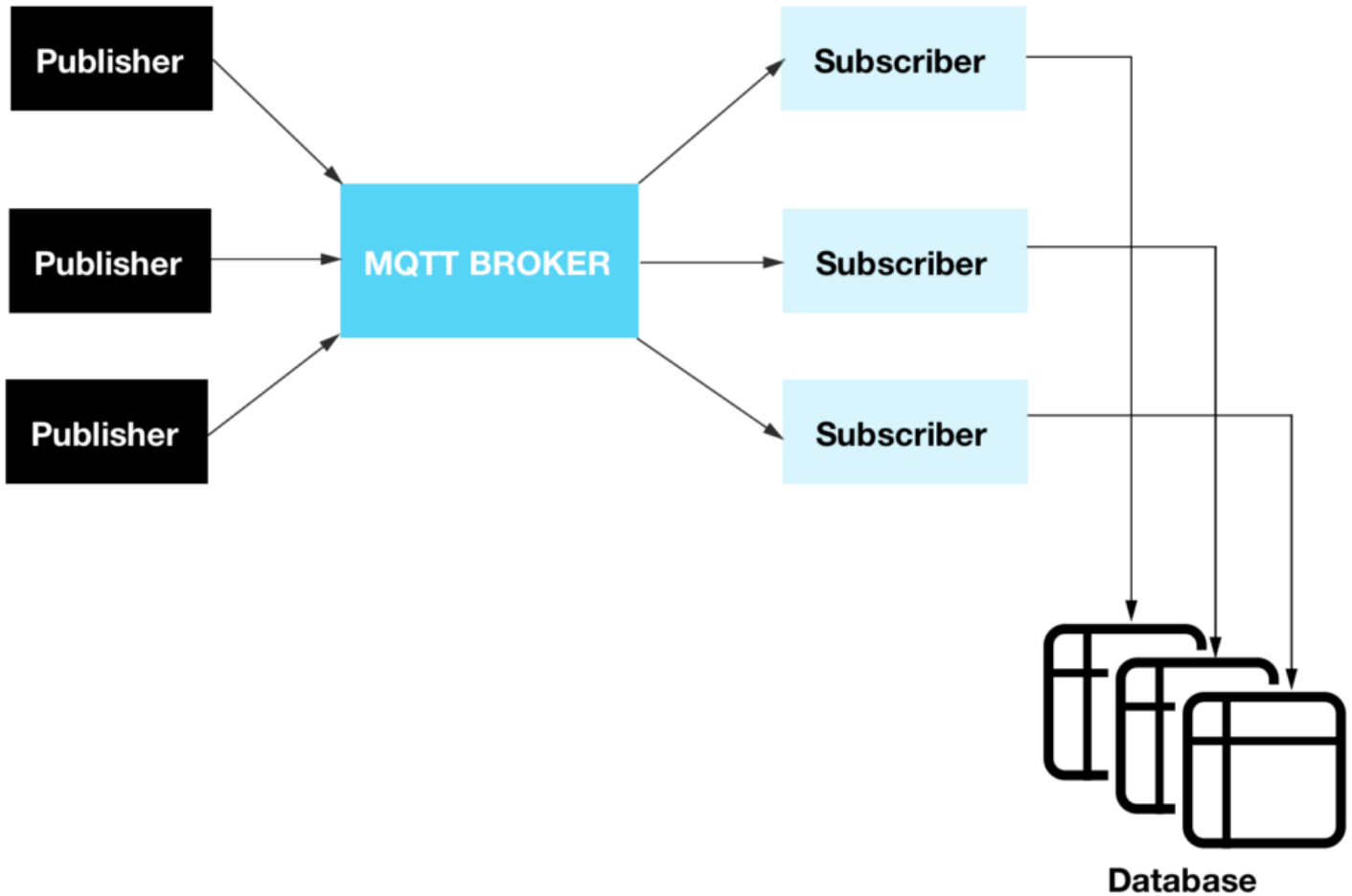

Figure 1:

MQTT

Typical Setup

- MQTT broker running in docker a container
- Numerical client(s) generating numbers in a container
- Database(s) with some glue code in the third container

MQTT

Project

- Database: python running sqlite3
- MQTT broker: Eclipse-Mosquitto
- Numerical side: prime-generator using the "**Sieve of Eratosthenes**"

Sources

Image

- https://crate.io/a/getting-started-cratedb-mqtt-endpoint/ # The End
  Thank you for your attention