**Discussion 3**

Design a scalable data acquisition service to support streaming of time series data of energy consumed by 100s of machines on a factory floor, aggregated every minute. The payload of the messages will be less than 1KB. The data store must store energy consumed by each machine for every minute of operation.

Can you draw the architecture of an ingestion system using MQTT for writing this data to a relational database? How would the table/s look like at the Relational DB end?

Formatted timeseries data from every machine

Data from 100s of machines collected every minute

Energy consumed

Energy consumed

Energy consumed

Relational DB

Subscriber

On-premise  
MQTT Broker

Machine n

Machine 2

Machine 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| machine\_asset | | | | | | |
| machine\_id | type | machine\_make | machine\_model | year\_produced | department | room\_# |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| sensor\_data | | | | | |
| machine\_id | sensor\_name | value | error | date | timestamp |
|  |  |  |  |  |  |