Managing Sensors Data using Time-series Databases and a Comparison between three Prominent Representatives

Javad Majidizadeh Bozorgi, B.Sc., TU Clausthal

The Internet of Things (IoT) is the future of managing and controlling our environment. From the IoT point of view there is a huge amount of time-series data every second in our environment which needs to be collected, stored and analyzed. Therefore, we need optimized systems known as time series databases (TSDB) for handling large-scale time-series data. This large-scale data is usually called big data. Big data is meanwhile a very popular term that describes important characteristics of big data, such as volume, velocity and variety. In many application domains, the collection and analysis of big data may lead to a better decisions.

There is a range of different time-series databases, but which one should we choose is based on our system requirements and before that we must know capabilities of databases to have a better decision. Explore in some open time-series databases, evaluate them and find a suitable solution to saving collected time-series data from sensors based on my use case is the objective of this thesis. In the thesis, I will compare the performance and core features of three prominent representatives TSDB, namely InfluxDB, OpenTSDB and KairosDB, for common time-series workloads.