Developing a generic IoT solution to prepare production lines for Industry 4.0

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This project revolves around developing a generic IoT solution to prepare for Industry 4.0. The primary objective was to achieve the first two steps of the Acatech Industry 4.0 maturity study development track. Should this objective be reached, the secondary objectives were to implement as many Industry 4.0 development track stages as possible, in order.

PROBLEM

SOLUTION

Older machines are not always equipped with modern sensors or only have data available in a closed protocol.

**Equip these machines with sensor nodes that measure and aggregate machine data. This way the machine can remain in use.**

An interconnected, scalable and robust messaging system is needed in order to handle large amounts of varied data.

Apache Kafka is an hybrid messaging system built for performance and scalability. Implementing it solves the problem of having to handle large amounts of data.

A flexible way of persistently storing and querying time series data is needed.

InfluxDB is a time series database management system optimized for IoT data.

Data needs to be visualised in order to be properly analysed.

Grafana is a data visualization tool that provides intuitive dashboards for quick data summary and analysis.
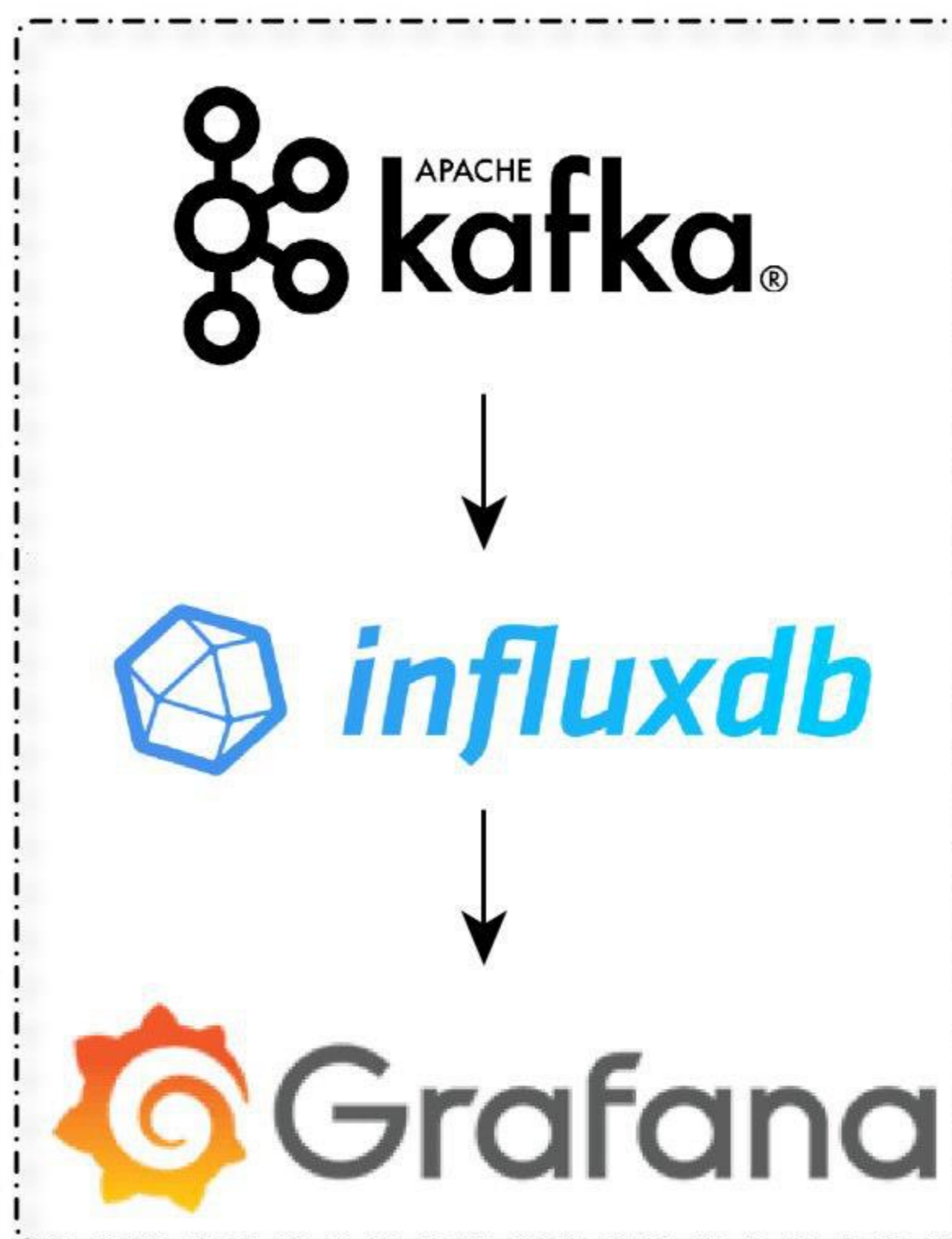
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