

Technologies for Advanced Programming

Project by **Matteo Galletta** – A.Y. 2024/2025

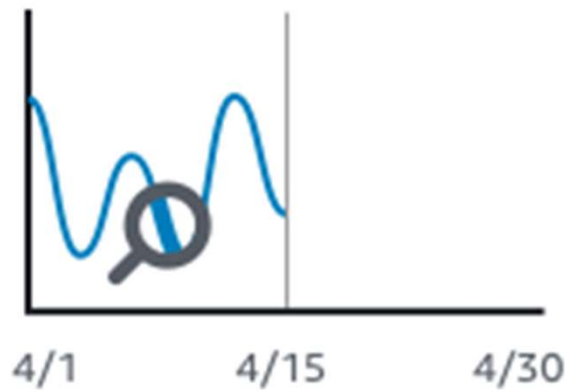
FastID Report

A real time pipeline with an online learning model allowing predictive scaling

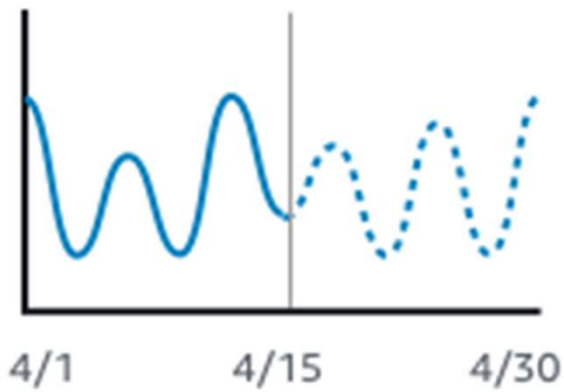
Prof: Salvatore Nicotra

What's predictive scaling?

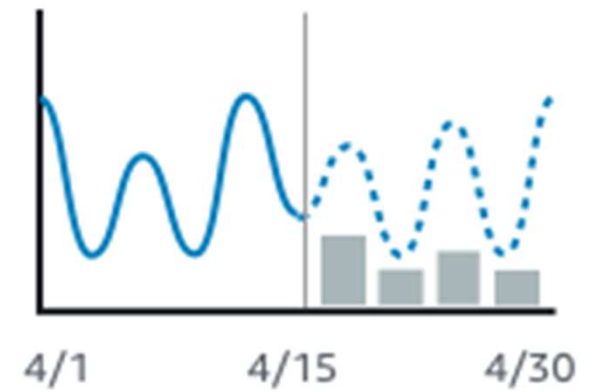
Analyze historical load



Generate forecast

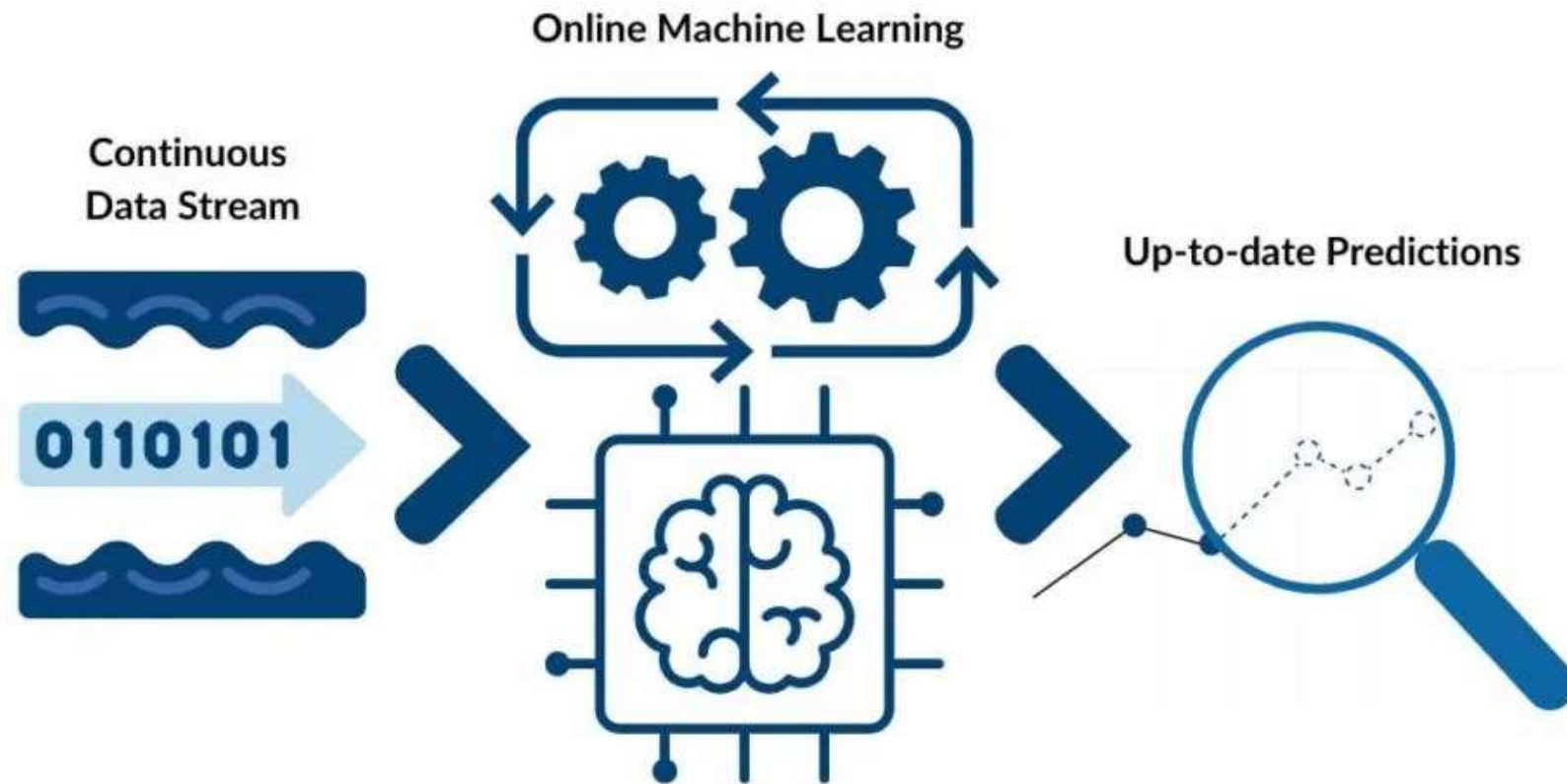


Schedule scaling actions



— Load ■ Capacity

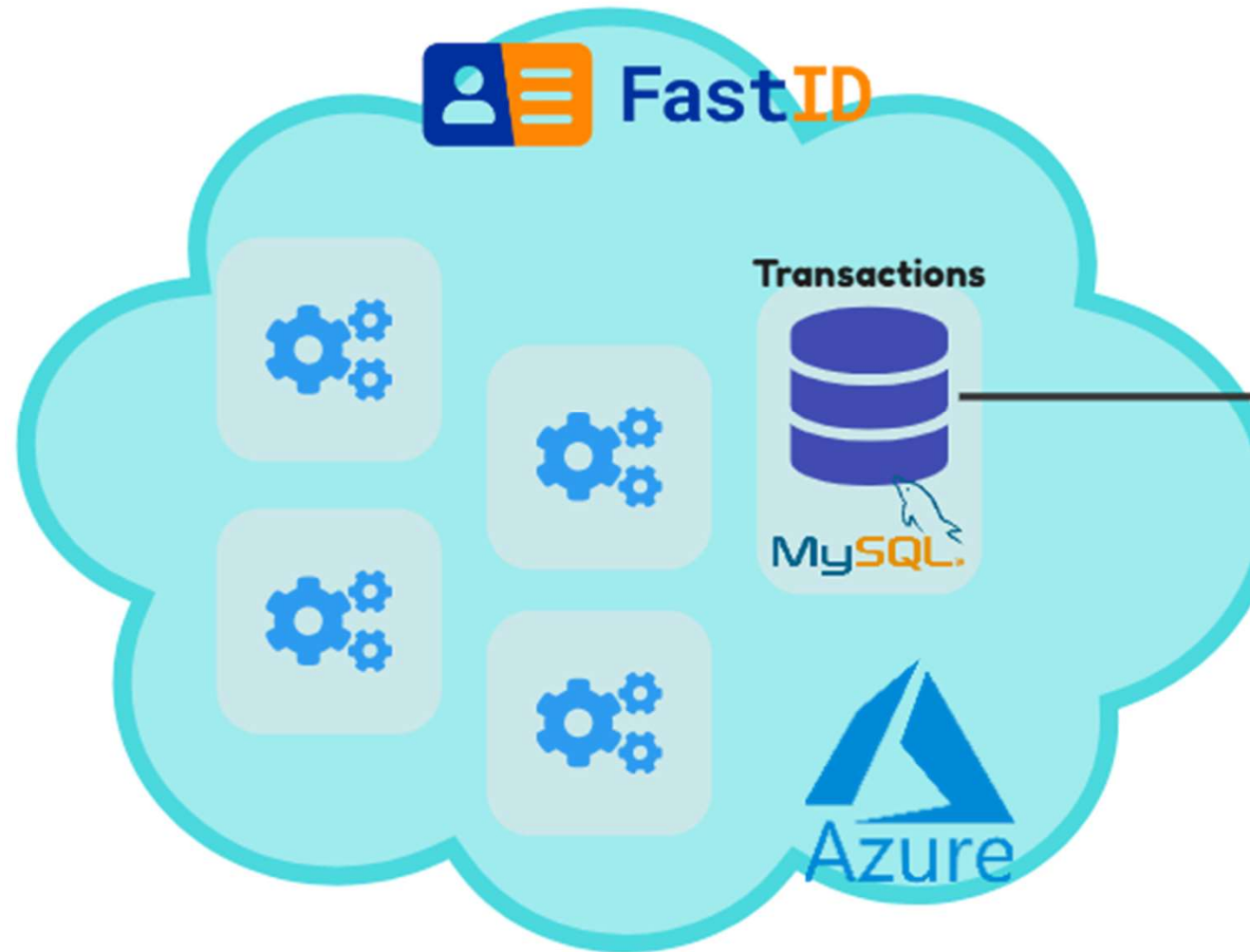
What's an online learning model?



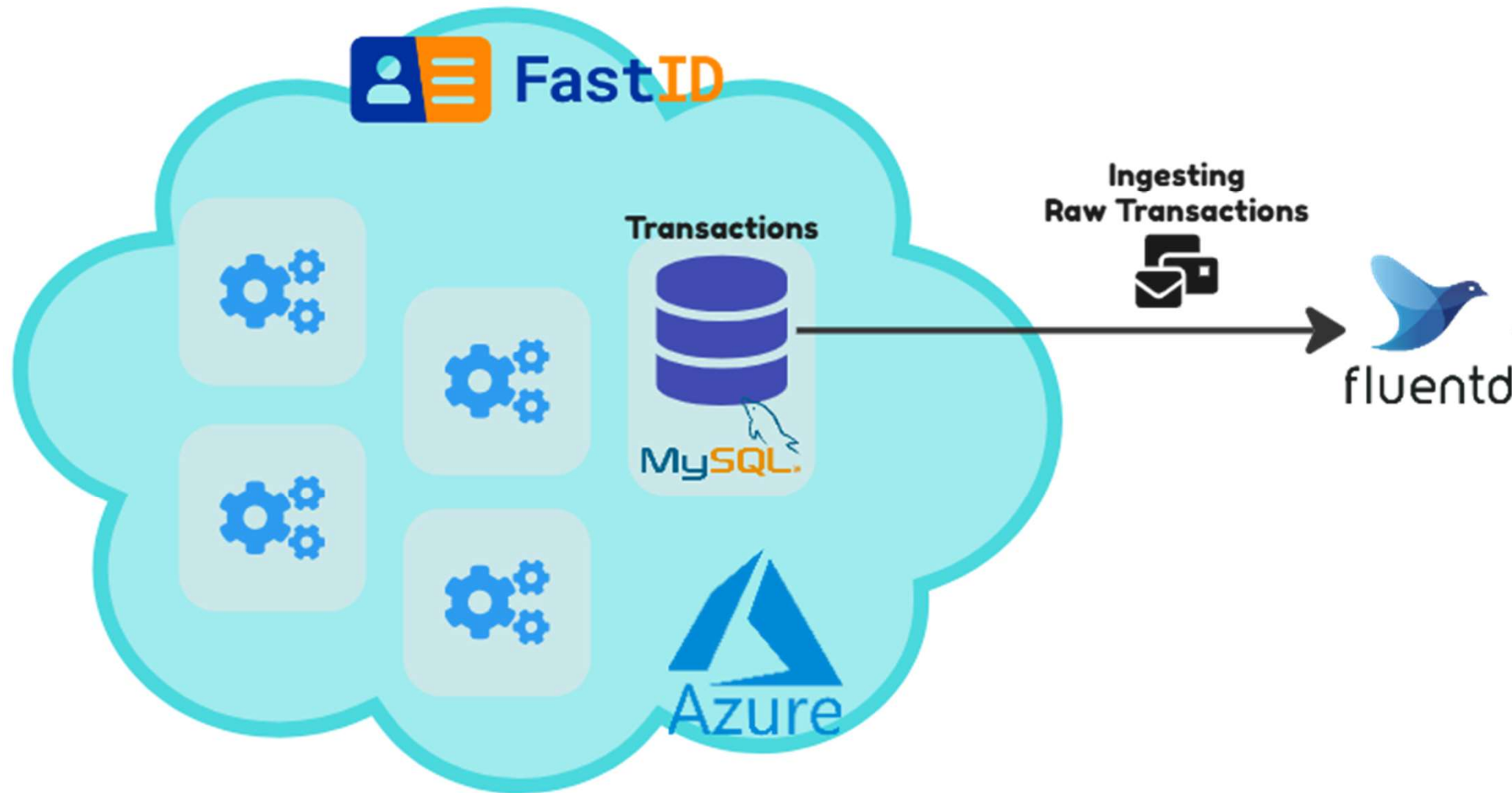
What's FastID?

- FastID is a SaaS allowing to implement easily SPID and CIE integrations in your websites. It handles every user authentication and redirects them in the respective website.
- As it handles the authentication, it **logs them in a database**.
- FastID must guarantee access to all the customers' websites without downtimes, even in high traffic situations.
- Its infrastructure should be able to **scale according to current traffic**, allowing to scale in case of high load.

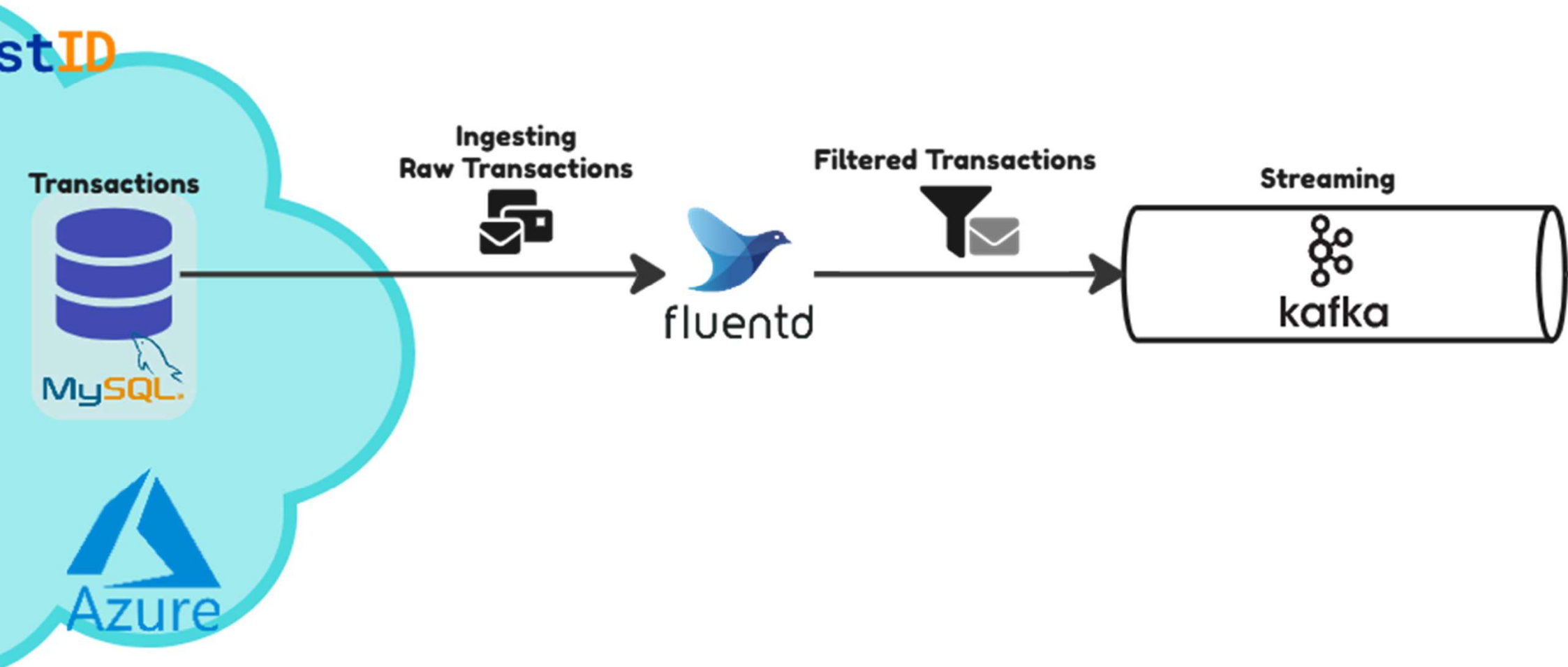
How does FastID look like?



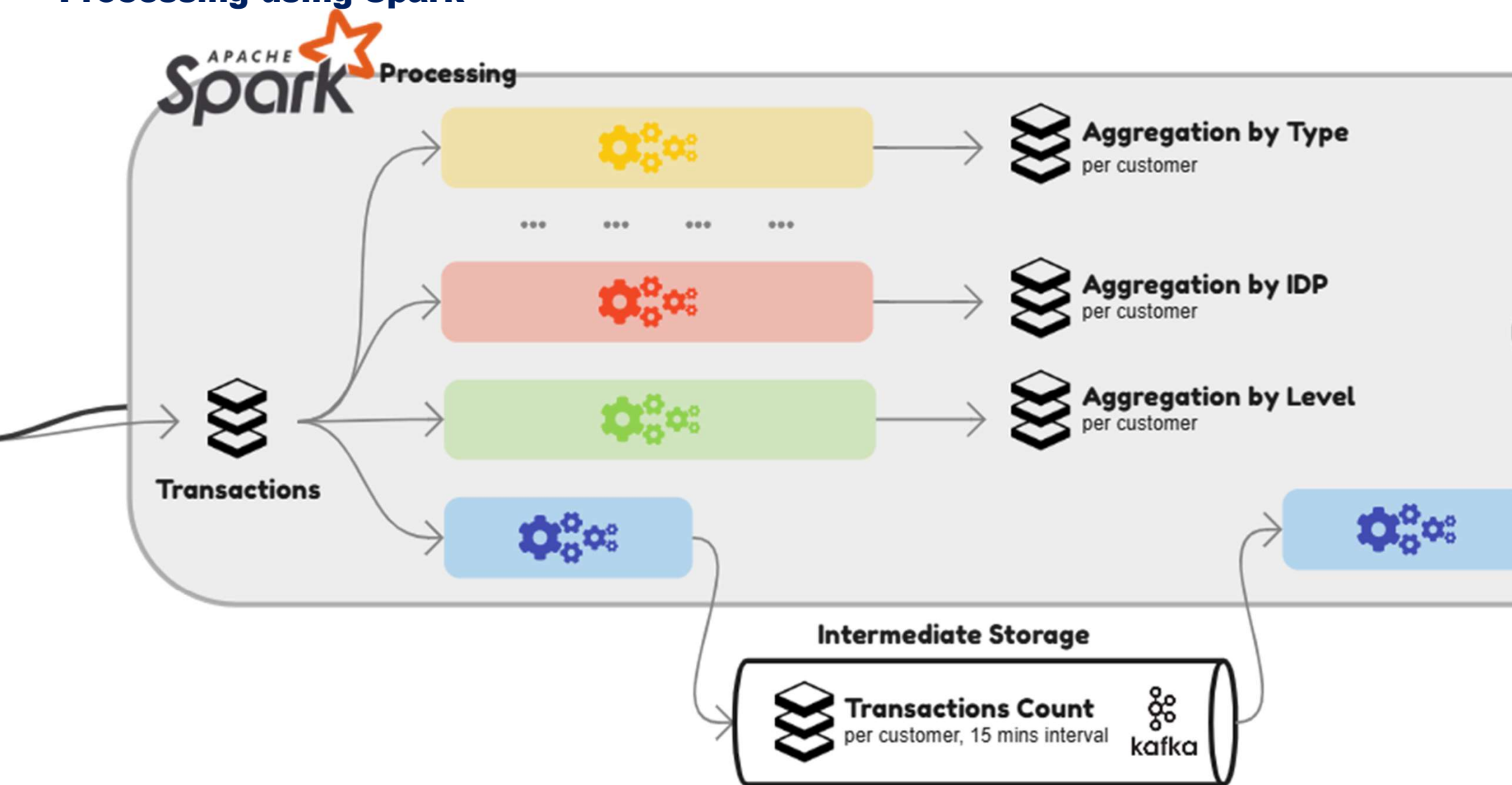
Ingestion using Fluentd



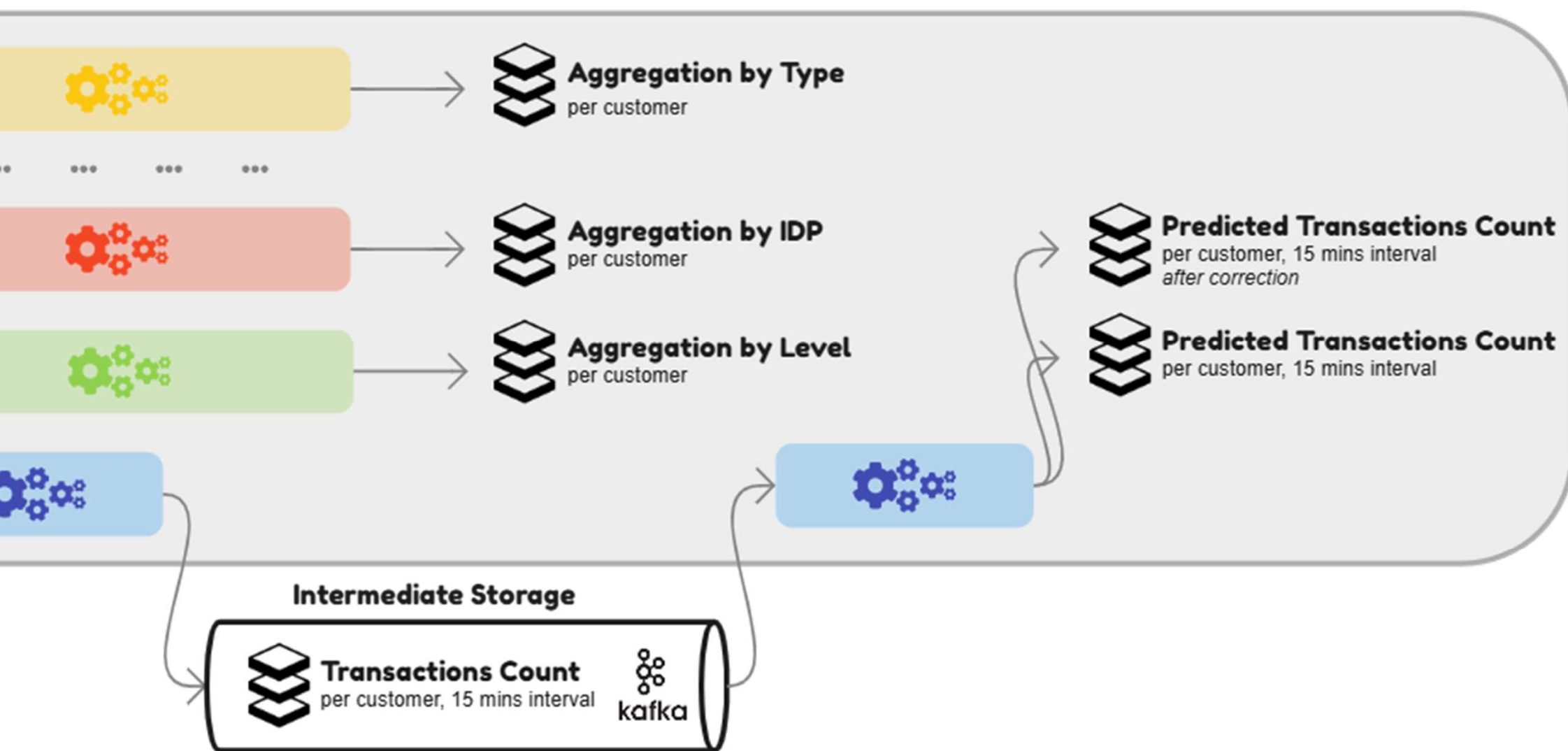
Streaming using Kafka



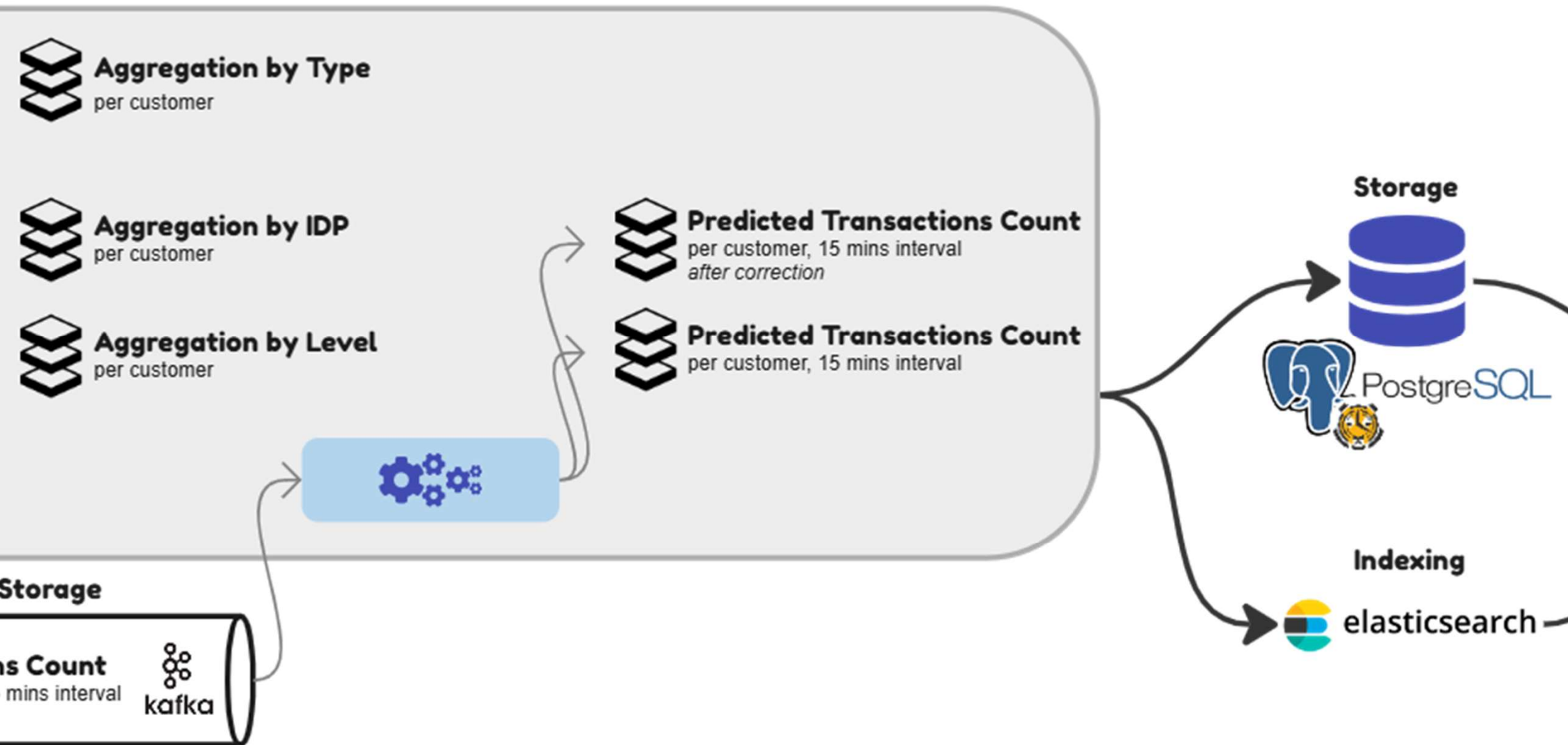
Processing using Spark



Processing using Spark



Storing using Postgres and Indexing using Elasticsearch



Visualizing using Grafana

