



Benchmarking Kudu and Oracle in typical WinCC OA historical data retrieval use cases

Speaker: Rishi Shah

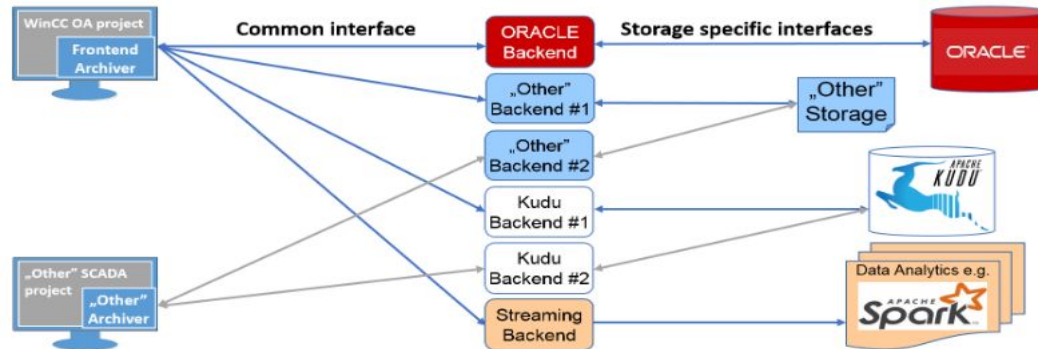
Email: rishi.dilpeshkumar.shah@cern.ch

CERN Openlab Summer Student Intern 2018

Archiving in WinCC OA

- WinCC OA: Toolkit for creating Supervisory Control and Data Acquisition (SCADA) applications
- Domains of application of WinCC OA at CERN: vacuum systems, electrical network supervision, detector control etc.
- One of the main tasks of a SCADA system is to archive historical data: value changes, alarms, etc.
- Currently WinCC OA archives into Oracle. Stable, good performance, proven solution used at CERN for many years.

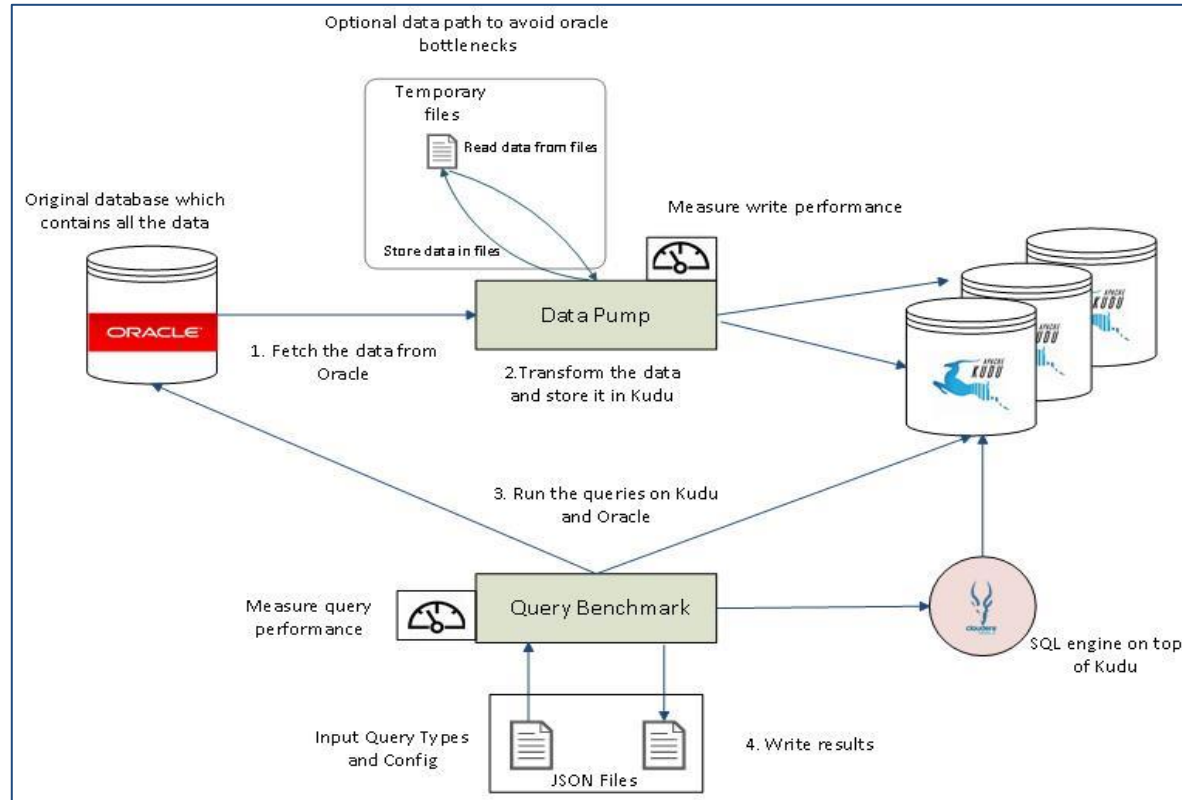
NextGen Archiving System



Source: Future Archiver for CERN SCADA Systems by P. Golonka et al.

- CERN and ETM/Siemens(in the scope of openlab) collaborative R&D project
- Goal: to enable new storage technologies through pluggable backends.
- Available backends: Oracle (for backwards compatibility, developed by CERN) and InfluxDB (developed by ETM).
- Considering support for Apache Kudu.
- Evaluating the performance of Kudu for data retrieval scenarios using real data archived by current Oracle archiver will help to decide the future of Kudu backend.

Overview of the Project



Future Work

- Implement remaining queries for Kudu + Impala.
- Current tests were aiming at testing the functionality of developed tools.
- Transfer the entire archive for CERN's electrical network SCADA from Oracle to Kudu, to provide representative data for tests.
- Consider providing support of InfluxDB in the DataPump and QueryBenchmark.

Thank You!