Celebal Streaming Analytics Solution (IoT – Analytics: Water Leak Detection)

PROFILE

Water Works – Shimla (WWS) is the key authority for water management and purification in Himachal Pradesh, India. It has water pipeline spread across 650 Km.

PROBLEM

WWS deals with water leaks, which occur at the rate of 11-12 per day. Most of the leaks are repaired with a TAT of 30-50 Hrs. This results in a massive loss of water and the leak needs to be repaired within 3-4 hrs. Another aspect was to proactively predict leaks.
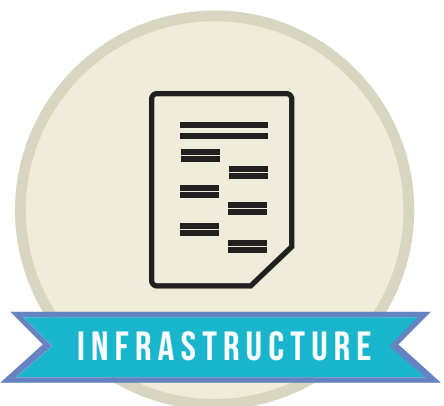
INFRASTRUCTURE

One of the key aspects of this project was to set up the sensors at a distance of 100m that can emit important information that can predict leaks. WWS joined hands with a company that manufactures sensors which would provide info like water-speed, Fluoride-content (ppm), pressure, density, molarity, speed at the last sensor, speed at the next sensor, temperature, wind velocity in case of open water-pipes, metal oxidation level etc.

BUSINESS CASE

Celebal would provide a streaming analytics solutions that would allow WWS to monitor the water flow more closely along side develop a probabilistic machine learning model that would predict that a leak is imminent. This should allow WWS to
• Be proactive than reactive to handle leaks and save water waste.
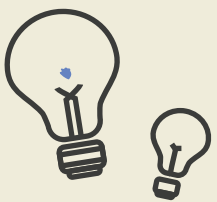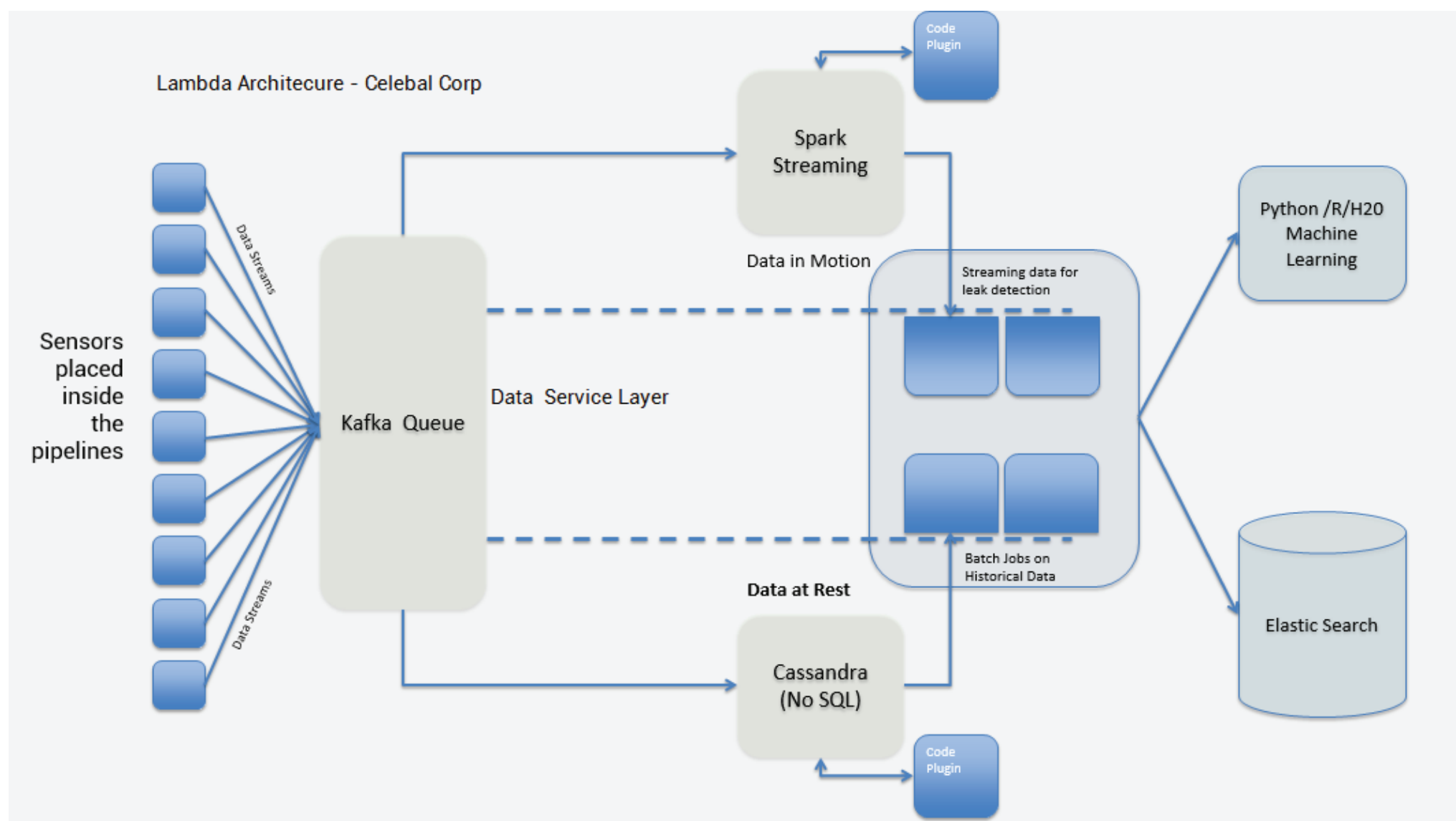• Pin down quickly to the exact water clogging area

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Celebal provided lambda architecture based big data solution that would provide streaming analytics to WWS and help them tackle their water management problem effectively.

SOLUTION

Lambda Architecure - Celebal Corp

This solution provided a huge save in water losses happening due to leaks. The TAT for leaks repairing came down to 4-6 hrs.
Proactively detect leaks:
• 15,000 liters of water is now being saved every week and this allowed proper water supply to residents in Shimla.
• More targeted cleaning of pipelines as the sensors could point towards the water clogging more effectively.

RESULTS

Celebal