



Automating Approval Workflows in Real Estate using Elasticsearch Engine

Digital
Services

Success Story

Client

The client provides real estate brokerage services through its platform which is a marketplace for buyers and sellers to search real time property listings.

Overview

Given the typically tedious workflow management processes of the real estate industry, the client was particularly keen on automating the license management workflow, which traditionally obligated extensive manual intervention. License information such as licensee name, application ID, issue and expiry dates etc. of 50 States was being searched and validated manually during the prior approval process. The client wanted a solution that would reduce unproductive utilization of its employees, improve the approval process and potentially track user engagement metrics for both customers and agents.

Status Quo

Out of the tedious typical workflow management processes of the real estate industry, the client was particularly keen on automating the license management workflow which obligated major manual intervention.

License information such as licensee name, application ID, issue and expiry dates etc. of 50 States was being manually searched and validated by managers for approval steps. The client wanted a solution that reduces the non-value hours of the staff and improves the approval decision support process.

Business Requirements

- The staff will receive data files from 50 different states from external data providers which require automated license validations and forward to the next steps.
- The solution must be scalable for n number of data inputs and states.

- Build an Admin Console for the approval managers to monitor the number of files being updated, at what frequency and time etc.

Solution

Indium Software's Approach and Implementation

- Data updates were copied into Amazon S3 in a timely fashion. Indium Software created an ETL pipeline with Python API for data updated/ data refresh and newly added files.
- Performed Data Quality Validations on the pipeline data.
- Data Indexing into the Elasticsearch engine for data files of 50 States.
- The solution is integrated with the approval workflow - results from Elasticsearch are passed on to the next validation steps automatically.
- Created a web service/ UI for business users to effectively query information for license approval processes.
- Performed database optimization by stress testing the business user console (UI).

Business

Big Data

Domain

Real Estate Marketplace

Tools

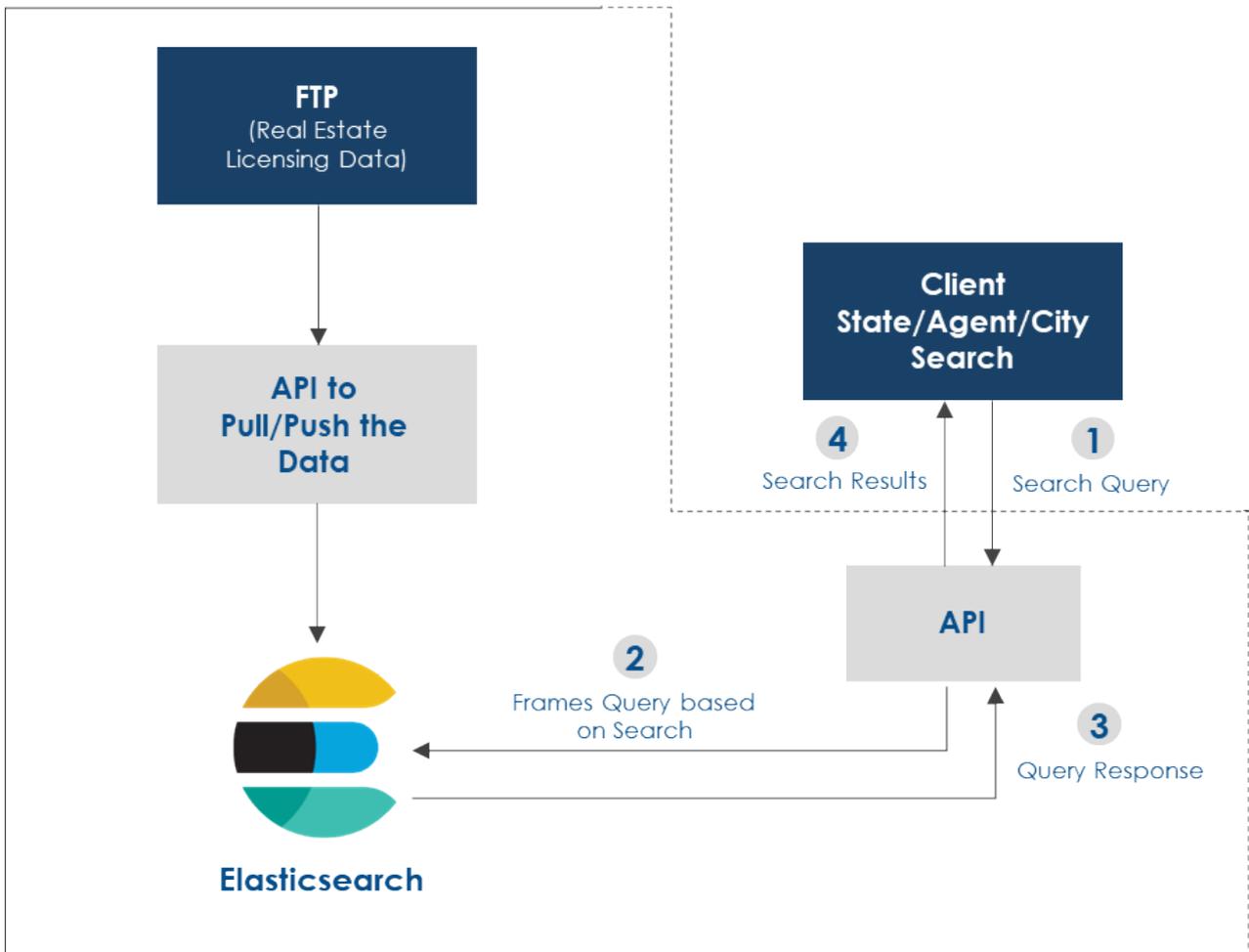
Python (ETL), Crontab (Automation/ Scheduling), AWS S3, AWS EC2, JavaScript (UI)

Key Highlights

- Accelerated license approval process by 75% with successful validations in about 10 minutes
- The business user console has the capacity to handle up to 1000 requests/ second

Business Impact

- Accelerated manual license approval process by 75%. Heavy license data handling from each file for each state is automated for successful validations in about 10 minutes.
- Data Indexing solution is implemented for 50 states but the architecture designed will handle n/any number of new states.
- Elasticsearch implementation renders dynamic querying abilities.
- Business user console can handle up to 1000 requests/ second.



Architecture Diagram



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