

Success Story

From manual entry to ElasticSearch of a retailer's address finder

Our client, a leading retailer, fulfils over a million online grocery orders each week. Each order depends on a correctly entered address for delivery. Customers chose manual entry over scrolling for their address in the previous drop-down UI design, leading to higher operational costs and delivery delays. VirtusLab replaced this with a simplified single-search field, reducing manual entry by 75% and reducing issues associated with the old system.

The Challenge

Our client grappled with poor address data quality, resulting in higher operational costs due to delivery delays. The existing system, reliant on a dropdown address selection, struggled with vast address volumes for specific areas, forcing the customer to scroll. This led 4000 users per day to manually enter addresses, increasing the likelihood of errors.

Faced with the increasing reliance of stakeholders on accurate data, our client understood the importance of a new solution. The implementation of the new solution should avoid disruption of ongoing operations. That is when the retailer asked VirtusLab for assistance.





The solution

VirtusLab simplified the address entry process by introducing a user-friendly single-search field, eliminating the complex two-step postcode-address selection. This upgrade enabled a dynamic search-as-you-type feature, providing a fuzzy search for queries including typos.

We used AWS Elasticsearch to optimise system performance in an iterative approach. This was the foundation for the next steps, which included rewriting our client's services in Java and launching them on Kubernetes to establish a unified platform. We further improved the platform's service architecture to ensure better integration.

The next stage centred on strengthening the retailer's team and processes. We cross-trained our client's staff to broaden their skill set and implemented consistent coding practices. With a capable team and streamlined processes, we integrated data from diverse sources across various countries.

At last, we prioritised data security and governance. We enacted procedures to protect data and established governance protocols to guarantee its availability and accessibility.



The results

VirtusLab's solution reduced the amount of manually typed addresses by **75%**, leading to enhanced accuracy and reduced delivery costs. We also designed the solution to be applicable beyond addressing issues, such as address comparison for fraud detection and database migration.

As Elasticsearch requires adjustments, we iteratively refined the solution to meet the client's expectations. This led to:

- Indexed Documents: Decreased by **70%**
- Infrastructure Costs: Reduced by **15%**
- Response Time Latency (P99): Improved by **50 times**
- Search Result Accuracy: Increased from **60%** to **90%**



/ Languages

- Java
- C#

/ Database technologies:

- Elasticsearch
- CosmosDB
- MongoDB

/ Infrastructure:

- Kubernetes
- Microsoft Azure



About VirtusLab

At VirtusLab, we aim to lead in software technology, working consistently to enhance efficiency. Our profound commitment to research and development and a dedicated focus on emerging trends and inspirations fuels an innovative culture. This ethos precisely guides advancing our cutting-edge solutions, inviting collaboration to expand the boundaries of software technology collectively. We welcome you to be a part of this transformative journey.

[Let's connect](#)

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