

Application Performance Engineering leveraging Elasticsearch for a Global Supply Chain Company



Client Overview

- With an extensive global supply chain network, the client leveraged its depth of experience, market knowledge, and technology to help retail brands adapt to changing consumer and manufacturing trends



Application Overview

- Developed system leveraged Elasticsearch, replacing existing Postgres database to overcome slow indexing and search latency
- The product attributes were categorized into four indices and backend APIs executed in Docker, to make the data retrieval process more efficient



Business Requirement

- Enhance the data model to reduce the time lag and improve efficient
- Improve the website data retrieval process incorporating better sync and faster search
- Enhance the system through performance tuning



Our Solutions

- A new architecture involving multiple indices which encompasses the product attributes in 4 indices. Due to the classification of the product attributes, page refreshing could be carried out daily
- Leverage Elasticsearch for efficient data search and retrieval
- Transfer of most widgets from Postgres to Elasticsearch, by scraping the data attributes
- Execution of backend APIs in a Docker



Tools

- AWS, Redshift, S3, Postgres, Elasticsearch, Python, Docker



Value Additions

- Nearly 80% improvement in system efficient and data retrieval time lag owing to the Data Model enhancements
- The implementation of Elasticsearch improved the search latency by 85%
- 90% faster page synchronization owing to improved architectural design
- Performance tuning enabled a better and more immersive user experience