REIMAGINING DATA VISUALIZATION, API EFFICIENCY AND UI FOR ONE OF THE LARGEST COMPANIES IN THE MAPPING INDUSTRY

Results:

- Refactored, robust code base
- Data-quality gate development
- Pluggable rules for compliance
- Change-driven mechanism with downstream notification
- Centralized data warehouse: Content, Quality and Task Metrics
- Comprehensive back-end refactoring
- Continuous Integration implementation

Technologies:

node.js ANGULAR JS JavaScript Jenkins

GRUNT docker kafka

PSL

The Challenge:

The mapping industry is dominated by the biggest names in innovation, so for any newcomer, their mapping data has to be top notch to gain traction. After working with various development teams around the world, the client wasn't able to solve the complex engineering challenges they faced, due in large part to the fact that teams were working in different time zones and utilizing varying software development methodologies. With millions of data points entering the system daily and updates being pushed directly to users, the company needed software that would:

- Clearly illustrate the bottlenecks in the pipeline and
- Strengthen the infrastructure of the program
- Allow all users to collect data, and send updates back to the repository
- Automatically push upgrades to users
- Use the data to build visual representations complete with all features collected by the users, resulting in a highly complex UI.

The Solution:

PSL was brought on to help solve the unique engineering challenges the client was facing and to achieve more synergy between teams by providing agile teams in similar time zones. To solve the most pressing challenges first, the PSL team split into three different units to more effectively manage different components of the engagement and to utilize developer expertise properly.

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Maintaining and Improving API Efficiency

One team is currently improving and maintaining the efficiency of APIs within the system to ensure accurate location systems for users and provide predictive analytics for capability, and route and coverage planning. Machine learning models are used to provide guidance on the best way to integrate the data and provide a reality index which can scale and effectively handle the huge amounts of data within the system.

Pipeline Visualization Dashboard

PSL developers also built a comprehensive dashboard from scratch to provide an accurate, real-time visualization of pipeline components and working interactions. This resulted in a scaled, multi-layer architecture to support concurrent live edit mode and batch enrichments, automated built-in notifications for health, cloud storage with real-time change processing and propagation.

Map Visualization Components

Another PSL team is constructing complex maps featuring 3D imaging. The maps must correctly translate the consumed data into designed features, and update and query the system more efficiently. The complexity of the project requires PSL to conduct additional training for teams to ensure a global definition of process and results.

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