

Akita Trading Platform for Sports Betting with Real-time Data Visualization

Business Overview

Jindo is a SaaS technology company that specializes in sports betting. They provide a comprehensive suite of B2B products and tools that enable sportsbooks to effectively manage financial risks and optimize trading strategies.

The company was looking for a technology partner and turned to the NIX team to develop a trading platform from scratch that will stand out from the competition.

Akita is a subscription-based trading platform for sports betting traders that provides real-time web access to odds and live score data.

Project Scope

- Develop a web platform from scratch that will display data about bets on sports events in real-time
- Integrate trading platform with client's API that aggregates data from different bookmakers' offices and displays it on dashboards

Solution

The NIX team created the Akita platform, which aggregates all odds on the current sporting events and displays the highest odds on bets on the dashboard. The trader can filter out the most interesting bookmakers, compare who has the steepest odds, and make the bet. Also, the system shows a history of betting price changes.

NIX security engineers made the system protected by using OWASP security best practices such as secure authentication, access control, logging security incidents, and more.

There are two main user roles on the platform:

1. *Trader*: either an individual or company that gets access to the platform on a subscription basis and can choose bookmakers, payment methods, and more
2. *Admin*: manages users and sports data of the platform

Architecture

The Akita trading platform features cloud-native design based on service-oriented architecture (SOA), containerization, and automated deployment. The system collects data about dozens of sports, hundreds of leagues, and thousands of events from different providers—processing more than 500 updates a second during peak times. The Akita platform processes this data and allows traders to view it on an easy-to-use dashboard updated in real time.

For the frontend we chose React JS, which is well-suited to providing a flawless user experience. The backend is built with Golang, which has proven to be an excellent choice for scalability and high performance.

The NIX team used Amazon Elastic Kubernetes Service (EKS) to simplify microservice orchestration and improve operational efficiency. EKS allowed us to secure the system's ability to withstand the load from integrations and a large number of users at peak times, by increasing or decreasing the number of servers on-demand. This ensures a flawless user experience during popular events such as the World Cup or the Olympics when the highest user activity is expected, and reduces resources to a minimum during the off-season, saving money.

Platform Services

We developed custom web services that ensure flawless platform operation and provide the client with required functionality. All services are mostly built on the base of Golang technology and WebSocket communication protocol.

End-user Services

- **Front API** displays data from bookmakers on the dashboard and in the admin panel. This service is also responsible for integration with PayPal and WebSocket connections—a full-duplex communication channel between user and server.
- **Dashboard cache** is one of the most proven solutions to optimize the loading speed of the main screen. This service decreased load time to less than 700 milliseconds instead of 10 seconds before optimization. Dashboard cache also improved system performance by executing constant computations and preventing duplicate calculations on user demand.

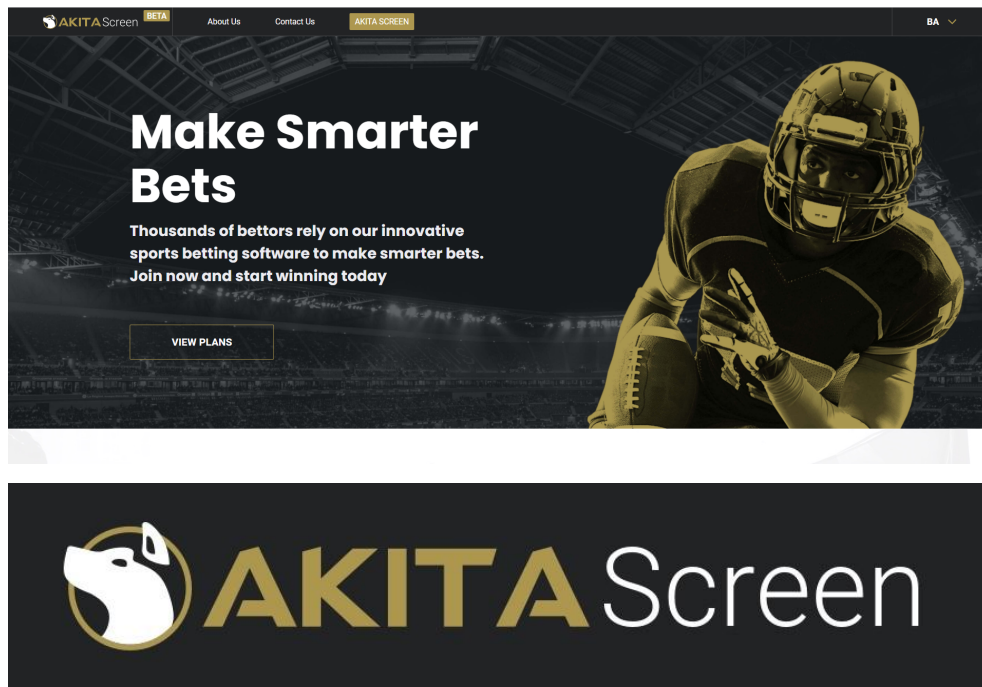
Data Extraction and Processing Services

- **Snapshot worker** is in charge of updating data in the database and importing data from integrations on a regular basis.

- **In-play data and pre-match data savers** are responsible for aggregating, transforming and saving the accumulated data from providers into the database.
- **Integration service provider** is a Rabbit-based feature that transforms the data from different integrations into required format and publishes them in our system for further processing. This service racks up miscellaneous information from data providers and folds it neatly into our message broker.
- **Events archiver** archives the data on AWS S3 Glacier—a deep data archiving method that requires almost no storage cost. This way we accelerated our database performance by offloading.
- **UI optimization feature** pre-generates filters, dropouts, lists of games, leagues, sports, and more, to optimize overall performance instead of generating all components every time the page loads.

Logo and System Design

We also created a concept of the system UI/UX and a unique logo that displays the client's love for the Akita dog—a large dog breed originating from the mountains of northern Japan which inspired the famous film “Hachi: A Dog's Tale.”



Outcome

The client received a high-performance and secure platform for sports betting traders that provides access to real-time data from bookmakers around the world,

and assists traders in making bets based on data summarization and preliminary analysis. Akita covers more than 500 different betting markets across more than 35 different sport types and provides accurate data.

Custom services developed by the NIX team ensured platform scalability, resilience to high load, and future-proof functionality.

The End
