drawbridge

Uniting the User Experience Across Three Billion Digital Devices with 97.3 Percent Precision

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— Devin Guan, Cofounder and CTO, Drawbridge

Overview

Drawbridge helps brands reach consumers more efficiently across their multiple devices so they can deliver the right message to the right person on the right device at the right moment. This anonymized cross-device identity company provides insights into one billion consumers across more than three billion devices.

By implementing Cloudera Enterprise as the core data engineering and data science solution for its machine learning applications, Drawbridge is able to understand consumer journeys across their PCs, smartphones, tablets, and connected TVs, and help brands gain more than a 200 percent uplift in advertising performance.

Impact

Today as consumers interact with brands, they often do so across multiple devices, including their PCs, tablets, smartphones, and other emerging devices like connected TVs. Drawbridge's machine learning applications, running on Cloudera Enterprise, can create a single digital identity for each consumer that enables brands to seamlessly build an ongoing conversation with a consumer no matter what device they're using.

Building cross-device identities is a huge undertaking, and requires the ability to ingest, process, analyze, and store billions and trillions of data points. Through its advanced solution, Drawbridge has been able to do so with highly accurate results.

"[Media research firm] Nielsen has found that our results are 97.3 percent precise," said Devin Guan, cofounder and CTO at Drawbridge.

Using these insights, enterprises can manage cross-device campaigns in real time and leverage Drawbridge's data for targeting, attribution, audience extension, site personalization, and fraud detection.

For example, working with Drawbridge, one telecom provider was able to target users of competing carriers and drive only the most relevant site traffic as well as physical store visits.

The campaign was very successful—resulting in a two-and-a-half-times increase in marketing efficiency from qualified mobile traffic and a three-times increase in efficiency for in-store traffic.

"We were able to more than double performance efficiency of that one campaign with our cross-device intelligence," said Guan.

Results like these have increased Drawbridge's success in the industry and enabled the company to double its revenue every year for the past three years.

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Key Highlights

Industries
- Mobile Advertising
- Digital Marketing

Location
- Headquarters: San Mateo, California, USA

Business Applications Supported
- Cross-device identity solution
- Cross-device campaign management and performance
- Online customer experience
- Security and authentication

Impact
- Drove 200 percent increase in marketing efficiency for one mobile telecom company
- Doubled revenue every year for past three years
- Reduced time to actionable insights from one hour to 10 minutes
- Achieved 97.3 percent precision in results

Data Sources
- Mobile and desktop ad exchanges
- Mobile and desktop data providers
- Data management platforms
- Location data providers
- Direct publisher relationships

Solution
- Modern Data Platform: Cloudera Enterprise
- Workloads: Data engineering and data science
- Components: Apache Giraph, Apache Hive, Apache Kafka, Apache Spark

Big Data Scale
- 8 PB

Business Drivers

Drawbridge was founded as a big data solution, and at the outset company executives knew they needed a platform that could "connect the dots" from PCs, mobile devices, and emerging devices at a massive scale. That includes the ability to ingest and process:

- Upward of nine trillion observations weekly
- More than 100 billion data and ad requests per day
- Over 1.2 billion cookie syncs per day
- More than 12 billion vertices and 40 billion edges weekly

Solution

The Cloudera data engineering and data science solution gives Drawbridge the fast performance and scalability it needs to generate actionable insights from its more than eight petabytes (PB) of data and make these insights available to its customers quickly.

Drawbridge uses probabilistic modeling, processing anonymous data from multiple sources, and runs machine learning and graph algorithms on this data in order to determine whether "tablet X" and "smartphone Y" belong to the same person or household. By leveraging Apache Spark as part of its Cloudera Enterprise deployment, Drawbridge has been able to accelerate data processing times dramatically.

"Time to market for our data is key," said Guan. "We have to be able to capture consumer behavior patterns and quickly make them available for action by our customers. Using Spark with Cloudera, we reduced the time to onboard the data and make it actionable from an hour to only 10 minutes."

While its first applications running on Cloudera Enterprise have focused on marketing and advertising use cases, Drawbridge is also creating authentication applications to help banks and enterprises more seamlessly, accurately, and quickly authorize end users as they log into their accounts. The applications will help enterprises determine when additional security questions should be asked so that they don't have to require numerous challenge questions from the outset.

"Our big data solution understands user behavior patterns and context and can help verify when an authorized user is logging in from a different location," said Guan. "It's much more succinct than traditional multifactor authentication and can help improve security while reducing the chance of having to use challenge questions or other secondary security measures that add complexity for the user."

Why Cloudera

Drawbridge chose to implement an Apache Hadoop–based platform as executives realized processing the massive data volumes would be impractical with other solutions. Additionally, it was critical to use a Hadoop vendor that could provide comprehensive features, fast performance, and support to meet its demanding needs.

"Our data platform is core to our existence," said Guan. "When we pick a solution, basically, we're betting the company's future on it, so we needed one with the performance, features, and support that could help us unite the user experience across their multiple devices. Cloudera is the perfect solution for us, and we view the Cloudera solution as a key to our success."

About Cloudera

Cloudera delivers the modern platform for data management and analytics. The world's leading organizations trust Cloudera to help solve their most challenging business problems with Cloudera Enterprise, the fastest, easiest, and most secure data platform built on Apache Hadoop.