

OVERVIEW

Powering Real-time Convergence of Big Data and Fast Data with the X Platform™

Every technology team knows the importance of real-time in today's business. Financial trading needs to calculate risk in real-time; prices need personalization at the moment; credit card authorization needs to perform fraud detection in real-time and so on and so forth. However, the problem is that in today's enterprise such in-the-moment decisioning executes on large and diverse data sets. Big data and real-time have always been at odds - the more data to make a decision, the less real-time the decision is. This is increasingly becoming a problem with enterprises as data volumes explode (Big Data), information velocity continues to increase (Fast Data) and the time windows within which to exploit this information continues to shrink.

Real-time Architecture Challenge

For the majority, achieving real-time in the face of big and fast data means a change in their architecture. Such architectures stitch together storage systems (such as IMDGs or NoSQL stores) messaging systems (such as Kafka, RabbitMQ, or ActiveMQ) and stream processing platforms (such as Apache Spark, Apache Storm, or AWS Kinesis) in an attempt to achieve the desired real-time behavior. But, these technologies solve only a portion of the problem. They get you from being batch based to nearly real-time but not truly real-time. Why? Because, while these technologies do a fine job in capturing and refining the data, they fall significantly short when the refined data streams need to be absorbed, stored and transactionally processed by the real-time decisioning engines. To solve this last mile of the "big data in real-time" problem, one needs to think a little differently.

Real-time Is Here

Think X Platform™. X uniquely combines in-memory distributed computing with next-generation transaction processing to enable true real-time, intelligent and transactional decision making. X enables diverse and massive amounts of data capture, refining, enriching, storing and processing by complex business functions to drive intelligent, real-time decision making in a fault-tolerant, linearly scalable manner.

Some performance facts about fully fault tolerant and linearly scalable systems built using X:

- 10+ Terabytes of transaction history processed 10,000 times/sec in less than 50 milliseconds.
- 400,000 rates/sec, 10 Million offers, 100 Million customers, Individualized Prices in less than 1 millisecond.
- 1 Million equity orders/sec in less than 10 microseconds client-market latency.

© 2018 Neeve Research, LLC. neeveresearch.com
◦ Systems leveraging X take hours to days to build, not months!

EFFECTIVE REAL-TIME APPLICATIONS HELP BUSINESSES

- 1. Make better informed decisions**
Strategies, Recommendations
- 2. Discover hidden insights**
Forensics, Patterns, Trends
- 3. Automate business processes**
Complex Events, Translation
- 4. Generate new revenues**
Customer Insights
- 5. Highly available**
No application or data loss
- 6. Provides business agility**
Reduces system complexity and speeds up development

What X Platform™ Customers Are Saying

- *"We now generate pricing based on not only our inventories, but also on past behavior for this customer."*
- *"We lost so much money trying to manage promo codes, that worry is gone since every promotion is unique to the customer."*
- *"Our revenues increased over 30% in the first month of deploying real-time transaction risk.."*

Developer Feedback

- *"We built our first X Platform™ app in less than two days, when we had budgeted for over two months."*
- *"My favorite thing is how the X Platform™ makes it easy to model and write the business logic. It cuts my coding down by 80%."*
- *"We reduced our hardware footprint by over 50% in the first month."*
- *"It's amazing how fast my applications run with no GC's"*

A few more facts:

- Not only is X the only technology that can be used cost-effectively across all layers of the "big data in real-time" stack, but it also allows you to preserve your existing technology investments by interoperating with technologies that handle a portion of the stack.
 - **Do you have Kafka?** X will hook into it to absorb data from it.
 - **Do you have an IMDG?** No problem, data can be leveraged from it.
 - **Do you use Apache Spark to refine data?** No problem, the refined data can be pulled from Spark and used in the real-time decision processing.

Engineering solutions require systems and tools that reduce development time, are flexible, highly performant, and make use of virtually any hardware environment. Neeve Research's X Platform™ makes this possible by giving developers the infrastructure needed to quickly build and deploy fully distributed in transaction processing applications, keeping launches ahead of schedule and employee costs down. Additionally, the X Platform™ is in-memory, which delivers applications that meet high performance and service-level requirements to ensure the digital platform is lower in risk with greater flexibility. The X Platform™ is a perfect complement to any real-time architecture, enabling the performance and scalability needed to meet the toughest business demands.

5 Reasons to Use the X Platform™ for Real-time Transaction Processing Applications

✓ Speed, Scale, & Simplicity

- Real-time digital data flows provide better customer experiences and timely decisions
- Provides elastic scale for stability under various workloads
- Simplifies the architecture, engineering, deployment, and monitoring of applications and services.

✓ Reduced Costs

- Faster builds and deployments reduce project duration
- Hardware footprints are dramatically minimized
- No highly specialized skills required
- Cloud ready and free/open source

✓ Real-time Insight & Visibility

- Leverages bigger data sets at real-time speed to increase accuracy and speed of decisions
- Ultra-fast access and messaging capabilities reduces risk, enables instant action on real-time insights, and provides analysis on all types of data in motion
- Event stream processing and dashboards give insights into bigger data sets at real-time speed, increasing accuracy and agility

✓ Enterprise Ready

- Born in-memory and designed to scale with data and business needs
- Proven resilience in mission critical applications at Fortune 500 enterprises
- Trial and production support ensure simple, successful implementation/use

✓ No-Compromise Solution

- Build predictable and reliable systems without impact to performance
- Componentized use for integrating with your other technology choices

COMMON USE CASES

- **Real-time Security**
Authentication and access of private data from a single data store in real-time greatly reduces potential security breaches without impacting the transaction latency.
- **Personalized Pricing**
Leverage input streams from rules engines, customer data, inventory, and adding predictive analytics in real-time allows the application to offer truly personalized pricing for every item and every customer.
- **Promotion/Coupon Management**
All promo codes and coupons can be validated in real-time, delivering valid inventory codes for specific demographics and customers.
- **Fraud Detection**
Increase the number of data points and utilize AI that can be processed in microseconds, allowing more through validations and verifications to reduce fraudulent transactions.
- **Customer Loyalty Rewards**
Enable real-time loyalty offers and rewards to maintain customer loyalty while increasing the average size of each transaction.
- **Real-time Inventory**
Provide real-time inventories across channels to improve inventory management across multiple locations.
- **Sentiment Analysis**
Online sentiment analysis allows real-time response to protect customer loyalty, brand image and revenues.