

Aster Data® nCluster®: High-Performance Analytics for Gaming

The fiercely competitive and growing gaming industry is driven by two key factors today: growing the top line through better understanding of the customer and efficiently managing the bottom line through operational excellence. Superior data-driven applications at the frontline of the business, both on the customer-facing aspects as well as internal operations, can provide a competitive advantage to gaming companies and help them meet their revenue growth and operational efficiency goals.

This can be enabled by fast and rich analysis of large volumes of data that gaming companies, both online and land-based, gathered about their customers and their operations. These data volumes are exponentially growing as companies employ more and more sophisticated tracking of their customers, capturing each individual interaction at the most granular level. Such detailed data related to the customer's behavior and preferences, if analyzed quickly and cost-effectively, can provide invaluable customer insights that can help gaming companies effectively segment their customers, identify the high potential customers, and execute customer relationship strategies that would help maximize their revenue. Similarly, the ability to analyze fresh operational data efficiently can reduce costs and plug revenue leakage caused by issues such as game and payment fraud.

In particular, insights gathered from rapidly analyzing this huge volume of data can provide:

- **Top Line Impact**

- ✓ **Customer Segmentation and Loyalty Management** – Knowing which factors drive customer loyalty, accurately identifying the most valuable customers, and rewarding them quickly can provide tremendous gains to gaming companies. Detailed data related to customer attributes, game attributes and customer behavior can be analyzed to effectively segment the customers and improve loyalty. These insights can also enhance the effectiveness of marketing campaigns and promotions, making them more targeted and relevant to the preferences of different customer segments.
- ✓ **Customer Service** – The perceived quality of service is a key determinant of customer loyalty. Effectively managing all customer touch-points can help companies improve their quality of service and retain customers for longer periods. This can be done via managing a single, unified view of customer data and providing up-to-date, individual-level insights to the customer service department.
- ✓ **Affiliate Program Management** – Gaming companies often depend on affiliates to drive traffic to their online or land-based businesses. Effective management of affiliate channels can help grow this traffic and also improve the quality of traffic. Analysis of data generated during interactions between a gaming company, its affiliates, and the customers can help the company grow its revenue by optimizing its affiliate program.

- **Bottom Line Impact**

- ✓ **Fraud Detection** – Providing a secure environment to customers is a key objective of gaming companies. The cost of fraud to a gaming company is very high—cases of fraud can very quickly drive genuine customers away and cause monetary loss. This becomes particularly crucial in the online gaming world where the customer is not physically present. For example, collusion is a big problem in the online gaming industry. Detecting all cases of fraud in a timely manner is crucial to ensuring a secure playing environment and to prevent losses.
- ✓ **BOT (Web Robot) Control** – With increasing popularity of online gaming, automated computer programs that can pretend to be a human are sometimes used to trump the system. This can result in significant monetary losses for genuine players and eventually for the gaming company. Fine-grained analysis of customer activities on the website can help them separate the BOTs from real humans and stop such losses.
- ✓ **Payment Security** – Maintaining a secure and efficient credit and payment process is crucial to the success of a gaming business. Analysis of customer profiles in conjunction with payments-related data can help companies assess credit-worthiness of players and detect any payment-related malpractices quickly.

Quick Overview

Aster Data nCluster is a massively parallel data-application server that can help gaming companies analyze large volumes of customer and operational data quickly and turn the data-driven insights into strategic advantage. It can use fresh data to make the customer segmentation and loyalty programs more effective and improve the efficiencies of customer service departments, affiliate channels, and payment processes. Similarly, it can analyze massive volumes of individual game-level data to rapidly detect fraud and eliminate BOTs (Web Robots).

“Aster Data provides powerful analytics capabilities that cuts down our end-to-end fraud analysis cycle time from 7 days to 15 minutes and queries that took 90 minutes now execute in 90 seconds.”



Case Study

Full Tilt Poker, one of the largest online gaming companies in the world, was looking to improve its fraud analytics capabilities and turned to Aster Data nCluster to achieve this. Using a traditional relational database system, the fraud analysis routines were previously run only once per week due to large volumes of data that resulted in slow performance. The fraud detection algorithms also had to be over-simplified due to the performance limitations. This situation resulted in cases of fraud that were either detected too late or were never detected by the existing system. Using nCluster's massively parallel processing and SQL-MapReduce capabilities, Full Tilt Poker was able to:

- Reduce the end-to-end cycle time for fraud analysis from over a week to 15 minutes
 - Enrich the fraud detection algorithms and catch previously undetected cases of fraud, without being constrained by system performance
 - Improve the query level performance by 60X. For example, queries that previously ran in 90 minutes now run under 90 seconds.
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Aster Data *n*Cluster for Gaming Analytics

Aster Data *n*Cluster is the first MPP data warehouse architecture that allows applications to be fully embedded within the database engine to enable ultra-fast, deep analysis of massive data sets. Aster Data's unique "applications-within" approach allows application logic to exist and execute with the data itself. Termed a "Massively Parallel Data-Application Server", Aster Data's solution effectively uses Aster Data's patent-pending SQL-MapReduce® together with parallelized data processing and applications to address the big data challenge. It can help gaming companies maximize revenue and plug revenue leakage by efficiently analyzing large volumes of fresh data. The following characteristics of *n*Cluster make it especially powerful for meeting the business objectives of a gaming company:

- **High Performance and Scalability** – *n*Cluster runs on a cluster of commodity servers and uses its massively parallel processing architecture to provide high performance. It is highly scalable and can easily scale from gigabytes to petabytes of data. These capabilities can help gaming companies analyze their customer and operational data at high speeds and turn such data into business value. For example, MySpace.com, one of the most successful online businesses in the world, uses *n*Cluster on a cluster of 100+ servers to rapidly analyze 100s of terabytes of data. The analysis is used to better understand online customer behavior and to optimize customer experience.
- **Always On** – Many gaming companies run a 24X7 business and any system downtime can cause a direct revenue loss. This imposes a much higher level of availability requirements on frontline analytic systems when compared to traditional data warehouses. Aster Data *n*Cluster is built from the ground up using award-winning Recovery-Oriented Computing technology that provides a very high level of system availability. Aster Data's market-leading "Always On" technology is built to address all issues that can have an impact on availability, including planned tasks as well as unplanned failures.
- **Low Cost of Ownership** – *n*Cluster is architected to not only enable ultra-fast analytic applications but also to fundamentally change the economics of data analysis. Since it is designed to analyze terabytes to petabytes of data, the *n*Cluster architecture includes optimizations that make it economically viable at these massive data sizes. For example, *n*Cluster runs on off-the-shelf commodity hardware to significantly reduce the cost of hardware when compared with proprietary-hardware alternatives or traditional large-scale SMP+SAN-based database architectures.
- **Embedded Applications** – Given the large volumes of data and the need to make quick decisions, the popular process of pulling data out of the database to an application tier often limits the richness and speed of analysis that can be done on such data. Using *n*Cluster's SQL-MapReduce capabilities, organizations can push analytic computations down from the application tier to the database tier using popular programming languages such as Java, .NET, Perl, Python, C++, R, etc. This enables rapid and rich analysis of the data by combining *n*Cluster's massively parallel architecture with the flexibility of SQL-MapReduce.

About Aster Data

Aster Data is a market leader in data management and advanced analytics for diverse and big data, enabling the powerful combination of cost-effective storage and ultra-fast analysis of relational and non-relational data. Aster Data *n*Cluster is an analytic platform that incorporates a massively parallel processing (MPP) hybrid row and column database with an integrated analytics engine, allowing application logic to execute with data to deliver breakthrough performance and scalability. Aster Data's solution utilizes Aster Data's patent-pending SQL-MapReduce to parallelize processing of data and applications and deliver rich analytic insights at scale. Companies including Barnes & Noble, Intuit, LinkedIn, Akamai, Full Tilt Poker, and MySpace use Aster Data to deliver applications such as deep clickstream analysis, recommendation and personalization analytics, real-time fraud detection, and churn analysis.