CASE STUDY

One of our clients, a major Asian financial company, needed an in-memory platform capable of high-performance and transactional consistency coupled with elastic scalability, in order to handle increased trading volumes.

GridGain Technology
Enables Fast and Compliant Trade Matching

By GridGain Systems, In-Memory Distributed Data Grid and High Performance Computing Technologies

A major Asian financial company needed elastic scalability and transactional capabilities to support their next generation systems for trade matching and settlement, in addition to technology that would support strict compliance requirements.

They chose GridGain to enable their critical infrastructure.

GridGain
REAL TIME BIG DATA

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GridGain Technology

Fast, Scalable, Consistent, and Compliant Financial Systems.

GridGain Provides Key Infrastructure

Given the speed with which the financial markets and prices therein move, transactions must be executed quickly. Upon completion, each trade moves to post-trade processing where both the buyer and the seller compare details about the trade, give approvals for the transaction or sort out any errors and then change records of ownership and finally arrange the transfer of securities and cash. Trades that can be affirmed on the same day as they are traded (SDA) have a much greater chance of settling on time with a substantially lower failure rate. The faster that a trade can be affirmed and then settled the lower institutional risk.

In Asian markets there are a number of regulations in place that require trade matching or affirmation at T +0. In order to support this, the middle- and back-office must be automated and capable of STP from trade to settlement.

When a major Asian Financial company needed elastic scalability and transactional capabilities, in support of their next generation systems for trade matching and settlement, they chose GridGain to provide the key infrastructure.

The Solution

The client needed an in-memory platform capable of high-performance and transactional consistency coupled with elastic scalability to handle fluctuating volumes of trading. GridGain had several key capabilities that made it ideally suited for this use case:

- In-memory data caching.
- Data-affinity aware routing.
- Support for transactions.
- Elastic scalability.

Implementation

All transaction and session data is loaded into GridGain partitioned cache. The system receives a request from an external source (usually a external trader). This request is converted into a MapReduce job and is routed to the node where the relevant data is cached using GridGain's affinity collocation of computations and data.

After the request is processed and the cache state is updated together with the underlying persistent store, the same trader may issue additional requests that are associated with the initial request. GridGain routes these subsequent requests to the node used for the initial request where the data was cached. Additionally, this node will have session data cached from previous request(s).

GridGain's transactional capabilities ensure that all of the processing is completed atomically and that all trade data remains consistent. Given that the requests come from financial firms, there was a strict processing time SLA for all requests within the same session - with the help of GridGain our client was able to stay well within the required SLA.

GridGain Advantages

- Leading in-memory high performance computing and data grid technologies.
- Highly stable and mature platform.
- Elastically scale processing as needed.
- Up-and-running within minutes.
- Excellent documentation, training and support.
- Lower cost, simple licensing options.

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