



CASE STUDY

IMDG-BASED SOLUTION IMPLEMENTATION FOR US BASED SETTLEMENT SERVICES PROVIDER

Achieved seven-fold improvement in query performance allowing faster access to critical business data

Client Background

Our client is a US-based settlement services provider to its members in the Forex market. Their existing data warehouse system comprised of a large volume of data, query times were too slow with inefficient DW management. This affected system performance and horizontal scalability.

The key objectives of our client included:

- Re-engineer the client's data warehouse system
- Improve the horizontal scalability of the data warehouse system
- Boost the performance of the system with faster query time

Xoriant Solution | Key Contributions

The client needed re-architecture of its current data warehouse system and UI application which was used as a reporting tool by external users. Xoriant recommended the use of GridGain as IMDG (In-Memory Data Grid) to improve performance and scalability. Xoriant team actively worked on the design, consultation and development of an In-Memory computing tool providing In-Memory Data Grid (IMDG) and In Memory Database (IMDB) capability. Static data from data warehouse was loaded into Grid Gain cache. This included HTAP performance, horizontal scalability, persistence and database denormalization for the client. Our key contributions included:

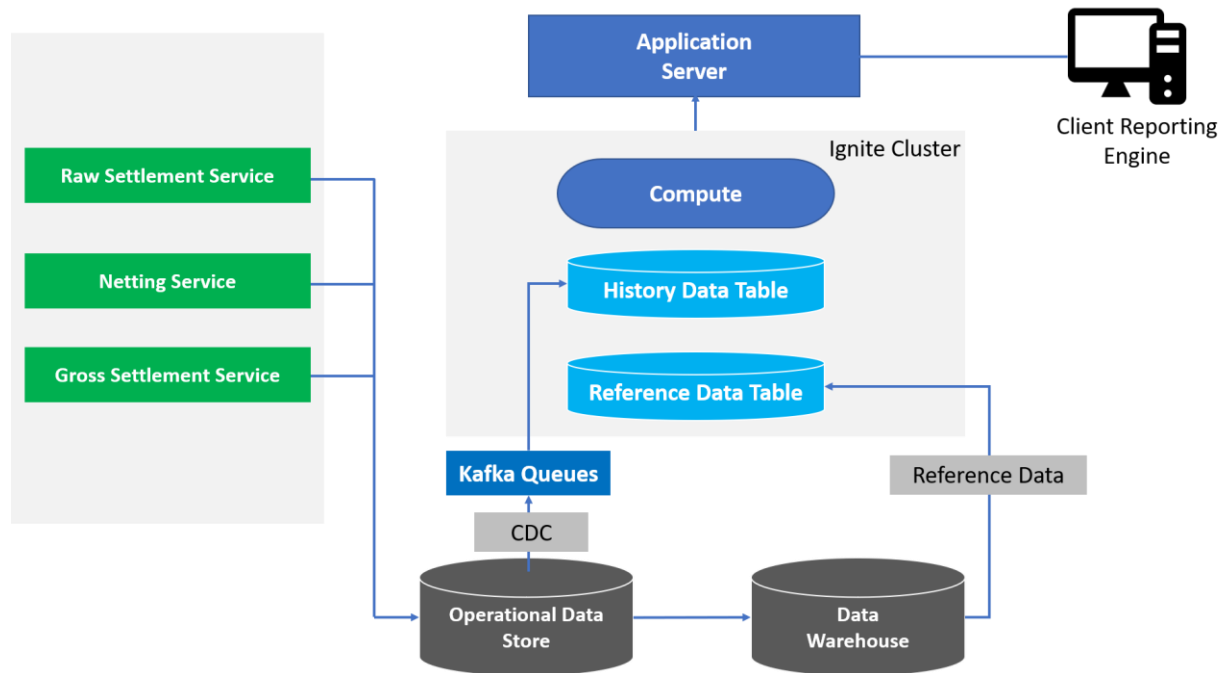
- Used IIDR – CDC to read/retrieve database updates and post them to Kafka topics
- Tested the system with a production data volume of 2 million rows

KEY BENEFITS

- Boosted query performance making data available from 40 minutes to under 6 minutes
- Improved scalability of the system by 90% handling 100 concurrent users
- Improved the client's UI application performance by 97%
- Ensured cross-region disaster recovery with zero data loss

- Used GridGain to implement horizontal scaling, data resiliency and disaster recovery
- Used Confluent to read the messages posted on Apache Kafka topics and update Ignite cache
- Used Map Reduce to utilize the parallel processing power of the cluster
- Denormalized GridGain tables/caches and optimized queries which run over those caches to improve performance
- Integrated IMDG with the current user interface in Angular & JDBC

High Level Architecture



Client Testimonial



Xoriant product engineering expertise and experience has been instrumental in re-engineering our data warehouse system. We have experienced seven-fold improvement in our system performance, resulting in faster access to critical business data.



Technology Stack

GridGain

Confluent

IBM DB2

Apache Kafka

Microsoft SQL Server



Xoriant is a Silicon Valley headquartered product engineering, software development and technology services company, serving technology startups as well as mid-size to large corporations. We offer a flexible blend of onsite, offsite and offshore services from our eight global delivery centers with over 2500 software professionals. Xoriant has deep client relationships spanning over 25 years with various clients ranging from startups to Fortune 100 companies.