Objectivity Case History

John Jarrell

Customer Information

Customer:	JPL – MLS Group
Industry:	Research & Development Division for Space & Scientific Experiments
Application Domain:	Comprehensive Query Application to Review Complex Astronomy Data Sets
Status:	New Prospect
Platform:	SUN Solaris
Compiler:	C++
Other Tools:	Competing against Sybase - Free software from this Relational Vendor
Platform: Compiler: Other Tools:	SUN Solaris C++ Competing against Sybase – Free software from this Relational Vendor

Application Background

Jet Propulsion Laboratory (JPL) is actually a department of Caltech, a nonprofit educational Institution well known throughout the world. The effective scientific exploration of enormous databases resulting from present space missions and astronomy surveys is a highly non-trivial task. The Machine Learning Systems (MLS) Group at JPL develops novel techniques and architectures for machine assisted discovery in large data sets. The techniques developed at MLS are applicable to astronomy, space science, and a range of other disciplines. JPL looks to the MLS Group, and the Information and Computing Technologies Research Section in general, for ideas and techniques for handling the analysis of huge scientific data sets resulting from modern missions. In particular, the MLS group advocates the development of spacecraft capable of performing autonomous scientific analyses. Such architectures are now in development and will be employed by JPL in future space missions.

Criteria

The MLS group intends to develop a software system for analyzing large scientific data sets. This system will allow for browsing and editing diverse data sets, defining analytical models, controlling model applications, and browsing or querying analysis results. With such a system MLS will be better able to develop and test their analytical techniques and demonstrate their applicability to a variety of large space-based scientific data sets. MLS requires the right database engine which will meet their objective of developing the next generation of science analysis tools that redefine the way scientists interact and extract information from large data sets.

Why Objectivity?

- 1. Objectivity will help the MLS group at JPL halve their "Time-to-Market costs" versus Sybase.
- 2. Objectivity will eliminate the need for mapping code. If JPL uses Sybase, JPL will increase their application code by as much as 30%. This may also result in increased debugging costs, maintaining costs, and performance issues as their application scales from a user and data volume perspective.
- 3. Objectivity/DB embedded into this software system will assist in the reduction and interpretation of a variety of space-based scientific data sets. If they use Sybase they might not be able to accomplish this objective.
- 4. They are considering Objectivity because of: our C++ and Java language bindings; adherence to the ODMG specifications; solutions frameworks; and scalability to multiprocessor machines.
- 5. Objectivity is able to handle not only complex data types but also complex relationships extremely well.

Contact Information

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