

Datasheet Versant Object Database

“We cannot afford to keep breaking up objects into SQL databases and then to reconstitute them when we load them into the program.”

“In addition, we did get an order of magnitude speed improvement on complex objects compared to SQL.”

**Eugene Joseph, CEO
North Side, Inc.**

Key Features

- Transparent object persistence from C++, Java and .NET
- Support for standards, e.g., JDO
- Seamless data base distribution
- Enterprise-class high availability
- Dynamic schema evolution
- Low to zero administration
- End-to-end object architecture
- Fine-grained concurrency control
- Multi-threading, multi-session

Key Benefits

- Fast storage, retrieval, navigation of object hierarchies and graphs
- 10X performance of RDBMS
- Cut development time up to 40%
- Lower server hardware costs

New for 8.0

- Improved multi core scalability
- Improved database administration tools (e.g., monitoring, dbcheck, dbreorg)
- .NET binding with LINQ support
- FTS for .NET and JDO based applications
- “Black Box” recorder and analysis

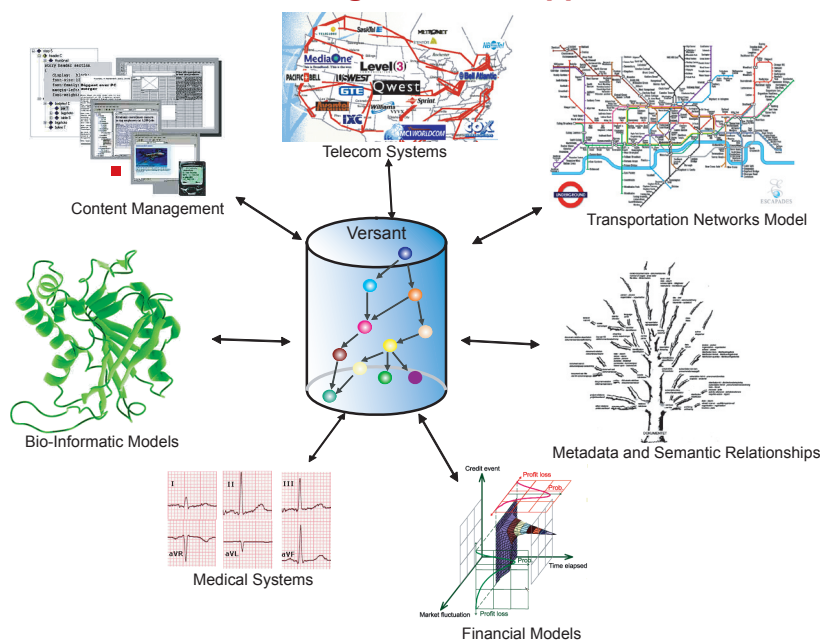
For Application Developers with Complex Persistent Object Models

The complexity of telecommunications infrastructure, transportation networks, simulations, financial instruments, online gaming networks and other domains is one of the most challenging aspects for the application developer.

Unlike many traditional IT applications these types of applications have different database requirements. Application models are complex, often hierarchical, and continue to evolve together with the business.

It is difficult and time consuming during development and expensive at run time to map application objects into a relational database and performance suffers. Using the Versant Object Database for data storage brings powerful advantages to application developers that use complex C++, Java or .NET object models, have high concurrency requirements, and large data sets.

Business Defining Database Applications



Versant helps building and evolving the database at the speed of the business. In addition, Versant’s performance and scalability advantages with complex application models provide a more efficient production environment, often supporting 10x more concurrent users and 10x faster data access speed compared to relational databases.

More performance, lower hardware costs and shorter development time – Versant saves time, money and gives you a competitive advantage.

“Often the best way to make powerful applications is by using object-oriented programming to its fullest. When you use a rich domain model, using an object database has big payoffs. Architects too often assume that storing the state of their objects in a relational database is the right answer. Often, it’s not, leading to awkward object to relational mappings that provide reduced performance. In short, use the right tool for the job.”

**Scott Ambler, Author,
Building Object Applications That
Work**

Key Versant Object Database Features & Benefits

Agile Development Environment

Transparent C++ Object Persistence

C++ objects, STL classes, and standard C++ collections such as dictionaries, maps, and the like are persisted in the database as-is. State changes are automatically tracked behind the scenes. When the associated transaction commits, all the changes are automatically sent to the database. The result is a very natural, low intrusion programming style that enables fast development and the agility of easy changes to the application as requirements change.

Transparent Java Object Persistence

Versant’s JVI & JDO 2.0 API provide transparent persistence of POJOs, including Java 2 collection classes, interfaces, and any defined user class. State changes are automatically tracked behind the scenes. Commits automatically push all the changes to the database. You get this lightweight programming style in managed and unmanaged deployments.

Transparent .NET Object Persistence

New in VOD version 8 is a programming language binding for the Microsoft .NET framework. VOD, supporting LINQ (Language Independent Query), an efficient programming paradigm for querying persistent objects. A complete integration into Visual Studio makes Versant a perfect persistence solution for any .NET developer

Dynamic Schema Evolution

Versant supports “lazy schema evolution”, meaning the objects are converted from an old schema to a new schema as they are touched. No explicit mapping or coding is required.

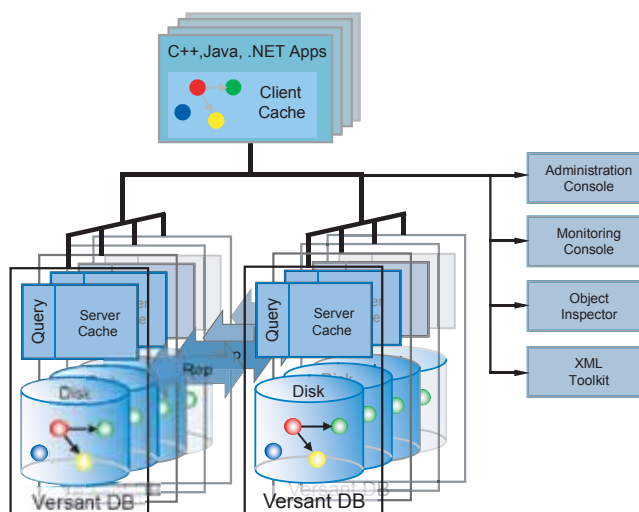
High Performance Database

Concurrency Control

Versant uses fine-grained object-level locking to maximize concurrency. Support for pessimistic and optimistic locking protocols allows the application to control access based on its needs. Object-level locking ensures conflict only occurs when two applications try to update the same object, unlike page-based locking mechanisms that can result in phantom concurrency hotspots.

Seamless Data Distribution Across Multiple Databases

Clients seamlessly interact with one or many databases. The seamless federation of individual databases lets you partition data, and increase read and write capacity/performance. Database distribution is transparent and operate like one seamless database providing great scalability.



Versant Object Database Architecture

Objects are managed via logical identity, allowing physical distribution of objects for archiving and partitioning without any code changes to the application.

Objects End-to-End

Objects end-to-end means that your application objects exist in the client, on the wire, and in the database. There's no mapping or transformation of the objects between their in-memory representation and the database, unlike when using an RDBMS. The client cache in your application transparently caches objects for speed. The database is object-aware, it can perform queries and manage indexes, allowing the application to balance processing between itself and the database. XA capability enables coordination with other transactional data sources.

Enterprise-Class Features

High-Availability

All database administration functions can be performed online for high availability

Fault Tolerant Server

The Fault Tolerant Server (FTS) option enables automatic fail-over/recovery in the case of hardware or software failures. FTS uses synchronous replication between two database server instances and supports automatic re-synchronization in the event of a failure.

Asynchronous Replication

The Asynchronous Replication option supports both master-slave and peer to-peer configuration between multiple Versant server instances. This can be used for instance to replicate a database to a distributed recovery site or to replicate data between multiple Versant servers for increased performance and reliability.

High Availability Backup

High Availability Backup is an option that enables Versant to use the disk mirroring features of EMC Symmetrix or other enterprise storage systems to perform an online backup of large data volumes without impacting availability.

Online Reorganizer

Versant Database Reorganizer option is for applications that delete large numbers of objects. The tool reclaims unused space in the database during normal operation, decreasing potential fragmentation, increasing available free and improving performance.

Operating System Support

Windows, Solaris, Linux, AIX, HP-UX

please contact us for version support

Selected Versant Customers



Free evaluations are available from the Versant web site at www.versant.com

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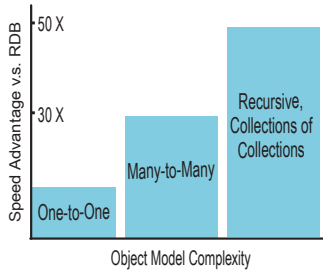
The #1 Object Database Worldwide

Speed Time to Market by Reducing Development Time

Object-relational mapping code can be 40% or more of your application. With Versant, mapping code is no longer required, and your development team is no longer restricted by the limitations of the relational database.

Dramatically Increase Performance and Throughput

The Versant Object Database provides significantly higher performance, in particular in applications with complex object models, navigational access and in memory persistence operations. As an example, when an application retrieves an object from the Versant Object Database, a single operation with the server fetches the object, irrespective of its complexity, compared to one or more expensive join operations in an RDBMS. Objects with moderate complexity perform typically at least 3x faster with Versant, objects with high levels of complexity, such as many-to many relationships perform 30x and more times faster when using Versant.



Evolve Your Application at the Speed of your Business

Today's rate of change in business process and structure and application requirements makes the ability to change, and to change quickly, extremely valuable. The Versant Object Database provides the programming interfaces and development tools to move at the speed of the business.

ROI – Lower Hardware Costs, Faster Time to Market

Versant is the preferred solution when it comes to complex persistent object models and large databases. 10 of 10 of the leading telecommunications companies are using the Versant Object Database for their network management software, saving money every day with lower hardware costs and staying competitive in a highly competitive world by meeting the ever changing demand of their business.