GEMFIRE™
THE ENTERPRISE DATA FABRIC

Enterprise Data Fabric: A Foundation for the information-driven business

A highly profitable, elite Wall-Street investment bank uses the mantra of 'business at warp speed with extreme flexibility'. By using a highly flexible, pervasive and extremely responsive information infrastructure at the core of its most relevant business processes, this bank is able to achieve significant competitive advantage leading to growth and profits.

One of the largest retailers in the world embraces the mantra of 'deep customer intimacy'. By plugging in their suppliers into their retail value chain, the onus of tracking product through the retailer's value chain is on the supplier. This level of intimacy is enabled through a completely-connected information infrastructure that enables real-time decisioning. Suppliers use information to make near real-time decisions on merchandising and promotions, resulting in increased profits and lower costs for both retailer and supplier.

A large Midwestern insurance company tracks the activities of its insurance agents on a continuous basis. They have adopted the mantra of 'continuous compliance' through their enterprise. Everything that is underwritten, every claim that is processed is continuously subject to compliance metrics. This is achievable through a seamless information flow across multiple systems enabling compliance tracking applications to monitor every activity that is at risk. By doing this in real-time, business processes are speeded up and costs are significantly lowered, because the enterprise stays continuously compliant.

What kind of information infrastructure is necessary for today's business that wants to operate at high efficiencies with extreme flexibility, wants to be deeply customer intimate and be continuously compliant?

This information infrastructure is at the root of near real-time business applications and processes, which pervade this modern enterprise. It needs to support the 'operationalization of data' - data that is being created at a monumental rate of over 100 Gb/sec. It needs to support data in motion - from the core to the edge, since decisioning and activity is becoming more global and more virtual. It needs to enable the delivery of the right kind of data at extremely low latencies, since 'data in the right form, at the right time and the right place' is necessary for the new real-time world of transactions, analytics and decision-support.

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The modern IT organization is adopting newer classes of hardware, moving to 64-bit computing, increased processor memory and even larger network bandwidth. One that is moving towards services-oriented architectures, grid computing, increasing server-side Java and event-driven architectures. The new information infrastructure has to fit right into these technology initiatives.

While databases continue to be systems of record and master repositories of information, they have inherent challenges in delivering information to distributed locations at low latencies in the right format. They need to be augmented through a first-class distributed operational store that stores and manages the 'application-native information' close to the application and supports both coherency of data across nodes and consistency of data with the back-end data sources.

Messaging systems such as Tibco RV, MQ and others were designed to connect multiple systems and exchange information across applications on a distributed network. However, they inherently do not store and manage data - in effect they are the opposite, since they are 'fire-and-forget' systems. An intermediate data store leverages messaging connectivity and uses messaging to send events to outside systems.

Enterprise Information Integration (EII), though promising at first glance through its ability to virtualize and federate across multiple data sources, has not seen the light of day in many real-world deployments due to the lack of scalability and performance. It inherently lacks data storage and distribution capabilities and is often forced function at the pace of the slowest member in its federated network.

An 'enterprise data fabric' (EDF) is a new class of near real-time operational information infrastructure that addresses the business drivers we have discussed thus far and fills the gap in existing technologies, and yet seamlessly fits into enterprise architectures and modern IT environments.

Fundamentally, it enables the treatment of data as a dynamic entity, which makes it well-suited to address the needs of today's agile business. Forrester Research in its recent report on 'Information Fabric' discusses the importance of this new breed of infrastructure. The report talks about the imperative for the modern enterprise to adopt this paradigm of the 'information fabric'.

An EDF must support these seven requirements:

1) Provides a scalable, low-latency operational data store spawning distributed main-memory and disk for large volumes.
   'operational' ==> distributed caching, querying, transactions, fine-grained control

2) Connects to backend systems of record and ensure data consistency at all times.

3) Manages large volumes of 'data in motion' and data distribution in a guaranteed, high throughput fashion.

4) Offers a reliable and highly available data network that is resilient to application failures.

5) Provides the ability to analyze and correlate streaming data/events and disseminate derived information.

6) Supports dynamic data integration and aggregation through sophisticated metadata management, modeling and information integration.

7) Ensures format, platform and language neutrality.

GemFire from GemStone Systems is a product suite that delivers on the enterprise data fabric. It has been adopted by five of the top 10 financial services firms and is rapidly emerging as the operational data infrastructure standard across enterprises in several other industries.

WHY GEMSTONE?

GemStone Systems has had significant experience building enterprise-class software and deploying and supporting industrial strength, mission-critical installations for over 20+ years. GemStone's engineering team brings together significant expertise and several man-years of experience in shared memory management, data distribution, object management and high performance computing technologies. GemStone has and continues to create intellectual property and GemStone's team is the recipient of several patents and pending patents in these technology areas. This combination of technology innovation and relentless commitment to customer success has been the cornerstone of GemStone success over the past several years.

For more information on the GemFire EDF, please visit http://www.gemstone.com/products/gemfire

You can download evaluation copies of GemFire products and white papers at http://www.gemstone.com/download

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