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Message Driven SOA --- Enterprise Service Oriented Architecture

Highly Scalable Java Messaging

Understanding FioranoMQ's Pluggable, Scalable Connection Management (SCM) Architecture

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Executive Summary

Messaging systems are an essential component for sharing information and integrating business operations in real-time across organizations. Companies are becoming more profitable from the increased efficiencies and timely information delivery that messaging systems provide. In 1998, Sun Microsystems defined the Java Message Service (JMS) standard as a common way for applications to create, send, receive and read messages.

FioranoMQ was the first vendor to ship a JMS implementation, which is being used by leading organizations including AT&T Wireless, KPMG, Fed Ex, Motorola, and JP Morgan. Over 300 organizations have chosen FioranoMQ for its inherently superior architecture and performance.

The Scalability Challenge

The explosion of the Internet and the exponential growth of distributed enterprise networks is putting unforeseen scalability demands on the new breed of e-business applications being currently delivered. Therefore, the ability for an organization to scale their applications smoothly is one of the greatest challenges being faced. These same issues, more specifically apply to systems that rely on messaging infrastructure to guarantee the delivery of business critical information between disparate systems. The objective of this white paper is to define the issues currently being faced by existing Java messaging servers and to describe the significant enhancements Fiorano Software has made to the architecture of FioranoMQ to accommodate these growing scalability requirements.

FioranoMQ now includes a new pluggable connection management architecture that enables customers to choose between a base, Pure Java connection management module and a Scalable Connection Management (SCM) module, which can support a significantly higher number of simultaneous client connections. The SCM module enables FioranoMQ to accommodate tens of thousands of concurrent client while existing Java messaging systems are limited to supporting only several thousands concurrent client. The Fiorano SCM for example, ensures your application will scale as its use outgrows departmental or pilot application stage and needs to service an entire distributed enterprise.

FioranoMQ gives you the choice to select the Pure Java connection management module or the native Scalable Connection Management module, depending on your application, system, and architectural requirements.

Messaging Scalability and Existing Connection Management

Current Java messaging systems are best suited for a maximum of up to approximately 2,000 concurrent client connections depending on message size, application type, and hardware. Existing Java messaging vendors may claim they offer high scalability but due to the inherent reasons described below they will not scale beyond a fixed point.

Achieving high scalability requires server resources to remain constant as client connections are added. Current systems however rely on a primitive architecture. For example, server resources (threads) are consumed just waiting for incoming data, adding unnecessary overhead. Furthermore, as each additional client connects a new thread needs to be allocated on the server, leading to linearly increasing server load. Under such conditions the server eventually slows down to unacceptable levels or crashes.

Fiorano's Connection Management architecture overcomes this problem by allowing a pluggable, native Scalable Connection Management module, which keeps server resources constant regardless of the number of concurrent client connections on the server.

High Scalability using pluggable, scalable connection management

The native SCM module enables FioranoMQ to achieve exponentially greater scalability by using a fixed pool of threads that keeps server resources constant by efficiently passing processing requests to the server. This fixed resource pool avoids the server being overburdened by an increasing number of additional users or during peak application usage times. The SCM also provides an internal mechanism to detect incoming data, while not taking up resources waiting for the connection. When data is detected a thread is automatically allocated to process the data and pass it to the server. After allocating the request, the thread is freed up and put back into the thread pool.

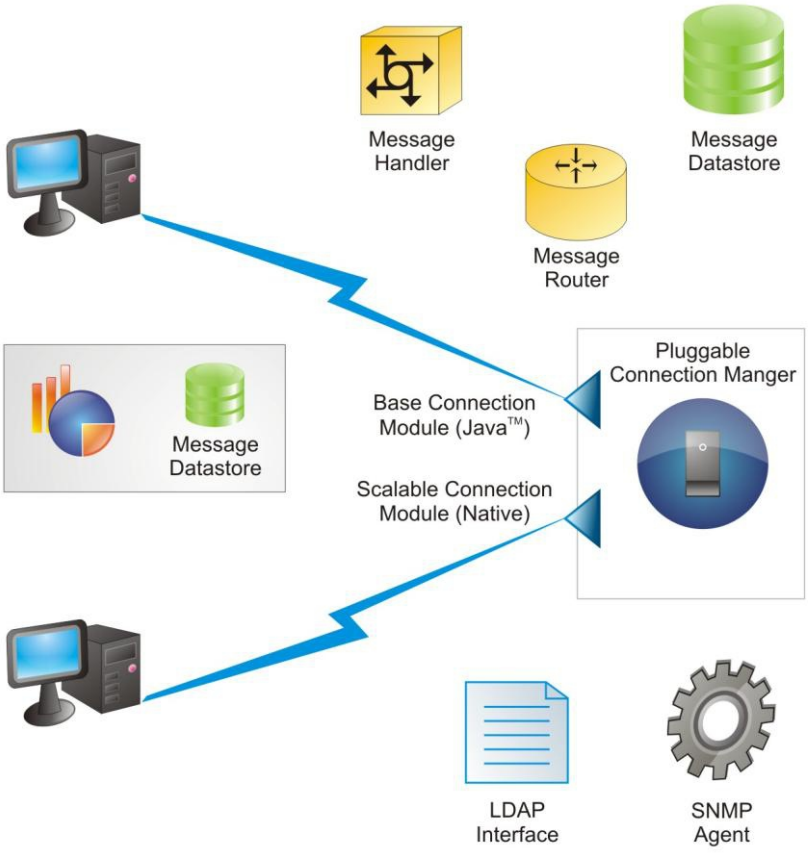

Figure1: The FioranoMQ pluggable architecture empowers you to choose between Java & Scalable Connection Management modules.

Deliver Scalability Today

FioranoMQ, with the option to use the Scalable Connection Management module is available today. Download your copy of FioranoMQ from http://www.fiorano.com. For further information please contact us using the information provided below.

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ABOUT FIORANO SOFTWARE

Founded in 1995, Silicon Valley based Fiorano is a USA (California) Corporation, a trusted provider of Digital Business Backplane and enterprise integration middleware, high performance messaging and peer-to-peer distributed systems. Fiorano powers real time, digital enterprises with bimodal integration and API Management strategy that leverages the best of systematic (centralized, high-control) and adaptive (federated, high-speed) approaches to deliver solutions across cloud, on-premise and hybrid environments. Fiorano operates through its worldwide offices and a global network of technology partners and value-added resellers.

Global leaders including AT&T Wireless, Boeing, British Telecom, Federal Bank, L'Oréal, McKesson, NASA, POSCO, Rabobank, Royal Bank of Scotland, Schlumberger, US Coast Guard and Vodafone have deployed Fiorano to drive innovation through open, standards-based, event-driven real-time solutions yielding unprecedented productivity.

To find out more about how Fiorano can help you meet your enterprise integration objectives, visit **www.fiorano.com** or e-mail **sales@fiorano.com**

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