From:	Eric Rudder
Sent:	Monday, December 08, 1997 10:33 AM
To:	Bill Gates
Cc:	Paul Gross
Subject:	FW: (InformationWeek) Java For The Enterprise

we need people to say this stuff abt OUR server components:

Enterprise JavaBeans enables rapid development of server-side applications. "Nothing like it has existed before," says Mark Benerofe, VP of programming and platform development for Sony Online Ventures, a unit of Sony Corp. in New York. "You can quickly tie together transactional objects into a coherent portable framework. That was a big reason we chose to do all our server-side development on Java."

we will never get the "love" that comes from solving the WORE problem, especially when you're dealing w. multiple server vendors, but we should at least get solid credit for tying together com components in a nice way. we need to *relentlessly* simplify how these server applications are put together.

i think the "developer" scenario in the vision memo that pgross is leading should really drill into this! products like Kiva and NetDynamics can NOT be allowed to catch us in the middle, as Notes does in some scenarios today.

-eric

----Original Message----

From:	Dawn Zeh
Sent:	Monday, December 08, 1997 9:53 AM
To:	Internet Client and Developer News
Subject:	(InformationWeek) Java For The Enterprise

Summary: InformationWeek reports that Java is poised to make its most significant leap yet. The promise: faster enterprise development, easier systems management, and applications that scale beyond the largest information systems used today.

This week, Sun Microsystems will unveil its long-awaited Enterprise JavaBeans specification.
Also this week, Oracle will announce that their entire suite of client-server applications is being rechristened Oracle Applications 10.7 NCA and will be delivered as all-Java packages beginning as early as this month. These announcements of all-Java products and technologies, both taking place at the Internet World show in New York, are designed to thrust Java further into the enterprise. But proof of Java's enterprise-readiness won't surprise its early adopters. They've been running big Java servers for more than a year.

News from your Library -

Java For The Enterprise

GOVERNMENT EXHIBIT 1340

Rich Levin
InformationWeek
12/08/97

Java is poised to make its most significant leap yet. The promise: faster enterprise development, easier systems management, and applications that scale beyond the largest information systems used today.

This week, Sun Microsystems will unveil its long-awaited Enterprise JavaBeans specification, arguably the industry's first server-specialized component model and one of the last outstanding pieces of the company's Java Computing Platform for the Enterprise initiative, introduced in April.

Also this week, Oracle will announce another Java milestone: The vendor's entire suite of client-server applications is being rechristened Oracle Applications 10.7 NCA and will be delivered as all-Java packages beginning as early as this month.

These announcements of all-Java products and technologies, both taking place at the Internet World show in New York, are designed to thrust Java further into the enterprise. But proof of Java's enterprise-readiness won't surprise its early adopters. They've been running big Java servers for more than a year.

"We're building mission-critical applications with Java, and it's working," says Mike Anderson, director of application services with Home Depot, the $20 billion home- center chain. Home Depot is preparing to deploy several all-Java distributed apps throughout its 700 locations nationwide. Applications will include inventory replenishment; human resource systems for training, benefits, and job applicant requirements; and a virtual office for remote store managers.

Like Home Depot, Sabre Technology Solutions is attracted to Java's cross-platform capabilities. Sabre is rewriting in Java its Qik-Access products, which include easy-to-use interfaces for airline reservations, airport departure control, and travel-agency systems. The current Qik-Access was written in C++ and is used on more than 100,000 PCs by Sabre customers-39 airlines and 75 travel agencies-running on OS/2, DOS, and various versions of Windows. "There's a significant amount of development overhead we have to do to support all of those platforms," says Noreen Henry, senior director of Sabre Technology.

Sabre would like to see its customers move to the Java version of Qik-Access. The most likely hardware platform for the application will be network computers or other thin clients. With Java Qik-Access, "customers are requesting that we support thin clients," says Henry. She adds that smaller airlines will be able to use Qik-Access because the application doesn't require pricey PCs. "We expect we'll grow our market share by tapping clients we haven't been able to tap before," she says.

Java will also bring cross-platform benefits to Ralston Purina Co. This week, the company will announce the completion of a Java-based manufacturing application, to be rolled out in January, that will allow operators to manage schedules and equipment for packing rooms. The application, Packview, will run on the company's myriad OS/2 and Windows NT clients. It was built using IBM's Visual Age Java for OS/2.

Bean Sprouts

Recent Java advancements make the language even more attractive to enterprise developers. For example, Sun's initial Enterprise JavaBean spec is an extension of the existing client Beans model. Shops building server-side components are well positioned to exploit Java's coming server play. When that happens, Enterprise JavaBeans' intrinsic transaction processing monitor and server-security facilities kick in, making the component more scalable than a conventional JavaBean.

Enterprise JavaBeans enables rapid development of server-side applications. "Nothing like it has existed before," says Mark Benerofe, VP of programming and platform development for Sony Online Ventures, a unit of Sony Corp. in New York. "You can quickly tie together transactional objects into a coherent portable framework. That was a big reason we chose to do all our server-side development on Java."

The spec will allow components for E-commerce and other transactions to be rapidly reused in multiple applications. "It's not only rapid deployment, but the promise and delivery of write once, reuse everywhere," Benerofe says. "For Sony,

a worldwide company, there are now lots of opportunities to eliminate overlap with common components."

Component-based systems today consist of an ugly mix of HTML, multiple scripting and server-side languages, and SQL stored procedures. But Enterprise JavaBeans promotes homogeneous systems in which the same components can run on the smallest client to the largest server.

"We're building directly for the Beans APIs," says Thomas Geer, chief architect at Visa International Inc. in San Mateo, Calif. "When the EJB tools finally arrive, it's a quick flip, and then we're going to be able to drag-and-drop the enterprise. That's the real power of all of this."

Visa has just embarked on its first large-scale Java project, updating its Visa Access Point system to an all-Java solution. These Visa systems are like telephone company switches, handling thousands of credit-card transactions per second from around the globe-each of which must be processed instantly and error-free.

"This thing has to scale indefinitely," says Art Machado, the project's chief technologist and president of Machado Group LLC, an IT consulting firm brought in by Visa. "We're handling 2,000 transactions per second worldwide. We're looking at 10,000 per second in the next few years."

A year ago, C or C++ would have been the only logical choices for an application of this type. But today Visa

International chose Java because it "gives us the power we need, does away with the pain of C++, and brings the legacy pieces together and makes them work," Machado says. "If we tried to do this application in C++, it would take three to four times as long."

Though dozens of tools are expected to hit the streets within months of the spec's debut, JavaSoft officials warn that they won't be adequate for serious Enterprise JavaBeans development. "It's not a final spec," says Jim Mitchell, VP of technology and architecture for JavaSoft. "It's more like a first draft."

Client-Server's Demise?

Oracle's move to make its enterprise applications Java-capable reflects the direction of users, market researchers say. "Our research shows about two-thirds of larger corporations expect to have browser access to their packages," says Bobby Cameron, a senior analyst with Forrester Research in Cambridge, Mass. "What Oracle is doing is consistent with the shift in the market. Competitors like SAP, Baan, and PeopleSoft are not far behind."

Oracle's making big predictions."We don't believe people will want to continue with client-server after this," says Peter Geller, a director of product marketing at Oracle. When the project is complete, expected by year's end, Oracle's financial, human resources, distribution, manufacturing, and sales applications will be accessible using any Java-capable Web browser. Oracle officials claim that none of the code of the reengineered apps will be stored on desktop clients.

Users say there are benefits to boosting Java's enterprise footprint on the applications side. "Externally, this means we can more effectively share information with our customers and suppliers through an extranet," says Don Wenninger, CIO of Vixel Corp. in Bothell, Wash. "Internally, our desktop resources will go down in terms of cost and response time. It may also mean less training on the applications, because most folks are already Web-aware."

Database vendors are displacing SQL with Java because SQL isn't portable and because object developers cringe at using legacy procedural code in interchangeable component frameworks. Replacing SQL with "Java triggers" lets database logic execute in a Java virtual machine, which itself is embedded into the database servers.

Sybase Inc. is already shipping its first implementation of embedded Java in its flagship product, Adaptive Server version 11.5. Object database vendor Versant will announce later this month its Java interface for the company's ODBMS 5 database. And IBM, which already supports Java in its DB2 database, is working on expanding that support.

"We're 'Java-tizing' to the fullest extent, and in '98-'99, we'll have more programming and functionality moving beyond the client to include the server," says John M. Thompson, senior VP and group executive for IBM's software group.

Still, there are issues with Java, mainly around performance. Developers say certain classes of Java applications will continue to sag under high transactions. "We have hundreds of thousands of people maintaining persistent connections to our site," says Benerofe of Sony. "For a high-volume site where Java is built on the fly, there's tremendous load and transactions per user." This leads to slower run-time performance, Benerofe says, and is a key reason Sony can't implement some performance-intensive procedures purely in server-side Java.

But even here, Java technology is poised to take a leap. The Open Group, an international consortium, last week announced the TurboJ Java compiler. Open Group officials claim TurboJ revs Java apps close to those of systems written in C or C++. Next year, Sun is expected to release its Hot Spot portable optimizing compiler, which company officials claim will put Java over the top in head-to-head comparisons with C++.

Java keeps reaching higher, but for some, its ascendance to the enterprise can't come fast enough.

"Hopefully, the pieces will come together quickly enough from vendors, so we don't end up blazing our own trail," says Home Depot's Anderson. "We can't wait. If we wait until everything is perfect, then we'll miss out on a lot of business opportunities."

-with Mary Hayes, Tom Stein, and Hakhi Alakhun El

Technology Snapshot

Enterprise JavaBeans

-Key component of Sun's Java Computing Platform for the Enterprise

-Server-side JavaBeans gain object-based transaction, security, and lifecycle services

ATTORNEYS ONLY

MSS 0122549
CONFIDENTIAL

-Industry's first pure object, portable component model

-Portability facilitates development of large enterprise object frameworks

-Components can be moved among heterogeneous systems, regardless of scale

-Transaction processing capabilities let applications scale beyond existing Java technology

-Integrates with existing transaction processing systems

-Interoperates with Corba systems through Internet Inter-ORB Protocol

-Future compiler technology may allow performance levels equivalent to native C++ code

DATA: INFORMATIONWEEK

Copyright 1997 CMP Publications Inc.

THE ABOVE MATERIAL IS COPYRIGHTED AND SHOULD NOT BE REPRODUCED OR DISTRIBUTED OUTSIDE OF MICROSOFT.

ATTORNEYS ONLY

MSS 0122550
CONFIDENTIAL