Managing for e-business

An executive overview of IBM eNetwork™ On-Demand Server

IBM Network Computing Software Division

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Introducing IBM eNetwork On-Demand Server

The Internet and its offshoot technologies are enabling enterprises to progress -- broaden their markets, improve their operations, and lower their costs -- faster and more creatively than ever before. Yet, the same qualities that make Java™ and other well-known Web technologies (CGI, HTML, etc.) so powerful also make them difficult to manage and control. As organizations begin to rely on this new generation, these applications need to offer the same level of security, reliability, and availability as mission critical legacy systems.

Until now the manageability gap found in Java and other Web applications, which are distributed from a server to run on a wide variety of clients, has limited how businesses were applying these new technologies. As a critical complement to Tivoli™ and other systems management software, IBM eNetwork™ On-Demand Server extends application management to the Java world. It allows programmers to transform Java programs into smart Web applications that have knowledge of the user, the device and the connection. Together they provide end to end management** and control of mission critical e-business applications. This latest addition to IBM's eNetwork Software family of products rapidly and securely delivers this new breed of transformational applications to any client located anywhere in the network.

Using New Technology for Transformation

The value of the e-business technologies stems from their ability to provide immediate universal access to data and applications, which means people -- customers, employees and business partners -- can get what they need when they need it from wherever they are. The resulting business environment creates satisfied customers, productive employees and advantageous business relationships.

Organizations are transforming into e-businesses with a number of innovative applications that are proving to be quite worthwhile.

To J.B. Hunt*** Transport Services, Inc., a $1.7-billion transportation and logistics company, managing more than two million truckload shipments a year has never been easier or more cost effective -- thanks to Java. J.B. Hunt Logistics developed the Java-based Internet Carrier Suite to help improve communications, reduce freight routing turnaround time and lower network costs for J.B. Hunt's third-party truckload carrier companies. In turn, the company expects to improve overall customer satisfaction.

The Internet Carrier Suite includes four Java-based applications that allow J.B. Hunt's third-party carrier companies to track carrier availability, schedule truck loads, track shipment status and enter freight invoices over the Internet. Before deploying the Internet Carrier Suite, JB Hunt communicated electronically with approximately 45% of their carriers using EDI, automated voice response or proprietary non-Internet software. With the Internet solution

approximately 86% of the carriers can take advantage of automated communication and J.B. Hunt can eliminate nearly one million manual phone calls a year.

The United States Postal Service (USPS) used Java technology on the internet to let its bulk mail customers work smarter and faster. Instead of having to fill out a myriad of confusing paper work, the customers can access a Java application on the USPS Web site. The Java-based forms look just like the paper ones but offer fill-in, auto-calculation and navigational features that can reduce the time a customer spends preparing a bulk mailing by between 60 and 80%.

KeyCorp*** has expanded its market by extending its existing loan processing systems to more than 6,000 automobile dealers and 1,500 recreational vehicle dealers. With the Java-based Key Auto Finance Loan Origination system, dealers can offer automatic loan processing over the Internet to customers from their Sales Department computers. Through its Web site (http://www.keybank.com), KeyCorp also offers an auto loan pre-approval service over the Internet.

Web Challenges

While the business potential of the Internet, Java and the like is almost intoxicating, actually managing applications in a production environment can be quite sobering. Running applications through Web browsers creates nontrivial challenges that must be addressed to ensure that these transformation technologies fulfill their potential and bring the expected benefits.

Applications run through browsers need flexibility because the characteristics of the runtime environment are completely changeable. One time an application can run on a high functioning laptop computer connected through a standard phone line and another time it may run on a diskless network computer directly linked to the server. And, as electronic equipment such as cell phones and pagers proliferate as computing devices, universal access to data and applications becomes even more challenging. Given this variability, the Web applications require intelligence to :

- provide access to different types of users without inconveniencing them,
- ensure the application is available in the correct format when a user requests it,
- protect the application from non-authorized users, and
- manage licensing.

IBM eNetwork On-Demand Server provides tools developers can use to transform Java programs into smart Web applications that have the flexibility to handle a wide variety of users, device types and connectivity options.

A company that ignores these issues before deploying an e-business application can run into a number of problems -- resulting in anything from customer inconvenience to a competitive disadvantage to serious operational consequences. As a fictional example, take the Java-based forms application offered by the US Postal Service. Without the right security measures in place,

a local post office might find itself doing a bulk mailing for Joe's Bar and Grill and yet billing Sam's Hardware store.

Availability is another issue. Although KeyCorp has taken a sophisticated approach to ensuring its application is there when needed (by integrating it with Tivoli Systems Management software and running it on the NetDynamics*** Web application server), other banks may not be as well protected. In such a case if an application unexpectedly goes down and the IT shop doesn't realize it, potential customers could decide to use a competitor that also offers similar on-line services on the Web. The longer the IT shop remains unaware of the application being down, the more customers that might choose the competition. Furthermore, it just looks bad to have an application not working.

Completing the e-business Environment with eNetwork On-Demand Server

The IBM eNetwork On-Demand Server completes the necessary tool set to create a secure, reliable and well-managed e-business. This eNetwork On-Demand Server infrastructure complements Web application and Web servers providing the necessary instrumentation and services to keep Java software running securely in a production environment.

On-Demand Server extends the value of existing systems management tools by communicating event and alarm information about the Java client. eNetwork On-Demand Server can identify e-business applications (enabled by the eNetwork On-Demand Server toolkit) that aren't working correctly and can even provide advance notice of potential problems. eNetwork On-Demand Server instrumentation collects the event and alarm information from Java client processes in a log file and sends this information to an On-Demand server machine. This information can than be used by the systems management tool. This is key to keeping mission critical applications up and running.

IBM eNetwork On-Demand Server also controls access to e-business applications so that unauthorized users can't get into a protected application. Furthermore, eNetwork On-Demand Server simplifies access for users by providing a single sign on for multiple applications. It also keeps track of user preferences eliminating redundant information entry.

In addition to simplifying tasks for the user, eNetwork On-Demand Server also makes administration easier. Administrators can manage a large number of clients from one central location -- or in fact from anywhere. With the proper authorization, a person can access eNetwork On-Demand Server administrative tasks from any client in the network.

The eNetwork On-Demand Server also comes with a toolkit that lets developers program systems management support into any Java application such as log/trace facilities as well as profile and license management. Beans for Java and industry standard programming interfaces (APIs) allow developers to include license management, user preference and Reliability, Availability and Serviceability (RAS) support to any Java applet. The bottom line on the toolkit

is that developers can focus on the meat of their applications rather than building a middleware support structure.

Business Significance

The universal access and portability of today's networking technologies offer incredible opportunities for an enterprise to expand its market and grow the businesses in new directions. But the applications that can lead to these benefits must be robust enough for enterprise deployment and the computing environment must have the right infrastructure in place to support these new technologies.

So becoming an e-business entails more than just using Internet technologies and Java to build innovative applications. It involves creating an environment that can support the unique operating characteristics of the new generation applications. Obviously it's important to discover brand new ways of operating with the newly available technologies. But it's just as important to fortify the supporting computing infrastructure. The support mechanisms need to ensure that the applications required by employees, customers and business partners are available on demand.

Once that infrastructure is in place, deploying and managing Java and other Internet applications becomes easier than ever. IBM eNetwork On-Demand Server provides the right mechanisms for maintaining control, minimizing risk and lowering cost as companies progress through their e-business transformations.