

JavaOne 2006

Highlights

- Sun will open source Java. When? Well, as soon as Sun decides *how*, meaning which model — CDDL, CPL, GPL, SISSL, or SPL — Sun will decide to choose. Sun is giving a big push to have the Java developers join the Java Community Process. As of May, 2006, Sun reports there are 1,052 JCP members. We suspect Sun wants to dilute the power of the current members (BEA, IBM, Nokia, *et al.*), hoping that the Java developers see things Sun's way. However, isn't this — Open Source Java — what the Java community has been craving for, for years? Once, Java is open sourced, does the community — especially Sun's competitors — need Sun anymore? Also, could an open source Java lead to multiple versions (as it happened to UNIX) with compatibility issues? It all depends on what open source model Sun decides to choose.
- Sun will open Ubuntu will ship a server version of their extremely popular Linux open source desktop.
- Sun hinted it might offer Linux (Ubuntu?) on Niagara. Unfortunately, Sun is a laggard as a Linux vendor and we expect market reception to be lukewarm at best.
- Marc Fleury (JBoss, being acquired by Red hat) announced JBoss will support NetBeans. An announcement is expected any day now.
- Java Studio Creator can be downloaded for free, and it supports GoogleMaps and JavaScript.

Road Warriors at JavaOne — Can Java Secure the Mobile Enterprise?

For years the message within the Java community has been that Java provides the only/best secure environment for remote access. Back in 1996 Sun launched JavaStation and it touted as an all-Java environment, providing insulation and isolation for data and applications from the evils of network-based intruders. About the same time, Oracle's Larry Ellison announced Network Computer, a thin client, In fact, both Larry Ellison and Scott McNealy predicted in 1998 the death of the PC and the inevitable rise of thin clients. We haven't heard much about the Network Computer and JavaStation turned out to be an expensive foot warmer for Sun employees! Today, annual worldwide PC shipments exceed 200 million!! With the coming of high(er) speed 2.5G and 3G mobile data services, Sun hawked the merits of the Java sandbox, byte code interpreters, and the "secure from the ground up" design philosophy. In 2000, the primary competition came from Microsoft's WinCE (aptly named) and Linux.

Well, it's 2006. Billions of Java-enabled devices are out there. What's really being put to use in the mobile enterprise?

We spent many hours at last week's JavaOne conference in San Francisco looking for real examples. There was definitely some good news for those who believe the enterprise should be mobile, yet connected.

RIM Leads the Pack

In one of the few non-Sun led sessions, RIM touted development of mobile web services and provided tangible ideas and warnings about how to get it right. Some of the recommendations included flattening and controlling the wireless environment by focusing on asynchronous messaging operations (eliminates delays and disruption if a signal is poor or lost), reusing common tasks like data management and screen building, and treating functions like security as services within a component model. For the latter, components are provisioned in containers and executed using templates, making them "executable metadata" whose interactions are expressed using Java, XML, and new frameworks such as those in JSR 279.

The goal of these ideas is to limit the complexity of the screens and interactions required for users accessing applications from mobile devices. Given the limited screen size and feature set,

uncertain connectivity, low battery life, small memory, modest computational strength, and limited manageability, application developers need to design very carefully to make mobile access useful. To ensure enterprise class security, all of these constraints need to be handled with the addition of secure data access for information stored locally, constraints on data being copied locally to USB devices, and remote management, including preservation of data during an upgrade.

RIM has been a vociferous supporter of Java on mobile devices, and they demonstrate how far you can take customer development using Java as one of the tools.

In a competing event for the initiated, RIM hosted the Wireless Enterprise Forum last week in Florida, with sponsors including most of the mobile carriers, a few household names (Lotus, Salesforce.com, Sybase) and many navigation and mobile productivity ISVs. Since 1998 when RIM shipped the Inter@ctive Pager (now familiar to us as the Blackberry), RIM has been able to focus on mobile productivity applications, and this focus has paid off with a profitable, now rapidly growing, niche.

JavaME and now Mobile JavaSE — Courting Consumers

However, most of the discussions about Java Mobile Edition (the profile formerly known as J2ME) were targeting consumer markets, where security is less of an issue because less data is stored on the lower-end devices which are the majority of unit shipments. When we asked about security, we were repeatedly told to use Java and SSL, and we'd be fine.

A new(er) player on the scene, SavaJe technologies, touted their all Java incarnation of Java SE (fat client Java) for mobile devices. Their stylish orange device was labeled device of the show and was available for sale for \$200 to developers. However, its demos and doodads were mostly geared to multimedia applications rather than enterprise tools. Their sole enterprise application was an address book tool built for them by Sun. So, it's good news that the APIs and implementations for audio, graphics, and the Swing UI are more available for mobile developers, but it's definitely still a roll-your-own world for the would-be enterprise mobilizer. The good news is that applications can behave more consistently across different classes of devices, which improves the developer's, the tester's, and the user's experience and makes for more consistent security policies and practices. So, SavaJe offers some new frontiers, sometime, but we were interested in reality today.

Smart Money on the SmartPhone

Not satisfied with what we'd seen, we reviewed the market share data for the PDA and smartphone segments of the mobile device market. In these areas, Microsoft has been showing dramatic growth, in volume and share, taking share from Palm especially. For the record, RIM has held its own, despite legal battles that media pundits turned into black predictions of imminent death. We visited Microsoft's booth to hear its story about mobile device security.

For starters, Microsoft's view of mobile devices firmly includes the laptop, which is undoubtedly still the preeminent tool for road warriors doing more than email. The laptop is also the source of most of the newsworthy data-loss articles, but as PDAs get more capable, can they be far behind? Microsoft suggested that we wouldn't see a decline in PDAs until the current teenagers dominated the workforce and helped us move from a voice generation to a text generation. That should definitely allow time for WinCE to mature.

Microsoft's Juggernaut Rolls On

The Windows CE devices that Microsoft are promoting (Palm and Audiovox are the biggest OEMs) leverage the Office and Exchange franchises for convenience and efficiency. But what about security? Luckily for Microsoft, the mobile data services market has taken off relatively slowly, allowing them room to maneuver and adapt. Here's the official party line: Since 2002 (the infamous Trustworthy Computing memo), Microsoft has retrained its entire staff to support a secure development lifecycle. For existing code, they did exhaustive penetration testing, inventoried the vulnerabilities found, and systematically worked to close loopholes. Where they had to, they rewrote features to make them secure.

For new releases, the secure development lifecycle has meant more time spent testing and validating code, including time spent onsite with customers using a tiger team model, where experts would visit the customer to diagnose and derail security issues. Microsoft has been diligently integrating security functions into its applications and working the PR machine to change customer environments and mindsets and increase its control over vulnerabilities, user environments, and wallet share. Recent polls seem to show this effort is succeeding in changing customer perception of Microsoft from security liability to security champion.

To tackle the challenges of mobile applications, Microsoft has enhanced Visual Studio to support multi-client targets, so that the design issues recounted by RIM are taken into consideration as early as possible in the development process, and development is efficient. New rule-based security tools can even analyze code subjectively for security vulnerabilities. False positives continue to hinder adoption of this approach, as with other automated security tools like intrusion detection, but its use is growing.

When asked about identity management and access control, our Microsoft spokesperson hedged. Microsoft is pushing to include multi-factor authentication in more application models and will support it in Office 12, due out in 2007. They also like the idea of integrated speech recognition to limit data entry and reduce UI complexity. (In our humble opinion, RIM might promote this, too, if their integrated phone/PDA weren't so miserable.)

For its part, however, Microsoft is promoting neither the centralized (aka Passport) nor the federated (aka Liberty) model, but is instead providing enabling support for both approaches and letting the developer and enterprise choose. This strategy conveniently skirts both the politics and the transparency and compliance sensitivities that have colored this discussion for several years. Microsoft thus emerges as an elder statesman (Ben Franklin),



rather than the opportunist (Jabba the Hut)!



Microsoft did say that they were proud of their support for Project Tango, enabling secure Java tokens and SAML(structured authentication markup language). This appeared to be their only connection/concession to Java on mobile devices. And for the mobile enterprise, judging by sales, perhaps it's enough.

Philosophical Waxing

So what did we learn? The PC is still the mobile device of choice. Protect them with authentication and encryption, and tell people not to leave them in their cars. Perhaps we need electronic ankle bracelets for laptops. For smaller devices, RIM appears to have the edge for road warriors interested in safely accessing standards-based applications. RIM can tap the built-in Java security capabilities while adding on required web services and mobile extras to its platform. They've captured the early adopters and are maintaining (expanding? check numbers) growth and share as this space matures. Microsoft continues to gain ground, perhaps as the path of least resistance for IT teams tasked with enabling remote access.

The bulk of the Java community remains intent on monetizing the consumer market. This feels like the war between the workstations and the PCs again — high-end, capable devices vs. commodity "good-enoughs". Will Java win this time, doing to Microsoft what Microsoft did to IBM and Sun? Unlikely, given that IBM and Sun never had the productivity-application franchise that Microsoft can leverage. While the Java developer community has been forced to mingle with the .Net community, there is no clear winner there. We're staying tuned. And not counting Microsoft out anytime soon.