

Combine mobile-device convenience with the power of WebSphere

Highlights

- ***Enables developers to extend e-business applications onto cellular telephones, Personal Digital Assistants (PDAs) and handheld computers***
- ***Integrated development environment for the creation of J2ME™ applications for running on Java Powered™ devices***
- ***Award-winning tools that assist in building the next generation of wireless applications***

Gaining the competitive edge

In today's e-business world, it's all about mobility. Mobility to conduct business from anywhere at any time. Mobility to exchange personal information while on the go. It's computing power freed from the desktop. And it's changing the way we all work and live.

Enterprises, Service Providers, carriers and device manufacturers are looking for ways to build new data services that create new sources of revenue and help these businesses compete. Developing applications that can be deployed and controlled on handheld devices is key.

Today IBM pervasive computing is enabling developers to create, test and extend e-business applications to mobile devices, using open standards and Java™ technology, supported by the WebSphere® platform and it's proven, secure and reliable infrastructure. For a growing legion of developers, WebSphere Studio Device Developer provides

the foundation for building these applications—and extending mobile e-business.

The open road ahead

Up until now, existing e-business applications have been accessed through browsers. IBM has now taken these data transaction applications one step further by leveraging open standards to connect applications to wireless devices. By connecting the mobile workforce to more business-critical data, transactions and applications in a secure environment, you can attract new customers and improve existing customer relationships. You also enable messaging, e-mailing, gaming and browsing to take place on virtually any handheld device. In the process, you can provide a faster, easier way to introduce new products and services to market.

Extending e-business

To reach the next generation of e-business devices, your IT platform must be an integrated environment that will support virtually any device, over a broad range of networks, and allow new applications to be easily built and deployed.

WebSphere Studio application development products allow developers to build and deploy applications that connect any device to any data on any server. Built from the ground up, our software is designed to help you maximize network usage by managing both devices and subscribers in a scalable, secure environment. It

allows you to add additional data services faster and easier, and at a lower cost. You can enable devices (cellular phones, PDAs and handheld computers) to become part of an end-to-end e-business solution. Ultimately, IBM brings to market a pervasive device platform that makes it easier for developers to adapt new devices to any mobile environment, now and down the road.

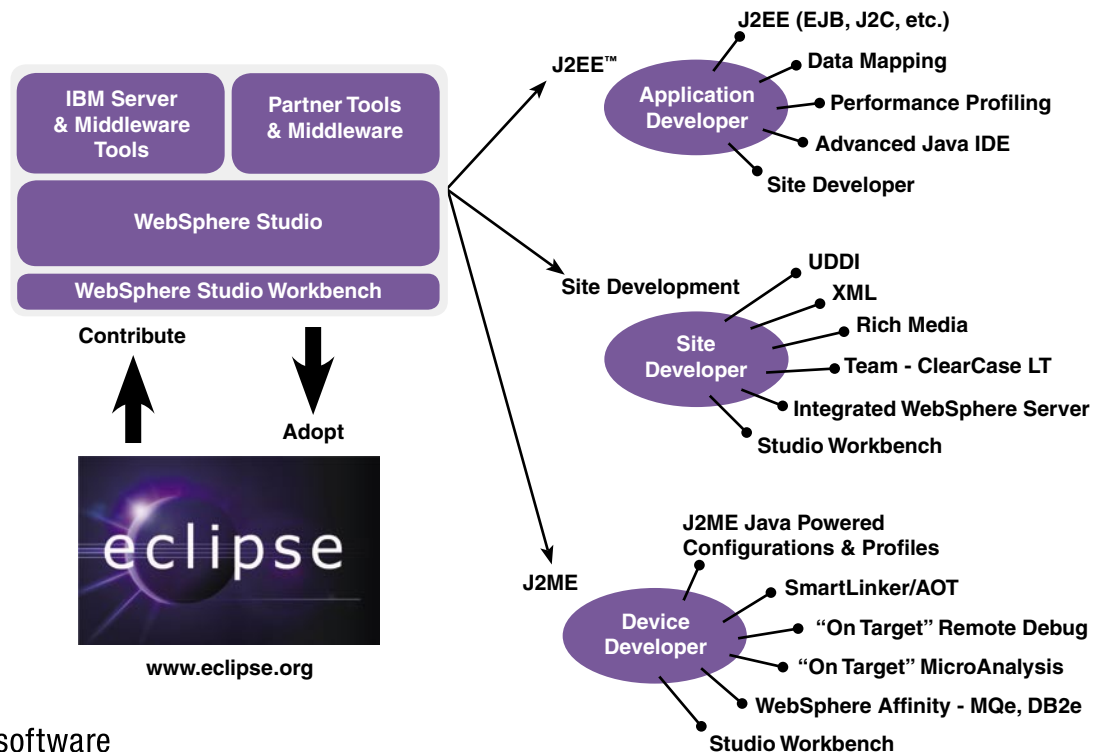
By using open standards to combine the portability of Java technology with the power of WebSphere, IBM brings the convenience of mobile devices to e-business.

IBM WebSphere Studio Device Developer —the right tools, the right foundation


Designed to help developers create and test J2ME applications, IBM WebSphere Studio Device Developer is the newest member of the WebSphere application development product group. This comprehensive, integrated development environment is available to the open-source community.

WebSphere Studio Device Developer offers tools that have been implemented using the Eclipse "Plug in" architecture (www.eclipse.org), enabling you to take advantage of this open platform architecture. By integrating productivity features as

The Right Tools



WebSphere Studio Device Developer

| | Productivity Features | Benefits |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Build | Integrated Development Environment <ul style="list-style-type: none"> • Editors • Code Completion • Refactoring Tools • Compiler Integration • Project, Class, MIDlet Wizards | A set of integrated tools to assist in the development and testing of J2ME applications for deployment to small devices. |
| | Team Development Environment | Provides extended development team a seamless environment for sharing assets. Allows for control of the development process and delivery of higher quality code. |
| | ANT Build Environment | Allows developers to create sophisticated build scripts and quickly test new variations on their program. |
| | Emulator Launcher/Emulator Interface | Speeds the compile/deployment cycle, provides view of the application that has been pre-loaded into the emulator, ready to test. Supports several emulators including MIDP, Qualcomm BREW™, PocketPC 2002, NOKIA® and Palm OS® Emulator (POSE). |
| |  Ships with development version of WebSphere Micro Environment Java Powered Runtime from IBM <ul style="list-style-type: none"> • CLDC/MIDP • CDC/Foundation • Personal (Beta) | By integrating runtime elements tightly with the tools, a productive iterative development environment for J2ME applications is provided to the developer. |
| | Version Control Interface (to CVS and commercially available version control systems) | Assists developers in controlling all elements that make up an application. |
| Optimize | SmartLinker technology | Optimizes applications to efficiently use memory on small devices. |
| | Java Powered Runtime from IBM <ul style="list-style-type: none"> • CLDC/MIDP • CDC/Foundation • Personal (Beta) | Quickly test applications inside the IDE. |
| | Just-in-time (JIT) and Ahead-of-Time (AOT) | Provides compilation technology to speed up portions of applications. |
| Test | "On Target" MicroAnalyzer | Enables discovery of bottlenecks in application performance for quick tuning. Delivers enhanced end-user experience. |
| | Applications for flash memory | Enables specification of applications to be deployed to flash memory and executed in place (XIP). Provides "instant on" capability for the end-user. |
| | "On Target" Remote Debug | Allows deployment of an application to a device and remotely debugs the application as it runs 'live' on the device. |
| | MicroAnalyzer | Points out bottlenecks in applications. Allows the developer to view memory status, threading and timing of all methods. A feedback loop identifies possible optimizations that a developer could use to speed up the application. |
| Deploy | Bundle Builder | Packages applications as Open Services Gateway i (OSGi) bundles, which facilitates the creation of software that can be provisioned to devices, updated on the device or removed from the device. |
| Maintain | Dynamic Install | Enables tools platform to be quickly updated to appropriate level for a specific plug-in extension. |
| | Web Updates | Enables developers to stay up-to-date with the latest enhancements (performance, size, new device support) from IBM. |

plug-in extensions to WebSphere Studio platform, IBM has created a single, collaborative environment for the development of end-to-end e-business.

WebSphere Studio Device Developer supplies award-winning tools, integrated into one package, so that teams of developers can quickly build, optimize, test, deploy and maintain applications deployed to PDAs, cellular telephones and other devices.

WebSphere Studio Device Developer also plugs into WebSphere Studio Application Developer to form a solution for the building, deployment, testing and maintenance of applications that connect J2ME devices to existing J2EE e-business systems.

IBM stands ready to help

At IBM, we have built lasting relationships with industry leaders in telecommunications, network services and Internet services. We understand your business and can provide custom solutions to expand your portfolio of services and speed your time to ROI. With worldwide resources and an extensive Business Partner network, IBM stands ready to help.

For more information

To learn more about IBM pervasive computing software solutions, visit ibm.com/pvc or call your local IBM representative.



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