IBM

WebSphere® software

Ultimate control over your mobile device environment

Highlights

- **Provides production level runtime environment for the deployment of deeply embedded applications**

- **Allows engineer's control over runtime environment**

- **Available on over 35 reference platform implementations**

Pervasive computing

With an increasingly mobile society and the pervasive reliance on small handheld devices, requirements to deliver services by connecting these devices to the Internet and existing Information Technology (IT) assets will only grow. So much growth that Venture Development Corporation predicts that the number of embedded devices using Java™ will reach 200 million by 2006. IBM is committed to meeting the needs of our customers and allowing our customers to respond quickly to changing system requirements. This has lead to the development of the next generation of runtimes deploying applications that run on a variety of embedded devices, including:

- *Handheld computers*
- *Service gateways*
- *Point-of-Sale systems, barcode scanners*
- *Automotive telematics systems*
- *Realtime and deep embedded devices such as plant floor controllers*
- *Personal Digital Assistants (PDAs)*
- *Cell phones*

The IBM WebSphere® Everyplace™ Embedded Software provides one-stop shopping for infrastructure and enablement middleware that simplifies the work of developers, extends the life of pervasive devices and helps you bring device applications to market quickly.

IBM delivers custom solutions

In order for Original Device Manufacturers (ODMs) to stay ahead of the wireless game, the competitive edge depends on getting a fast start to launch value-added features that create new sources of revenue for Service Providers. IBM WebSphere Everyplace Embedded Software enables Service Providers to launch these new services by creating a runtime solution for hosting Java applications on embedded devices. Built from the ground up, our software is designed for the management of both devices and subscribers in a scalable, secure environment.

WebSphere Custom Environment is a complete runtime environment for the deployment of embedded applications to realtime control systems and other deep embedded devices. This is tailored to customers that desire complete control over their applications to meet memory and speed design specifications. WebSphere Custom Environment delivers a production level runtime environment for embedded applications that adheres to the fundamentals of embedded systems development: flexible, fast, small and smart.

Device management
WebSphere Custom Environment also supports the Open Services Gateway initiative (OSGi). OSGi is an open standards group, committed to the over-the-air provisioning and maintenance of software. The OSGi framework works on bundles of software functions (classes, files, etc.) that can be pushed to, or pulled from, an embedded device.

IBM pioneered the Component Distribution System (CDS), an extension of OSGi for device provisioning and maintenance. Elements of the existing CDS system supported by WebSphere Micro Environment will be introduced into future versions of the OSGi specification. Customers investing in CDS will have a jump on the market.

Optimized environment
At the core of WebSphere Custom Environment Version 5.0 is the IBM J9™ Virtual Machine. J9 has been optimized for each of the supported reference platforms; critical when every byte of memory is tracked and the need for application performance is paramount. Based on 15 years of experience in the embedded virtual machine business, J9 is already used in production and proven in independent testing to provide a fast runtime environment for embedded systems.

WebSphere Custom Environment is the follow-up product to the Custom Class Libraries shipped with VisualAge® Micro Edition. For developers and engineers who require a J2ME® Java Powered™ platform for cellular telephones, PDAs, Set Top Boxes or gaming devices, WebSphere Micro Environment should be selected.

Memory and speed
WebSphere Custom Environment was designed with the constraints of limited memory availability and processing power in mind. By building the virtual machine to perform under the constraints of very small, embedded devices, the underlying architecture easily scales to deliver performance and footprint capabilities needed for the next generation of service gateways and vehicle telematics systems.

For engineers who need to know every line of code that is deployed to their device, WebSphere Custom Environment offers the maximum flexibility and the ultimate control over the resources used. The class libraries included in WebSphere Custom Environment (Xtreme, Core, Gateway, and Max) provide the engineer with superior flexibility over the function-versus-footprint tradeoff.

WebSphere Custom Environment V5 — Platform Coverage

Platforms	Xtreme	Core	Configurations Gateway & Gateway+	Max & RTE	AWT
The following platforms are available for evaluation purposes. For development or commercial deployment use please contact IBM (pvcsales@us.ibm.com) for availability dates and pricing.					
Linux/x86[§][JA]	Y	Y	Y	Y	Y
Windows®/x86[§][JA]	Y	Y	Y	Y	Y
AIX®/PowerPC[JA]	Y	Y	Y	Y	
Linux/ARM[JA]	Y	Y	Y	Y	Y
Palm OS/68K	Y				
PocketPC/ARM[JA]	Y	Y	Y	Y	Y
Solaris/Sparc	Y	Y	Y	Y	

Preview Platforms

Platforms	Xtreme	Core	Configurations Gateway & Gateway+	Max & RTE	AWT
The following platforms are available for evaluation purposes. For development or commercial deployment use please contact the referenced partner for availability dates and pricing.					
MontaVista Linux/MIPS	Y	Y	Y	Y	
MontaVista Linux/x86[JA]	Y	Y	Y	Y	Y
MontaVista Linux/ARM[JA]	Y	Y	Y	Y	Y
MontaVista Linux/PowerPC[JA]	Y	Y	Y	Y	Y
MontaVista Linux/SH4	Y	Y	Y	Y	
QNX/x86[JA]	Y	Y	Y	Y	Y
QNX/Arm	Y	Y	Y	Y	Y
QNX/MIPS	Y	Y	Y	Y	Y
QNX/PowerPC[JA]	Y	Y	Y	Y	Y
QNX/SH4	Y	Y	Y	Y	Y

Legend

JA   Indicates that the platform has a JIT and/or AOT option.
§   Indicates a development host platform.
Y   Indicates the configuration is available.

Native interfacing

WebSphere Custom Environment supports the Java Native Interface (JNI), which allows you to directly access native (non-Java) application interfaces, device drivers and Operating System (OS) functions. This provides maximum flexibility for engineers to select the peripheral devices (point-of-sale, barcode scanners, USB devices, etc.) for industry specific applications.

Partner support

Through IBM and our Business Partners, WebSphere Custom Environment will be available for over 35 reference platform implementations such as QNX®, MontaVista™, Linux, OSE, ITRON, PocketPC, and Palm OS®. With support for the market-leading processors such as the Xscale™, StrongARM™, X86, PowerPC®, 68K, ARM™, MIPS, and SuperH™, WebSphere Custom Environment provides seamless integration with legacy enterprise applications, allowing extension of e-business models and unfailing dependability — anytime, any place.

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.

IBM®

e business software

G210-1412-00