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IBM WebSphere Everyplace Chip Operating System — JavaCard OpenPlatform.

Highlights

- *Provides a reliable, scalable smart card environment*

- *Supports several open smart card standards, such as JavaCard™, GlobalPlatform, ISO (7816, 14443), ETSI; and more*

- *Supports multiple hardware platforms, providing high-performance application execution on mid-to-low range, 8/16-bit smart card chip platforms with standard security features*

- *Available in various editions, tuned to the specific needs and requirements of various smart card markets*

- *Provides integrated development tools to assist in the rapid creation and testing of smart card applications*

Better than magnetic stripes

Buying over the Internet, debit transactions, long-distance credit card purchases — society is rapidly moving in the direction of mass electronic commerce. Smart cards, the plastic cards that resemble standard credit cards but contain tiny microprocessors, are a growing component of e-business. The embedded microprocessor infuses the card with the ability to store a wealth of information as well as all the functionalities and possibilities of pervasive computing.

The IBM smart card advantage

IBM smart card solutions provide a reliable, scalable, standards-compliant smart card environment. The IBM WebSphere® Everyplace® Chip Operating System — JavaCard OpenPlatform (JCOP) is based on open standards, providing card issuers with the flexibility they need to address the multiple markets they serve.

Focusing on interoperability, JavaCard OpenPlatform scales across multiple silicon chip families, which enables card issuers to address the price sensitive financial market as well as more robust application areas such as biometric authentication. Through its silicon manufacturing partners, IBM offers a production-proven environment for many smart card markets and implementations.

By providing integrated development tools for the card operating system, IBM enhances developer productivity, reducing the card issuers' speed to market for new and innovative card services. More than just a stand-alone card operating system, IBM smart card technology provides a secure, mobile means to access, expand, and enable the possibilities of pervasive computing.

ON DEMAND BUSINESS™

Additionally, JavaCard OpenPlatform can provide card issuers various avenues to cost savings:

- *Fast transaction times*
- *Fast personalization times*
- *Smaller silicon due to compact code size delivering a more cost effective solution*
- *Card manufacturer independence.*

Proven, for many markets

IBM offers a host of production-proven smart card solutions that allow card manufacturers to customize services for many markets and implementations:

Financial/banking
- *Credit/debit*
- *Loyalty programs*
- *Europay Mastercard Visa (EMV) migrations*
- *Electronic wallet*
- *Contactless micropayments*
- *Vending machines*
- *Stored value*

Government and corporate identification, including biometric ID cards
- *Passports*
- *Immigration*
- *Border control*
- *Visas*
- *Drivers licenses*
- *Voter registration cards*
- *Identification cards*

Transportation, facilities, networks
- *Physical access, such as facilities access and restricted area access*
- *Logical access, such as computer system and network access*
- *Ticket-less travel*

Insurance and healthcare
- *Emergency medical information*
- *Healthcare coverage and eligibility*

Telecommunications
- *SIM cards*
- *Prepaid phone cards*

The JavaCard OpenPlatform family

The JavaCard OpenPlatform family is available in various editions, tuned to the specific needs and requirements of various smart card markets. All comply with the mandatory features of the JavaCard 2.2.1 and GlobalPlatform 2.1.1 specifications. While specific editions implement additional standards pertinent to their targeted market. JCOP21, JCOP31 and JCOP41 possess the capability across multiple security domains.

- ***JCOP10*** – *The DES, 3-DES and AES edition, targeted at the price-sensitive market with a focus on banking applications*
- ***JCOP20/21*** – *The entry Public Key (RSA) edition, targeted at the higher-end banking market*
- ***JCOP30/31*** – *The entry, dual-interface (contact/contactless) edition, targeted at the intersection of the banking, ID and transportation markets*
- ***JCOP40/41*** – *Adds an USB interface to the JavaCard OpenPlatform 30 cards. This provides a popular form factor for authentication devices*

Other configurations are possible — e.g. with specific algorithms (crypto or bio).

Tools and components

The JavaCard OpenPlatform Toolkit provides developers with an Eclipse.org-based integrated development environment (IDE), tuned to assist in the building and testing of smart card applications. The JavaCard OpenPlatform Toolkit includes:

- *Integrated development environment*
- *Source-level debugger and 32-bit JavaCard Virtual Machine (JCVM) emulation*
- *JCShell for scriptable interaction with GlobalPlatform-compliant cards.*

Adherence to worldwide standards

A big part of the smart card story is making sure that card solutions are accepted worldwide. IBM's demonstrated adherence to open standards can help to ensure broad acceptance of WebSphere Everyplace Chip Operating System. IBM is a leader on both the technology and the standards fronts for smart cards, with solutions defined by:

- *Java™ (JavaCard, GlobalPlatform)*
- *Cryptography (DES, 3DES, RSA SHA, MD5, oncard key generation)*
- *Finance (EMV, Visa)*
- *Input / Output (ISO 7816 for contact and ISO 14443 for contactless cards)*
- *SIM (WAP/WIM, ETSI, GSM)*

An integrated solution

IBM smart card solutions offer clients the flexibility that accrues from an open-standards-based approach; the scalability and power of end-to-end business process automation; and an integrated tool kit that allows developers to quickly and easily create, test and deploy new, innovative card services. IBM stands alone in its ability to offer integrated smart card-based e-business solutions across multiple industries and market segments, in a trusted, open environment.

To learn more

For more information, call your local IBM sales representative, contact an IBM Business Partner, or visit:

ibm.com/software/wireless

Overview of benefits and features

Benefits	Supporting features
WebSphere Everyplace Chip Operating System—JavaCard OpenPlatform provides a reliable, scalable, standards-compliant smart card environment:	• Compliant with the JavaCard specification • Compliant with the GlobalPlatform specification • Compliant with a host of other relevant industry standards for Java technology, cryptography, I/O, financial, telecommunications (ETSI), and more • IBM JCOP environment provides an industry-independent implementation of state-of-the-art smart card standards
IBM smart card technology focuses on flexibility to assist smart card issuers and manufacturers to develop innovative solutions for many different markets, including:	• Financial (e.g., credit, debit, e-purses) • Identification (e.g., biometrics) • Healthcare • Access (e.g., transportation, facilities, and network control) • Telecommunications (e.g., SIM cards)
IBM JavaCard OpenPlatform provides a highly efficient, production-proven implementation, with features that include:	• High-performance application execution on mid-to-low range, 8/16-bit smart card chip platforms with all security features expected from standard smart card offerings • Standardized applet ROM-ing capabilities can provide hardware cost savings • Tailored offerings to address specific markets

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