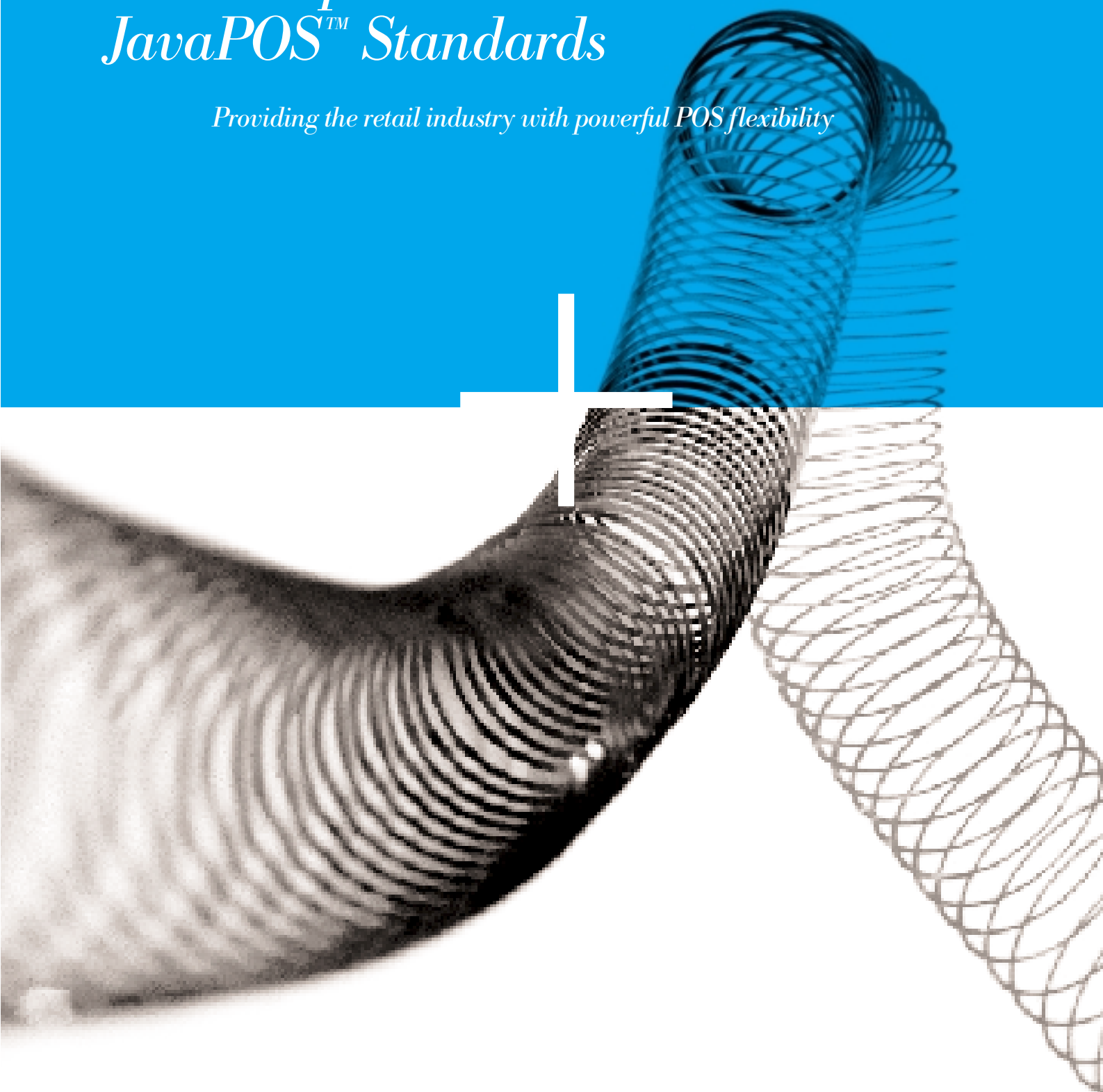IBM

IBM Compliance with JavaPOS™ Standards

Providing the retail industry with powerful POS flexibility

Truly open systems
With JavaPOS-compliant solutions, applications can achieve 'write once, run anywhere' platform independence with retail POS peripherals.

Remarkable flexibility
With JavaPOS-compliant solutions, retailers have the flexibility to mix and match equipment from different manufacturers, without normal concerns about interoperability. This lets retailers grow at their own pace and bring proven solutions to any new or acquired location that uses JavaPOS-compliant hardware.

Investment protection
Java applications will run on any solutions that support the standard, so retailers can keep hardware and I/O devices in place for the entire life of the equipment – even when using new or updated applications. JavaPOS-compliant retail solutions also allow retailers to take advantage of the cost benefits of thin client computing.

Java: A rising force in retail

Java™ – perhaps the most exciting technology innovation in a decade – gains momentum in retail every day. After making a huge impact in consumer computing and the Internet community, Java is now being embraced by global retailers, retail software vendors and service providers.

This broad-based enthusiasm led to Java for Retail POS, or JavaPOS™ – the architecture for Java-based POS device access. JavaPOS is endorsed by the National Retail Federation (NRF) and the NRF's Association for Retail Technology Standards (ARTS).

The OLE Point-of-Sale (OPOS) standard was the starting point for JavaPOS. Later, the UnifiedPOS (UPOS) committee was formed to help ensure future releases of JavaPOS and OPOS would share the same POS device architecture. The resulting UPOS retail device standard is operating system independent and language neutral. Support for new device types in UPOS will be quickly mapped to the Windows® /OLE platform (by OPOS) and to the Java platform (by JavaPOS).

Ideally, JavaPOS will provide a standardized way for retail applications written in Java to manage I/O devices. Eventually, JavaPOS will allow software developers to create retail applications with true 'write once, run anywhere' platform independence. Retailers will have remarkable new freedom to find the best solutions for their business and deploy them in any store environment.

Before this can happen, it's up to retail solution providers to make sure POS systems support the standard. IBM first embraced the Java movement in retail by porting a Java Virtual Machine to the IBM 4690 Operating System. The next logical offering is JavaPOS device access that standardizes access to retail I/O through the IBM 4690 OS or Microsoft® Windows operating systems. That's why a majority of POS equipment from IBM Retail Store Solutions now supports the JavaPOS standard.

Achieving open systems

With JavaPOS-compliant solutions from IBM and other providers, open systems can finally become a reality for retailers and retail software developers. Applications can run equally well on thick or thin client environments because Java applications will be deployed in both models.

A dramatic increase in flexibility

Retailers in a JavaPOS environment will be able to design store systems, update or change software, and upgrade or add new I/O devices – such as keyboards, printers, cash drawers and scanners – without the normal concerns about interoperability. In fact, retailers will have the flexibility to mix and match equipment from different manufacturers. So, retailers can grow at their own pace, update equipment as necessary and bring proven solutions to any new or acquired location that uses JavaPOS-compliant hardware.

Powerful investment protection

All of this translates into unprecedented investment protection. Because Java applications will run on any solutions that support the standard, retailers can keep hardware and I/O devices in place for the entire life of the equipment – even when using new or updated applications.

Retail solutions that support JavaPOS will also allow retailers to move to thin client computing. This can reduce the total cost of ownership for POS solutions, because applications and supporting software can be maintained on a server and loaded on demand with Java.

The promise of Java in retail

Java development resources are readily available and growing rapidly, simply because Java provides such an easy-to-use, productive software development environment. As more Java applications designed specifically for retail become available, the industry will move even closer to creating a seamless store environment for customers – whether they're buying in person, through kiosks or on the Web, or using cash, checks or credit/debit/loyalty cards.

Technology leadership from IBM

IBM Retail Store Solutions is proud to support the standards of the JavaPOS architecture. We feel the momentum building for JavaPOS within the retail industry as more and more retailers, software vendors and service providers come on board. We know our continued work with the JavaPOS committee will help create a more flexible, convenient and cost-effective environment for retailers everywhere.

Understanding JavaPOS Architecture

JavaPOS is a multilayered architecture. JavaPOS device access is provided via operating systems that feature a Java Virtual Machine (JVM), the software that interprets application code. Today, IBM supports the following platforms: Windows 98, Windows NT® and IBM 4690 OS V2 R2.

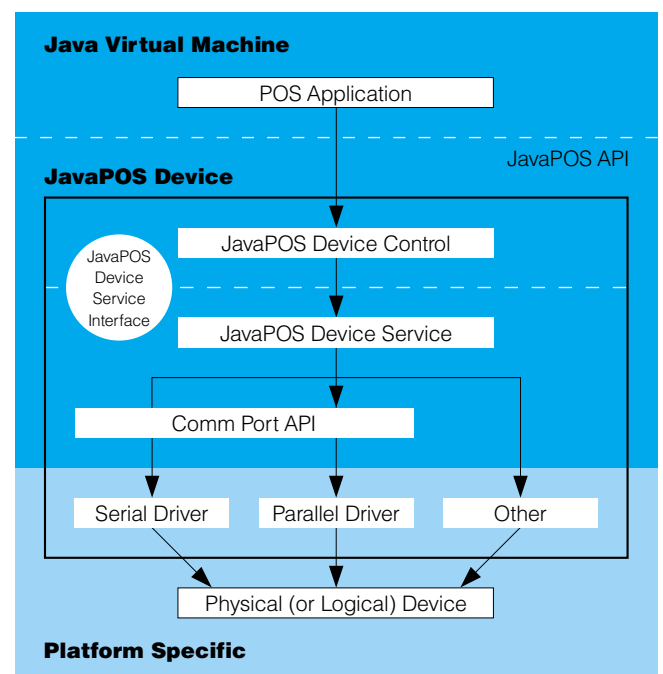**POS applications** occupy the top layer.

Applications use **JavaPOS APIs** – which are provided by the JavaPOS Device Controls – to access and control retail device hardware.

The **JavaPOS Device** includes the **Device Control** and **Device Service**.

The **JavaPOS Device Control** supports the POS application's use of the JavaPOS APIs. Each Device Control defines a device category, such as 'Scanner' or 'Cash Drawer.' Categories remain common across vendors. For example, applications employ the same POS printer Device Control regardless of the brand of the installed printer. JavaPOS Device Controls are typically supplied by device manufacturers.

The **JavaPOS Device Service** decouples the Device Control (and the POS application) from the specifics of attached POS peripherals. It is the device manager and supports vendor-specific features and connectivity requirements. JavaPOS Device Services are supplied by device manufacturers.

The **Physical (or Logical) Device** performs the actions indicated by the POS application.

Java Virtual Machine

POS Application

JavaPOS API

JavaPOS Device

JavaPOS Device Service Interface

JavaPOS Device Control

JavaPOS Device Service

Comm Port API

Serial Driver | Parallel Driver | Other

Physical (or Logical) Device

Platform Specific

IBM

Find out more today

For detailed technical information about JavaPOS, please visit the following sites:

www.ibm.com/solutions/retail
www.javapos.com
www.nrf.com
www.nrf-arts.org

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