

Operating Systems/Middleware

Microsoft Windows and Linux

Sales reference guide



Summary

There are a significant number of retailers worldwide who require general-purpose operating systems – specifically, offerings from Microsoft® and the open-source-maintained Linux platform. Some need these operating systems to accommodate specific hardware configurations or applications. Some need to enable older hardware (for example, DOS-based, point-of-sale (POS) terminals) for new applications. Others need to implement new POS hardware – including the IBM SurePOS™ 300 Series, IBM SurePOS 500 Series and IBM SurePOS 600 Series – designed for food service, retail petroleum and other segments where Windows® and Linux are the preferred platforms. Of course, these retailers too are faced with the challenges of an on demand world, and must address the same retail on demand imperatives. And because IBM Retail Store Solutions is committed to helping all retailers realize the vision of retail on demand, we strive to accommodate the need for general-purpose operating systems. In this section, we will discuss the opportunities that Microsoft Windows and Linux afford and present a strategic vision that includes these platforms as well as the IBM 4690 OS.

Microsoft Windows

There are four groups of operating systems from Microsoft used in the retail industry for POS environments. All four are viable options for retailers, depending on their current IT infrastructure and future in-store needs. Some of these – specifically, Windows 2000 and XP Professional – can also be preloaded onto any of the POS systems in the IBM Retail Store Solutions portfolio.

- **Windows XP Embedded**

This platform is Microsoft's lead-with offering for POS environments. It offers a less expensive initial licensing option (than Microsoft's desktop operating system options), with a toolkit for customizing Microsoft Windows XP Professional Edition. Retail-specific features include support for USB, dual displays and network boot. Other features include full Windows XP function and a wide range of available applications. It also enables integrators to build an operating system image that only includes the XP Professional Edition components necessary for a given POS solution. This image can be built with most XP Professional Edition components.

- **Windows 2000 Professional Edition, Windows XP Professional Edition**

These operating systems offer greater stability and reliability than Windows 98. However, they are more expensive to purchase and require more memory and faster processors. They work well with back-office and ISP applications, and are suited to customers who may not want to invest in the image creation and ongoing support and maintenance costs of a unique image with XP Embedded.

- **Windows 98/NT**

Support for the IBM POS Subsystem for Windows device drivers for the Microsoft Windows 98 and Microsoft Windows NT® 4.0 operating systems will be withdrawn on July 1, 2004. This is in response to Microsoft's withdrawal of support for Windows NT 4.0 and Windows 98 as of June 30, 2002 and 2003, respectively. Microsoft is currently promoting the value of migrating from Windows NT to other Microsoft platforms. Since July 1, 2003, IBM has not offered retail hardware or software platforms that support Windows 98. Windows NT 4.0 and driver updates are available only by special customer request (PRPQ) through July 1, 2004.

- **Windows Embedded Platform (CE.net)**

This is the operating system for handheld devices. It has the smallest memory footprint of the four and provides the least functionality. While it supports low-end, mobile POS applications and USB peripherals, it is not prevalent in traditional POS installations and as such is not currently supported by IBM.

Linux

Because Linux is an open-source operating system, it presents some unique opportunities for the retail world. Keep in mind, there is no single, unified Linux operating system. Instead, there are several distributions maintained by different open-source organizations and commercial vendors.

What makes Linux attractive to retailers is its reliability (including support for a wide array of devices and investment protection for older hardware) and flexibility (thin-client or thick-client implementation). Linux is also an attractive option for retailers because of its low total cost of ownership (TCO): the initial license cost is minimal, and in some cases, it is free. While ongoing support is not free, there are multiple sourcing options. Linux also provides strong reliability for back-office servers. Overall, interest in Linux remains strongest in Europe and is growing rapidly in North America. Traditionally, due to its open source heritage, Linux was suited to technology-savvy retailers with skilled IT shops that handle support in-house. Today, IBM is creating Linux opportunities for retailers regardless of existing in-house IT support with a more turnkey offering: the IBM Retail Environment for SUSE LINUX (IRES). (For more information about IRES, see *Operating Systems/Middleware: IBM Retail Environment for SUSE LINUX*.)

Strategic vision

Microsoft Windows, Linux and the IBM 4690 OS are all viable options for IBM Retail Store Solutions customers. Choosing the right operating system will depend on two factors: the retailer's existing store systems and the retailer's goals for the future.

For example, if retailers have DOS-based POS terminals, they may find it easier to implement Linux at the POS because of its comparatively low hardware requirements. In the same way, retailers who want to maximize choices for applications will favor a Windows implementation.

The IBM 4690 OS is recommended for any retailer looking for outstanding security and proven reliability in retail environments. IBM continues to support and grow the large install base of IBM 4690 OS customers by investing in 4690 enhancements, continuing to extend support related to Java™ standards and supporting new hardware platforms. It also continues to be a viable platform for best-of-breed Java solutions.

The current IBM Retail Store Solutions strategy for enabling our POS hardware offerings for select Windows operating systems (Windows 2000 Professional Edition and Windows XP Professional Edition) is to support the JavaPOS and OPOS standards. For application providers requiring XP Embedded, IBM Retail Store Solutions will provide guidance in creating the XP Embedded image for supporting select IBM POS hardware. IBM Retail Store Solutions will also offer standard support for unique XP Embedded operating system images, once the problem has been recreated under XP Professional.

Today, IBM supports Red Hat Linux 7.1 and 7.3 on select POS hardware with a JavaPOS interface. However, this support will be withdrawn at the end of 2004. (Please note: Red Hat discontinued support for these commercial distributions (i.e. 7.x, 8.x, 9.x) on December 31, 2003.) IBM also provides native Linux drivers for Linux applications developed in a non-Java environment for IBM SurePOS 4694 systems.

To make Linux a viable option for any retailer, IBM has created a development partnership with Novell, Inc., to provide the IRES, which is a service and support offering from IBM for the SUSE LINUX Retail Solution. Novell provides and distributes the SUSE LINUX operating system, which has been optimized for retail and designed to work with IBM SurePOS and IBM xSeries™ server systems and IBM middleware.

IBM will continue to rely on Business Partners and independent software vendors (ISVs) to facilitate operating system and application integration for IBM 4690 OS, Microsoft Windows and Linux. To help you determine which platform is right for your retail customers, IBM has developed the following at-a-glance comparison of some significant differences among these operating systems.

OS comparison

	Linux	IRES	IBM 4690 OS	Microsoft Windows XP Embedded
TCO	<p>Lower TCO</p> <ul style="list-style-type: none"> • Reduced or no license/access fees • Less expensive upgrades • Lower hardware requirements 	<p>Low TCO</p> <ul style="list-style-type: none"> • Built on industry-standard Linux distribution • Initial license fees for IBM software • Investment protection for IBM POS hardware • Remote boot for diskless POS terminals • Linux-based system management • High-availability configuration option with dual servers 	<p>Lowest TCO</p> <ul style="list-style-type: none"> • Initial licensing and subscription fees • Diskless thin-client for manageability • Automated failover and data redundancy included • Strong investment protection • Systems management components included 	<p>Higher TCO</p> <ul style="list-style-type: none"> • Initial licensing fees • Upgrades via subscription or fees • XP Embedded image creation • Client access licenses for each POS terminal
Implementation and support model	Open-source model with multiple vendor choices for implementation and support	Open-source model with multivendor flexibility for sourcing support, maintenance and services Worldwide IBM support model for SUSE LINUX and IBM software	Single-vendor model for implementation and support Unparalleled support model for on demand maintenance	Multitiered, multiple vendor model for implementation and support
Optimization	Customization of the operating system required for retail optimization	<p>Purpose-optimized operating system designed for retail</p> <ul style="list-style-type: none"> • High availability, reliability and data integrity are built-in • Designed to meet the needs of a transaction-based environment <p>Four base POS images that scale to provide a broad range of functionality for POS application solutions</p> <ul style="list-style-type: none"> • Build tools for customization of Linux images provided 	<p>Purpose-optimized operating system designed for retail</p> <ul style="list-style-type: none"> • High availability, reliability and data integrity are built-in • Designed to meet the needs of a transaction-based environment 	Customization of the XP Professional operating system required for retail optimization (using XP Embedded development toolkit)
Application choices	More applications available	<p>Many applications from IBM Business Partners and independent software vendors (ISVs) through the Ready for IBM Retail Store Innovations program</p> <p>Current ISV solutions include: 360 Commerce, Retek, Triversity, PCMS/Datafit</p>	<p>Growing number of retail applications available</p> <ul style="list-style-type: none"> • Traditional 4690 applications: GSA, SA, CSA, Specialty • New 4690 applications: ACE • New Java applications: 360 Commerce, Triversity, ADS, PCMS/Datafit 	Most applications available

OS comparison (continued)

	Linux	IRES	IBM 4690 OS	Microsoft Windows XP Embedded
Hardware choices	More hardware platforms and devices supported across various hardware architectures	Select IBM POS hardware and xSeries (1 to 2 CPUs) servers supported, allowing for testing and certification to ensure high availability and reliability	Select IBM POS hardware and xSeries servers supported, allowing for testing and certification to ensure high availability and reliability Growing number of devices supported, but not tested, to increase attachment options	Most hardware platforms and devices supported (Intel only)
Reliability	Reliability built into the operating system (given the open source model) Requires fewer resources to maintain reliability ¹	Reliability built into the operating system (given the open source model) <ul style="list-style-type: none"> Platform designed to be installed and administered remotely Built on the assumption there will be no skilled resources in the store SUSE LINUX Retail Solution is built on the same code base as SUSE LINUX enterprise distribution 	Reliability built into the operating system <ul style="list-style-type: none"> Platform designed to be installed and administered remotely Built on the assumption there will be no skilled resources in the store 	Requires more resources to maintain reliability ¹

For more information

For a complete list of IBM hardware systems supported for Microsoft Windows and Linux, please visit: www.ibm.com/solutions/retail/store/support/html/drivers.html.

If you would like more details about the role of general-purpose operating systems such as Microsoft Windows XP Embedded and Linux in the IBM Retail Store Solutions portfolio, or if you need help selecting the right operating system platform for a specific retail operation, please contact: Tamara Garneau at 1 919 301-5392 (tie line 352) or tgarneau@us.ibm.com.



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¹ Source: "Total Cost of Ownership of Linux in the Enterprise," published July 2002 by the Robert Frances Group.