



# IBM 64-bit SDK for z/OS , Java Technology Edition Version 7 lets application developers use Java on IBM z/OS

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## At a glance

IBM® 64-bit SDK for z/OS®, Java™ Technology Edition V7:

- Delivers a comprehensive Java SDK at the SE 7 level for the z/OS platform
- Supports testing and deployment of Java applications in a 64-bit environment
- Includes the enhancements to z/OS Java unique security and JZOS functionality introduced in the 64-bit SDK for z/OS, Java Technology Edition V6.0.1

## Overview

Java is a very popular, general-purpose, highly portable, object-oriented language widely used for application software and web-based applications. It is designed to have as few hardware and platform dependencies as possible, and is an ideal programming language useful in developing new and extending traditional web-based applications, and/or porting other applications to your System z® platform. The 64-bit SDK for z/OS, Java Technology Edition is also useful in helping developers who want to take advantage of the Java application programming interfaces (APIs) for z/OS, write or run Java applications across multiple platforms, or use Java to access System z data.

The 64-bit SDK for z/OS, Java Technology Edition Version 7 is the latest version of this software development kit (SDK). It is designed to be compliant with the Java Standard Edition 7 (Java SE 7) APIs. With 64-bit SDK for z/OS, Java Technology Edition V7 you may:

- Test and deploy Java applications in a 64-bit environment
- Use Java SE 7 APIs
- Continue the "write once, run anywhere" Java paradigm
- Leverage IBM System z Application Assist Processors (zAAPs) or IBM System z Integrated Information Processors (zIIPs), with the zAAP on zIIP capability introduced with z/OS V1.11, to run eligible Java work
- Leverage traditional System z benefits: scalability, reliability, availability, and serviceability
- Use valuable z/OS security and JZOS functionality
- Enable your Java applications to exploit added z196 instructions

The program will be available from the IBM System z Java website and on tape from IBM Software Delivery and Fulfillment (SDF). It is a no-charge product.

For additional information about System z Java products, visit

<http://www.ibm.com/systems/z/os/zos/tools/java/>

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## Key prerequisites

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### Hardware

This product currently runs on the following IBM System z servers:

- z196
- z114
- z10™ EC
- z10 BC
- z9® EC (see Note)
- z9 BC (see Note)
- z990 (see Note)
- z890 (see Note)
- z900 (see Note)
- z800 (see Note)

Note: These products are withdrawn from marketing.

### Software

This product requires z/OS V1.10 (5694-A01) or later.

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## Planned availability date

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- October 4, 2011, via the IBM System z Java website  
<http://www.ibm.com/systems/z/os/zos/tools/java/>
- October 28, 2011, via SDF

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## Description

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64-bit SDK for z/OS, Java Technology Edition V7 is a Java SDK that contains the IBM J9 virtual machine, V2.6. The program is a key building block for developing on-demand applications. 64-bit SDK for z/OS, Java Technology Edition V7 is designed to be compliant with the Java SE 7 application programming interfaces (APIs) and is designed to provide the stability, service, scalability, and integration you expect from a System z program.

64-bit SDK for z/OS, Java Technology Edition V7 is designed to provide:

- Support for Java application programming in a 64-bit application environment
- Java APIs at the SE 7 level
- Continuation of the "write once, run anywhere" Java paradigm
- JZOS support and enhancements
- Exploitation of z196 instructions
- z/OS Java unique security functions
- XML support

- System Authorization Facility (SAF) and cryptography support
- Use of your System z Application Assist Processors (zAAPs) available on System z servers to run eligible Java work
- Use of the zAAP on zIIP capability, introduced with z/OS V1.11, to run eligible Java work
- Additional reliability, availability, and serviceability (RAS) enhancements

## Highlights

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This product:

- Contains the functionality and enhancements common to the IBM Java SE 7 SDKs. For further information, refer to <http://publib.boulder.ibm.com/infocenter/javasdk/v7r0/index.jsp>
- Contains the JZOS and z/OS unique security enhancements of previous z/OS Java SDK products.

## RAS

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64-bit SDK for z/OS, Java Technology Edition V7 includes similar dump capability, tracing, and problem determination as in 64-bit SDK for z/OS, Java Technology Edition Version 6.0.1.

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## Product positioning

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Java can be used for developing traditional System z commercial applications and also Internet and intranet applications that use standard interfaces.

64-bit SDK for z/OS, Java Technology Edition V7 may benefit application developers who want to take advantage of the Java APIs for z/OS, write or run applications across multiple platforms, or use Java to access System z data.

System z administrators can provide the SDK for their application developers and users. Building on the existing z/OS Java product, it is intended that companies may continue their deployment of Java while leveraging the benefits of System z quality, scalability, and service, including exploitation of z196 instructions.

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## Statement of direction

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IBM 31-bit SDK for z/OS, Java Technology Edition V7.0 and IBM 64-bit SDK for z/OS, Java Technology Edition V7.0 are planned to be the last releases to support the JRIO component. JRIO was deprecated in the IBM SDK for z/OS, Java Technology Edition, V6.0.1 products. Customers and ISVs are encouraged to use the record I/O facilities in the JZOS component instead of the JRIO facilities. For more information about JZOS, see

JZOS Java Launcher and Toolkit Overview

<http://www.ibm.com/systems/z/os/zos/tools/java/products/jzos/overview.html>

For information about migration from JRIO to JZOS and sample code, see

IBM Java Record I/O (JRIO) to IBM JZOS Batch Toolkit Migration and Sample Code

[http://www.ibm.com/systems/z/os/zos/tools/java/products/jzos/sdk601\\_jrio2jzos\\_mig.html](http://www.ibm.com/systems/z/os/zos/tools/java/products/jzos/sdk601_jrio2jzos_mig.html)

While the deprecation will only be marked in the z/OS Java SE SDK 6.0.1 and z/OS SDK SE 7 releases, customers are encouraged to use JZOS (instead of JRIO) in the other existing z/OS Java SE products. For a list of products, see

<http://www-03.ibm.com/systems/z/os/zos/tools/java/products/allproducts.html>

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

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## Reference information

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For the most current information on IBM 64-bit SDK for z/OS, Java Technology Edition V7, visit the System z Java website

<http://www.ibm.com/systems/z/os/zos/tools/java/>

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## Program number

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Program number	VRM	Program name
5655-w44	7.0.0	IBM 64-bit SDK for z/OS, Java Technology Edition Version 7
5655-I48	1.1.0	IBM SDK for z/OS Software Subscription and Support

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## Offering Information

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Product information is available via the Offering Information website

<http://www.ibm.com/common/ssi>

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## Publications

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The *Program Directory for IBM 64-bit SDK for z/OS, Java Technology Edition V7* (GI11-9829-00) is orderable from the IBM Publications Center at

<http://publibz.boulder.ibm.com/epubs/pdf/ajvb1110.pdf>

In addition to the product media, each order will be supplied with one copy of *IBM 64-bit SDK for z/OS, Java Technology Edition V7 License Information* (GA76-0439-00).

The License Information publication is also orderable from the IBM Publications Center

<http://www.ibm.com/shop/publications/order>

For additional documentation, visit the Java System z website

<http://www.ibm.com/systems/z/os/zos/tools/java/>

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## Technical information

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### Specified operating environment

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#### Hardware requirements

64-bit SDK for z/OS, Java Technology Edition V7 runs on the following IBM System z servers:

- z196
- z114
- z10 EC
- z10 BC
- z9 EC (see Note)
- z9 BC (see Note)
- z990 (see Note)
- z890 (see Note)
- z900 (see Note)
- z800 (see Note)

**Note:** These products are withdrawn from marketing.

### **Software requirements**

z/OS V1.10 (5694-A01) or later is required.

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a README file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

### **Compatibility**

IBM 64-bit SDK for z/OS, Java Technology Edition V7 (5655-W44) has similar functions to IBM 64-bit SDK for z/OS, Java Technology Edition Version 6 Release 0 Modification 1 (5655-R32) with the following differences:

- The X11 libraries are now dynamically linked, instead of being statically linked. z/OS V1.10 Communications Server and later releases of z/OS include the X11 libraries. Java applications do not have to be changed. Dynamic linking will make the z/OS Java SE 7 product consistent with the linking already used on other IBM platform SDKs.
- For best performance for most clients, the default garbage collection policy remains GENCON, the new default in IBM 64-bit SDK for z/OS, Java Technology Edition Version 6 Release 0 Modification 1. However, customers migrating directly from IBM SDK 64-bit SDK for z/OS, Java Technology Edition V6.0.0 or earlier will be moving to a product with a different garbage collection policy default (GENCON) and may still require additional garbage collection tuning for optimal performance. For additional information, see the *IBM User Guide for Java V7 on z/OS* that will be available at general availability at

<http://publib.boulder.ibm.com/infocenter/javasdk/v7r0/index.jsp>

The following are independently orderable and serviced products that can coexist on the same z/OS system:

- 64-bit SDK for z/OS, Java Technology Edition Version 6 Release 0 Modification 1 (5655-R32).
- 64-bit SDK for z/OS, Java Technology Edition Version 6 Release 0 Modification 0 (5655-R32).
- 31-bit SDK for z/OS, Java Technology Edition Version 6 Release 0 Modification 1 (5655-R31).
- 31-bit SDK for z/OS, Java Technology Edition Version 6 Release 0 Modification 0 (5655-R31).
- 64-bit SDK for z/OS, Java 2 Technology Edition V5 (5655-N99).
- 31-bit SDK for z/OS, Java 2 Technology Edition V5 (5655-N98).

- SDK for z/OS, Java 2 Technology Edition V1.4 (5655-I56), withdrawn from marketing effective September 29, 2008. Note: Service is planned to be discontinued September 30, 2011.

Most Java applications executed on IBM 64-bit SDK for z/OS, Java Technology Edition V6 (5655-N99) are expected to run unchanged on 64-bit SDK for z/OS, Java Technology Edition V7, provided that they do not use deprecated Java SE 6 APIs. Additionally, in some cases, because of a small number of incompatibilities introduced between Java SE 6 and Java SE 7, some applications may have to change.

### ***Limitations***

Input Method Framework (IMF) is not supported.

### ***Performance considerations***

Optimal performance is expected to be obtained with the most recent levels of the hardware and operating system.

For additional performance-related information, visit

<http://www.ibm.com/systems/z/os/zos/tools/java/>

### **Planning information**

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#### ***Packaging***

You can download 64-bit SDK for z/OS, Java Technology Edition V7 from the System z Java website or order the program package.

64-bit SDK for z/OS, Java Technology Edition V7 is shipped with the following:

- Basic machine-readable material
- License Information

For additional documentation, visit

<http://www.ibm.com/systems/z/os/zos/tools/java/>

This program, when downloaded from a website, contains the applicable IBM license agreement and License Information, if appropriate, which will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

### **Security, auditability, and control**

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64-bit SDK for z/OS, Java Technology Edition V7 uses the security and auditability features of the host z/OS operating system. For more information, refer to Software Announcement [A08-1006](#), dated August 05, 2008. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## **Software Services**

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IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based Software Services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

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## Ordering information

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### **Charge metric**

Program name	Part number or PID number	Charge metric
IBM 64-bit SDK for z/OS, Java Technology Edition V7.0.0	5655-W44	No-charge product
IBM SDK for z/OS Software Subscription and Support	5655-I48	No-charge product

For information on downloading the code from the System z Java website, visit

<http://www.ibm.com/systems/z/os/zos/tools/java/>

### **Processor Value Unit (PVU)**

PVU is a unit of measure by which the program can be licensed. The number of PVU entitlements required is based on the processor technology (defined within the PVU table by processor value, brand, type, and model number at the website below) and the number of processors made available to the program. IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip. A dual-core processor chip, for example, has two processor cores. The PVU table can be found at

[http://www.ibm.com/software/lotus/passportadvantage/pvu\\_licensing\\_for\\_customers.html](http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html)

Licensee can deploy the program using either full capacity licensing or virtualization capacity (sub-capacity) licensing according to the Passport Advantage® Sub-Capacity Licensing Terms (refer to the web page below). If using Full Capacity licensing, Licensee must obtain PVU entitlements sufficient to cover all activated processor cores\* in the physical hardware environment made available to or managed by the Program, except for those servers from which the Program has been permanently removed. If using Virtualization Capacity licensing, Licensee must obtain entitlements sufficient to cover all activated processor cores made available to or managed by the Program, as defined according to the Virtualization Capacity License Counting Rules at

[http://www.ibm.com/software/lotus/passportadvantage/Counting\\_Software\\_licenses\\_using\\_specific\\_virtualization\\_technologies.html](http://www.ibm.com/software/lotus/passportadvantage/Counting_Software_licenses_using_specific_virtualization_technologies.html)

\* An activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.

#### Notes:

- Some programs may require licenses for the program **and** what is being managed. In that case, the following applies. In addition to the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- Some programs may be licensed on a managed basis only. In that case, the following applies. Instead of the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.

- A few programs on an exception basis may be licensed on a referenced basis. In that case, the following applies. Rather than obtaining entitlements for the activated processor cores available to the program, licensee must obtain PVU entitlements for this program sufficient to cover the environment made available to the referenced program as if the program itself were executing everywhere the referenced program was executing, independent of the basis on which the referenced program is licensed.

### Ordering z/OS through the Internet

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the US and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries website at

<http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

This is a **no-charge** product.

**Basic machine-readable material:** To order, specify program number 5655-W44, IBM 64-bit SDK for z/OS, Java Technology Edition Version 7.

**Subscription and Support:** To order, specify program number 5655-I48.

### Basic license

To order, specify the program product number and the appropriate license or charge option. Also, specify the desired distribution medium. To suppress shipment of media, select the license-only option in CFSW.

Program name: IBM 64-bit SDK for z/OS, Java Technology Edition Version 7

Program PID: 5655-W44

Entitlement identifier	Description	License option/ Pricing metric
S01640D	IBM 64-bit SDK for z/OS v7.0.0	Unlimited Installs Basic No Charge

Orderable supply ID	Language	Distribution medium
S016RFD	English	3590 Tape Cartridge

Subscription and Support PID: 5655-I48

Entitlement identifier	Description	License option/ Pricing metric
S00X7JC	IBM SDK for z/OS Software Subscription and Support	Unlimited Installs SW Subscription and Support

Orderable supply ID	Language	Distribution medium
S00X7H8	English	Paper

### Customized Offerings

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Product deliverables are shipped only via CBPDO, ServerPac, and SystemPac®.



CBPDO and ServerPac are offered for Internet delivery in countries where ShopzSeries product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options for CBPDO, ServerPac, and SystemPac, include:

- 3590
- 3592

Most products can be ordered in ServerPac and SystemPac the month following their availability on CBPDO. z/OS can be ordered via all three offerings at general availability. Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability.
- SystemPac shipments will begin four weeks after general availability due to additional customization, and data input verification.

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## **Terms and conditions**

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The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage Agreement, and IBM Agreement for Acquisition of Software Maintenance.

### ***Licensing***

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use.

### ***Agreement for Acquisition of Software Maintenance***

The following agreement applies for Software Subscription and Support (Software Maintenance) and does not require customer signatures:

- IBM Agreement for Acquisition of Software Maintenance (Z125-6011)

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

IBM System z Operational Support Services - SupportLine is an option if you desire added services.

### ***License Information form number***

The program's License Information will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

**Limited warranty applies**

Yes

**Limited warranty**

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the *IBM Software Support Handbook* found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

**Program support**

Enhanced support, called Subscription and Support, includes telephone assistance, as well as access to updates, releases, and versions of the program as long as support is in effect. You will be notified of discontinuance of support with 12 months' notice.

**Money-back guarantee**

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

**Volume orders (IVO)**

No

**Passport Advantage applies**

No

**Usage restriction**

Yes

For additional information, refer to the License Information document that is available on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

**Software Subscription and Support applies**

No. For operating system software, the revised IBM Operational Support Services - SupportLine offering will provide support for those operating systems and associated products that are not available with the Software Subscription and Support (Software Maintenance) offering.

This will ensure total support coverage for your enterprise needs, including IBM and selected non-IBM products. For complete lists of products supported under both the current and revised offering, visit

<http://www.ibm.com/services/sl/products>

### **IBM Operational Support Services - SupportLine**

Yes

### **System i Software Maintenance applies**

No

### **Variable charges apply**

No

### **Educational allowance available**

Yes. A 15% education allowance applies to qualified education institution customers.

**Academic use allowance:** Yes

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## **IBM Electronic Services**

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IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

<http://www.ibm.com/support/electronic>

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## **Prices**

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Prices are subject to change without notice.

GST, QST, and sales taxes, where applicable, are extra.

For additional information and current prices, contact your local IBM representative.

## IBM Global Financing

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<http://www.ibm.com/financing>

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Internet: [callserv@ca.ibm.com](mailto:callserv@ca.ibm.com)  
Mail: IBM Teleweb Customer Support  
ibm.com® Sales Execution Center, Americas North  
3500 Steeles Ave. East, Tower 3/4  
Markham, Ontario  
Canada  
L3R 2Z1

Reference: LE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

**Note:** Shipments will begin after the planned availability date.

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