



# IBM z/OS V1.6: Integrating new applications and Preview: z/OS V1.7

## Overview

z/OS® is designed to deliver the highest qualities of service for enterprise transactions and data, and to extend these qualities to new applications using the latest software technologies. Enhancements in z/OS V1.6 can help further simplify your environment by integrating Java™ Web applications with mission-critical data, while delivering high performance, reliability, availability, and security.

In addition to z/OS V1.6 improvements previously announced in Software Announcement 204-017, dated February 10, 2004, z/OS V1.6 offers:

- Support for IBM @server zSeries® Application Assist Processor (zAAP)
- Improved LDAP server availability and performance
- Communications Server enhancements, including IPv6 support for Sysplex enhancements and X Window System and OSF/Motif support upgrades

**What's next:** Planned improvements for z/OS V1.7 include enhanced zFS functionality, autonomic computing enhancements, and support for the IBM Virtualization Engine™.

## Key prerequisites

z/OS V1.6 and its features and Web deliverables described in this announcement run on the following IBM servers, or equivalents:

- IBM @server zSeries z900 or z990
- zSeries z800 or z890

z/OS V1.6 must execute in a z/Architecture™ (64-bit) mode.

For a complete description of z/OS V1.6 software prerequisites, refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504) at

[http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find\\_books.html](http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find_books.html)

You can find the requirements for features and Web deliverables for other z/OS releases described in this announcement in the appropriate level of *z/OS and z/OS.e Planning for Installation*, and the information provided for those features and Web deliverables.

## Planned availability date

September 24, 2004

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### For ordering, contact:

Your IBM representative, an IBM Business Partner, or the Americas Call Centers at

**800-IBM-CALL**

Reference: YE001

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## Description

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z/OS V1.6 offers a number of improvements and enhancements that build upon its focus to deliver high qualities of service for enterprise transactions and data, and to extend these qualities to new applications using current software technologies. These improvements include enhancements in application integration, security, availability, scalability, optimization, and networking. At the same time, z/OS continues to improve ease of use and help reduce the total cost of computing.

Some of the functions described in this announcement were previously announced in Software Announcement 204-017, dated February 10, 2004.

Following is an overview of z/OS V1.6. For more detailed information, refer to *z/OS V1R6.0 Introduction and Release Guide* (GA22-7502), available on the Internet at

[http://publibz.boulder.ibm.com/cgi-bin/bookmgr\\_OS390/BOOKS/E0Z2A116](http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2A116)

### Application integration

Deploying applications quickly and easily is important. Therefore, z/OS continues to focus on application integration and deployment. In z/OS V1.6, improvements in this area include:

- **The new IBM zSeries Application Assist Processor (zAAP)**, planned to be available on the IBM zSeries 990 (z990) and zSeries 890 (z890) servers, is an attractively priced specialized processing unit that provides an economical Java execution environment for customers who desire the traditional qualities of service and the integration advantages of the zSeries platform.

When configured with general-purpose processors within logical partitions running z/OS, zAAPs may help increase general-purpose processor productivity and may contribute to lowering the overall cost of computing for z/OS Java technology-based applications. zAAPs are designed to operate asynchronously with the general-purpose processors to execute Java programming under control of the IBM Java Virtual Machine (JVM). This can help reduce the demands and capacity requirements on general-purpose processors which may then be available for reallocation to other zSeries workloads.

The IBM JVM processing cycles can be executed on the configured zAAPs with no anticipated modifications to the Java applications. Execution of the JVM processing cycles on a zAAP is a function of the Software Developer's Kit (SDK) 1.4.0 (5655-I56) for zSeries, z/OS V1.6, and the Processor Resource/Systems Manager™ (PR/SM™). Refer to Software Announcement 204-178, dated August 10, 2004 (IBM 64-bit SDK for z/OS, Java 2 Technology Edition, V1.4).

- **z/OS UNIX® Systems Services** now provides condition variables in shared memory and superkill support. It also offers enhancements to the automount daemon, Euro symbol support, and Unicode.
- **OpenSSH** is included in IBM Ported Tools for z/OS (5655-M23), as announced in Software Announcement 204-109, dated May 25, 2004. OpenSSH is a widely accepted tool for secure login and file transfer using OpenSSL technology. With OpenSSH, z/OS servers and other servers can communicate in a security-rich environment using ssh.

For more information, visit [http://www.ibm.com/servers/eserver/zseries/zos/unix/port\\_tools.html](http://www.ibm.com/servers/eserver/zseries/zos/unix/port_tools.html)

- **C/C++ enhancements** in z/OS V1.6 include:
  - Improved scalability using the z/OS 64-bit C/C++ environment for developing and deploying applications that need to process large data objects. The C/C++ compiler supports the industry-standard LP64 programming model, to allow exploitation of virtual memory above the 2-GB bar.
  - C/C++ support for developing, porting, generating, and debugging high-performance and complex 64-bit virtual applications.
  - A new keyword to specify the alignment of a variable, to help port applications to z/OS and to aid in improving performance.
  - Two new C/C++ compiler options, ARCH(6) and TUNE(6), which allow for exploitation of the new z990 and z890 hardware features for potential performance improvements.
  - New C/C++ compiler invocation commands that allow for use of a configuration file for running under z/OS UNIX. These commands provide increased portability and stability in migrating to future releases of the compiler.
  - The C/C++ DEBUG option now supports debugging 64-bit applications, and the debug information can be used by dbx under z/OS UNIX.
- **Note:** The C/C++ ISPF panels and the Dynamic Link Library Rename (DLLRENAME) Utility have been removed from the C/C++ without Debug Tool feature of z/OS V1.6.
- **Lightweight Directory Access Protocol (LDAP)** — z/OS V1.6 enhancements for application integration within LDAP will also be made available within the LDAP Enhancements for z/OS V1R4/R5 and z/OS.e V1R4/R5 Web deliverable.

New enhancements include:

- Peer-to-peer replication provides fail-over support for server availability. If a primary master server fails, there is now a backup master to which LDAP operations can be directed.
- Event notification provides an event notification/persistent search mechanism for applications, directories, and meta directories, which enables them to be notified when a directory change has occurred.
- Large group support helps you improve LDAP server performance when maintaining large access groups containing many members. This is likely to help you if you are using IBM Tivoli® Access Manager for e-business with a z/OS LDAP registry.

Previously announced enhancements for LDAP, found in Software Announcement 204-017, dated February 10, 2004, that will be included in both z/OS V1.6 and within the LDAP Enhancements for z/OS V1R4/R5 and z/OS.e V1R4/R5 Web deliverable are:

- LDAP Client Support of 64-bit Addressing
- Change Log support
- Alias Support
- DB2® Restart/Recovery
- Dynamic Nested Groups
- Enhanced Schema Support for merge capabilities

- LDAP Server support of IPv6
- Search Results Cache

## Security

- **IBM XML Toolkit for z/OS V1.7 (5655-J51)** provides the latest eXtensible Markup Language (XML) parser and eXtensible Stylesheet Language Transformations (XSLT) processor support for C++, as announced in Software Announcement 204-181, dated August 10, 2004. IBM XML Toolkit for z/OS V1.7 is designed to help you create, integrate, and maintain business-to-business (B2B) solutions.

For more information, visit

<http://www.ibm.com/servers/eserver/zseries/software/xml>

- The **High-Level Assembler** element of z/OS V1.6 contains all the functions of High-Level Assembler V1.5 (5696-234), announced in Software Announcement 204-122, dated June 8, 2004. High-Level Assembler is a powerful and flexible tool for application development. High-Level Assembler V1.5 includes support for new z/Architecture instructions, better control of conditional assemblies, Dynamic Link Library (DLL) support, z/OS UNIX enhancements, and improved ASCII support. High-Level Assembler and its Toolkit feature can also help improve programmer productivity and application reliability and maintainability, through better usability and diagnostics. For more information, refer to the announcement.
- **z/OS Communications Server** enhancements include:
  - **X Window System and OSF/Motif support upgrade:** X Window System Version 11 is upgraded to Release 6.6, and OSF/Motif libraries are upgraded to OSF/Motif 2.1.30. Along with many new features, a key element of this upgrade is that applications can take advantage of 64-bit addressing mode for these APIs.
  - **FTP Client API** support provides a callable programming interface you can use to invoke the z/OS FTP client from Assembler, COBOL, and PL/I applications.
  - **FTP Enhanced Multibyte Character Set (MBCS)** support improves character set conversion support for the double-byte character set (DBCS) code pages.
- **Interactive Structured Programming Facility (ISPF)** includes several panel language enhancements and other software development tools for more productive and flexible program development:
  - ISPF panels now support inline REXX commands. This lets you use the power of the REXX language to perform tasks like processing variables and screen input, and performing arithmetic functions and input field validation. You can also store complex and commonly used REXX functions in execs, and call them from any number of panels. This support can help you reduce ISPF application development cost and improve productivity.
  - Do and If-Then-Else support and new table handling commands allow file-tailoring skeletons to be coded more easily.
  - New display features in the ISPF editor make it easier to view and change data more effectively, with less scrolling.

z/OS V1.6 can provide greater security for enterprise and Web-based applications with Multilevel Security auditing and enhancements to RACF®, Network Authentication Server, Enterprise Identity Mapping (EIM), Secure Sockets Layer (SSL), and Integrated Cryptographic Service Facility (ICSF). In addition, LDAP supports 64-bit addressing and IPv6 communication.

- **Security Server (RACF) improvements:**

- The RACF Class Descriptor Table (CDT) is now designed to be updated without an IPL, and these updates no longer require corresponding RACF Router Table changes. This can allow system administrators to add or remove installation-defined classes more quickly. Also, this can help application developers who want to exploit RACF security services for new applications using new RACF classes to deploy them more quickly.
- Multilevel Security extends RACF auditing capability to allow administrative auditing controls to be based on user-friendly security labels (SECLABELs). This adds to the Multilevel Security functions provided in z/OS V1.5. For more information about Multilevel Security, refer to the overview in Software Announcement 202-190, dated August 13, 2002.
- RACF will use LDAP change log support to create event notifications when a user profile is changed in RACF. A change log entry can be created by RACF regardless of whether LDAP or RACF commands are used to modify a RACF user.
- RACF now supports recoverable user passwords. Passwords can be stored in digitally encrypted PKCS#7 formatted envelopes that can be recovered by authorized applications. Users, and groups of users, can be selectively enabled for this new function. RACF can create an LDAP change log entry that will act as a notification of the password change, and LDAP clients can request the password envelope from RACF using LDAP interfaces.

IBM Tivoli Directory Integrator, 5.1.2 (5724-D99), will provide exploitation of this z/OS function to enable enterprise-wide password synchronization in which z/OS is an equal participant, without requiring z/OS-specific agents or exits.

- **LDAP improvements:**

- The LDAP Client APIs now support 64-bit addressing. LDAP C/C++ applications running on zOS V1.6 can also exploit 64-addressing.
- The LDAP Server, LDAP Operational Utilities, and Client APIs now support the IPv6 standard for TCP/IP communication.
- The LDAP Change Log provides a log of changes made to entries in the directory, which can include RACF password and user profile changes. The log of changes can be searched by a client. It also enables metadirectory products like IBM Tivoli Directory Integrator that work from a change log to work with the z/OS LDAP server.
- Alias Support provides a way for one directory entry to point to another. An alias entry can provide a convenient, easy-to-use name for an entry or subtree so that users do not have to use a potentially more complex real name. It can also help avoid the need to duplicate an entry in multiple subtrees.

- LDAP RAS characteristics are improved by allowing the LDAP server to remain active when DB2 is restarted.
  - Dynamic and Nested Group support allows a group administrator to define group membership in terms of attributes, and lets the directory determine who is or is not a member. It also allows administrators to construct and display group hierarchies that describe group memberships. This can make it easier and faster to administer groups.
  - Search results are now cached, which can enhance LDAP server performance. Cache tuning and monitoring capabilities are also provided.
  - Enhanced Schema Support helps reduce the complexity inherent in schema updates and enables schema modification by replacement of individual attribute values. This can effectively merge new attribute values into existing schema.
- **Network Authentication Server and Enterprise Identity Mapping (EIM):**
    - Network Authentication Server interfaces are enhanced to provide support for 64-bit callers. Other APIs, as well as tracing enhancements, are included.
    - EIM can now be “policy driven” to help simplify administration for large numbers of users who require the same target userid. Administrators can define policies that can act as default mappings, which can help to streamline administration of users.
  - **Secure Sockets Layer (SSL) enhancements:**
    - System SSL is enhanced to support industry standards, certificate administration, and 64-bit addressing to enable communication in a security-rich environment through the SSL/Transport Layer Security (TLS) protocol across distributed environments. System SSL is planned to be enhanced to support the use of Diffie-Hellman key exchanges during the SSL/TLS handshake. To ease the administrative task of sharing certificates, the gskkyman command can now allow complete certificate chains (not just single certificates) to be exported and imported using PKCS#7 format files.
  - **z/OS Communications Server IP** provides security enhancements, including:
    - **Broadcast Control:** Support is added to let you use SAF security controls to specify whether an application can set the SO\_BROADCAST socket option needed to send broadcast datagrams.
    - **TCP/IP profile checks:** Enhanced checking during profile processing to check the consistency of configuration information related to multilevel security.
    - Support for running multiple copies of the sendmail daemon, each with a different security label (SECLABEL).
    - Support for binding the Trivial File Transfer Protocol daemon (TFTPD) to a specific IP address. This lets you run multiple copies of TFTPD with different security labels.
  - **DFSMS** now supports multilevel security labels (SECLABELs) in automatic class selection (ACS) routines. You can code ACS logic to direct data set allocations for different security classifications to different sets of volumes. If you currently use

allocation exits to provide this function, you can replace them with this new IBM-supported function.

- **Integrated Cryptographic Service Facility (ICSF)** provides application programs with callable service interfaces to support the encryption and decryption of data using the cryptographic hardware in the zSeries servers. ICSF adds support for callers running in 64-bit addressing mode. ICSF support for AMODE(64) callers is planned to be available in the ICSF 64-bit Virtual Support for z/OS V1R6 and z/OS.e V1R6 Web deliverable in December 2004. This support is planned to be included in z/OS V1.7. A limited set of callable services for AMODE(64) callers will be supported on z990, z900, z800, and z890 processors. They are intended to support System SSL, WebSphere®, and Java.

### **Availability**

Reliability is a zSeries hallmark. Application and network availability are crucial to the success of your business. Enhancements in z/OS V1.6 that can help you improve availability include:

- **The RACF Class Descriptor Table (CDT)** is now designed to be updated dynamically without an IPL. For more information, refer to **Security** in the **Description** section.
- **Resource Recovery Services (RRS) enhancements:** Resource managers can now be restarted on any z/OS V1.6 system in the same RRS logging group within a sysplex while RRS continues to run on the system where they were originally started. This is designed to allow you to move resource managers between systems without impacting other applications that might be using RRS.
- **Improved zFS address space availability:** Diagnostic data collection will proceed in parallel with other processing, and the address space will remain available to process mounted zSeries File Systems (zFS). This can help improve availability for subsystems and applications using zFS. Also, starting in z/OS V1.6, zFS parameters can be specified in multiple parmlib members.
- **Support for renaming LPARs designed to be provided without an outage**, which can help you eliminate planned outages for power-on resets.
- **Improved diagnostic data collection for FICON™**, which makes it easier to identify the root causes of FICON errors. This can help lower your service costs and improve availability.
- **A new restartable PDSE address space**, which helps you avoid unscheduled IPLs to recover from failures in PDSE processing.
- **Improved latch contention detection in the z/OS UNIX Systems Services environment.**
- **A number of system limits have been raised:**
  - The maximum number of CPs per LPAR is increased from 16 to 24.
  - The size of SMF buffers is increased from 256 MB to 1 GB.
  - The maximum number of XCF members in a group is increased from 1023 to 2047.
  - The maximum number of file descriptors per UNIX process is increased from 64 K to 128 K.

- The number of Linkage Index (LX) entries is increased from 2 K to 32 K.
- **Virtual storage constraint relief for programs that use Execute Channel Program (EXCP).**
- **z/OS Communications Server** availability improvements include:
  - **Separate address space for TN3270 servers:** The TN3270 server can now be run in its own address space, which can allow you to control TN3270 functions separately from the TCP/IP stack. The TN3270 server's performance goals can be set separately; it can be stopped and restarted without necessarily affecting other networking functions or availability; and problem diagnosis is simplified.
  - **Alternate route selection for SNA and Enterprise Extender (EE):** VTAM® allows alternate route selection for sessions using Enterprise Extender (EE) connection networks when connectivity fails due to temporary conditions in the underlying IP network. This can help improve availability for sessions using EE connection networks.
  - **Dynamic major node definition changes:** New configuration support for EE XCA major nodes allows activation and inactivation at the GROUP level. In addition, the EE XCA major node now supports configuration updates when the major node is active. This provides flexibility and can help improve availability by allowing updates to occur without necessarily affecting existing sessions.
  - **VTAM persistent sessions forced takeover:** VTAM applications that support persistent sessions can initiate an application takeover without waiting for a planned takeover exchange between the participating applications. This can help improve availability when SNA application recovery is needed.
  - **SMTP server resilience:** When the new optional configuration statement DELETEBADSPoolFILE is specified in the SMTPPROC configuration data set, the SMTP server is designed to delete bad spool files that would otherwise cause an error when accessed by SMTP, and continue to run. The default behavior if this statement is not coded is that SMTP will generate an error message and terminate.
- **TCP/IP Sysplex autonomic enhancements:**
  - TCP/IP protocol stacks in a sysplex are enhanced with autonomic functions that can help improve availability for server applications that use Dynamic Virtual IP Address (DVIPA) technologies in a z/OS sysplex environment:
    - **TCP/IP automatic takeover:** TCP/IP protocol stacks configured for sysplex functions using Dynamic Virtual IP Addresses (DVIPAs) will now perform proactive self health monitoring designed to detect severe shortages of key resources and failure of key components required for proper operation of DVIPA functions in a sysplex environment. If a TCP/IP stack detects a key component failure, it is designed to remove itself from the sysplex, allowing a healthy backup TCP/IP stack to take over. This can help improve availability of key server applications.

- **Dynamic coordination of DVIPA ownership transfers:** When a TCP/IP protocol stack is started, it performs "take back" processing for any DVIPAs for which it is designated as the primary owner. Now, the TCP/IP stack will delay this "take back" processing until the OMROUTE routing daemon has been activated. This delay can allow the routing updates that reflect the movement of the DVIPA to be immediately advertised to the network when the transfer of the DVIPA is initiated. As a result, the impact that a DVIPA movement might have on network clients and the need for complicated automation scripts can be significantly reduced.

### **Scalability**

z/OS is a highly scalable operating system that can support the integration of new applications.

**Scale up and scale out:** You can scale up, in a single logical partition, and scale out, in a parallel sysplex, for higher availability. With z/OS V1.6, up to 24 processors are supported in a single logical partition on the z990 server. In 2005, IBM plans to provide support for z/OS V1.6 to run up to 32 processors in a single logical partition on a z990 server.

**Note:** When you are using the new IBM eServer® zSeries Application Assist Processor (zAAP), which provides a specialized z/OS Java execution environment, the total number of processors defined in a z/OS logical partition is the sum of general purpose processors (CPs) and zSeries Application Assist Processors (zAAPs).

**z/OS 64-bit exploitation:** z/OS V1.6 is designed to deliver the capability to exploit 64-bit virtual in developing and deploying applications that require significantly more data addressability. This is provided through enhancements to UNIX Systems Services, including the dbx debugger, 64-bit Language Environment® run-time support, the existing C/C++ compiler 64-bit support, and Program Management Binder 64-bit support. This support completes the major steps of the z/OS 64-bit virtual roadmap.

Other scalability enhancements:

- **SMS support for Parallel Access Volumes (PAVs)** can allow you to direct allocations for data sets with high performance requirements to PAVs automatically. This can help you reduce I/O bandwidth bottlenecks and better use your direct access storage. It is designed to also provide significant performance improvements, especially for DB2 data.
- **DFSMSHsm™ secondary space management** has been changed to use multitasking. This can help you to reduce the time needed for secondary space management functions of migration cleanup and migration from ML1 DASD to ML2 tape.
- **IBM 64-bit SDK for z/OS**, Java 2 Technology Edition, V1.4 (5655-I56) provides a full-function Software Development Kit (SDK) at the Java 2 technology level, compliant with the Sun SDK 1.4 APIs. With 64-bit SDK for z/OS, Java 2 Technology Edition, V1.4, you can run Java applications that were previously storage constrained.

For further information, visit

<http://www.ibm.com/servers/eserver/zseries/software/java/>

## Optimization

Self-optimization is important because it can help free you from having to manage system resources while making effective use of them. z/OS V1.6 offers these new self-optimizing capabilities:

- **Workload Manager (WLM)** has been enhanced to provide 64-bit virtual storage support for WebSphere. This enables some services to run in 64-bit mode. No application changes are expected to be needed in order to exploit this function.
- **DFSMSrmm™** now supports client systems and has added an object-oriented programming interface. These enhancements can allow you to use DFSMSrmm to manage all the tapes in your z/OS enterprise environment to help you to make better use of tape resources.

## Networking

z/OS V1.6 offers networking improvements in several areas:

- **Job-specific source IP addressing:** New z/OS TCP/IP function provides the ability for applications connecting outbound to use a specific source IP address. This can help provide flexibility and ease administrative tasks for TCP/IP connections originating from a single z/OS system or a z/OS sysplex environment. For example, firewall administration can now be simplified, as TCP/IP connections originating from applications running in a z/OS environment can easily be identified by a predictable source address.
- **Enhanced IPv6 support:** z/OS Communications Server includes IPv6 support for key functions, extending them into the next generation of the Internet:
  - Dynamic VIPA and Sysplex Distributor
  - Sysplex Sockets
  - OMPROUTE support for OSPFv3 described in RFC2740
  - The TCP/IP SNMP Subagent:
    - Version-neutral support in the TCP/IP Enterprise Specific MIB
    - Updates to standard MIB data from the following IETF Internet drafts: IP-MIB, IP-FORWARD-MIB, and the TCP-MIB
- **Enterprise Extender (EE) and Systems Network Architecture (SNA)** offer new function and serviceability improvements:
  - You can now activate or deactivate an entire EE definition GROUP with a single VARY command. This can help you simplify automation routines and operations.
  - A new display command for EE provides general and connection-specific performance information.
  - As an aid in EE problem diagnosis, the TCP/IP packet trace formatter is enhanced to include the formatting of EE packets that flow to and from TCP/IP.
  - A new command terminates hung Advanced Peer-to-Peer Networking® (APPN®) searches to allow new search requests to complete.
  - A new VTAM start option controls the display of additional diagnostic information when an APPN locate search fails.

- New VTAM configuration controls let network administrators control the passing of IP characteristics (via CV64) associated with logical units (LUs) that represent a TN3270 session.
- New configuration options provide the ability to control how cross-subnetwork high performance routing (HPR) Rapid Transport Protocol (RTP) connections are established through APPN border nodes. You can use these controls to force HPR to terminate RTP connections at border nodes to maintain awareness of cross-subnetwork sessions.
- When an HPR pipe stalls because of error conditions, extended recovery attempts will be activated and the operator informed.
- Growth constraints are designed to be removed for HPR pipes with the extension of network element address allocation above the 64K line, up to 33M.
- As an aid in HPR problem diagnosis, a new IPCS VTAMMAP command option is provided.

## Ease of use

z/OS continues to improve ease of use in many areas. z/OS V1.6 provides these usability improvements:

- **Hardware Configuration Manager (HCM)** now provides Chpid Mapping Tool (CMT) support and offers an enhanced configuration diagram. More user fields for HCM objects are supported, and a "Save As" function is added to the switch port list in the Director dialog and to the "List Devices for OS Configuration" dialog. Besides the existing cropping, HCM now provides a second, enhanced diagram cropping function.
- **Dynamic Deletion of Bound Aliases** lets you back out of assigned aliases and dynamically migrate from configurations. Implementing this function can help reduce complexity by providing a migration tool to migrate to sub-channel sets.
- **DFSMSdss™** now supports a REPLACEUNCONDITIONAL keyword for copy and restore operations. Using this new keyword, you can copy, rename, or restore data sets to replace existing data sets. This can help improve system programmer and storage administrator productivity. Support is also provided via PTF for z/OS V1.2, z/OS V1.3, z/OS V1.4, z/OS V1.5, and OS/390® V2.10.
- The **DFSMSrmm** ISPF dialog has been enhanced to support line commands on more search results list panels, use of CLISTs for dialog-initiated searches, and saving and reusing field values. These enhancements can help improve DFSMSrmm's ease of use, tape administrator productivity, and tape resource management.
- New **z/OS UNIX** shell commands are added:
  - The **clear** command allows you to clear the UNIX shell environment screen.
  - The **uptime** command allows you to determine the date and time of the last IPL.

## Total cost of computing

z/OS V1.6 can help to reduce the cost of computing by supporting new technologies that can help reduce your dependence on older hardware.

- **OSA-ICC (OSA3270) support** lets you use Telnet-based consoles to replace expensive locally-attached 3270 control unit emulation hardware. The Telnet-based consoles support early IPL phases to provide the ability to recover from unexpected errors. This can help reduce your cost for small systems, and make it easier for you to migrate to newer processors, particularly when you migrate from a Multiprise® processor with an integrated console.

## Important Web sites

- z/OS Web site  
<http://www.ibm.com/servers/eserver/zseries/zos/>
- General Q & A  
<http://www.ibm.com/servers/eserver/zseries/faq/>
- Previously announced statements of direction  
[http://www.ibm.com/servers/eserver/zseries/zos/zos\\_sods.html](http://www.ibm.com/servers/eserver/zseries/zos/zos_sods.html)
- IBM zSeries Internet Library  
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>
- z/OS V1.6 Introduction and Release Guide  
[http://publibz.boulder.ibm.com/cgi-bin/bookmgr\\_OS390/BOOKS/E0Z2A116](http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2A116)
- Descriptions of courses worldwide  
<http://www.ibm.com/services/learning>
- IBM 64-bit SDK for z/OS, Java 2 Technology Edition, V1.4  
<http://www.ibm.com/servers/eserver/zseries/software/java/>
- IBM Ported Tools for z/OS  
[http://www.ibm.com/servers/eserver/zseries/zos/unix/port\\_tools.html](http://www.ibm.com/servers/eserver/zseries/zos/unix/port_tools.html)
- IBM XML Toolkit for z/OS V1.7  
<http://www.ibm.com/servers/eserver/zseries/software/xml>
- Debug Tool for z/OS  
<http://www.ibm.com/software/awdtools/debugtool/>
- SystemPac  
<http://www.ibm.com/ca/custompac>
- IBM's Official Statement of Direction on SNA support on z/OS Communications Server (2002)  
<http://www.ibm.com/software/network/commserver/os390/>
- IBM Statement of Direction Update on SNA support in 2004  
[http://www.ibm.com/servers/eserver/zseries/networking/sod\\_sna.html](http://www.ibm.com/servers/eserver/zseries/networking/sod_sna.html)

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## Product positioning

In Software Withdrawal Announcement 903-149, dated August 5, 2003, IBM announced end of service for OS/390 V2.10 (5647-A01), the last release of OS/390, will be September 30, 2004. Customers on OS/390 V2.10 should be making plans to complete their migrations to z/OS V1.4 (5694-A01) prior to this date.

IBM announced that end of service for z/OS V1.2 will be October 31, 2004, and that the end of service for z/OS V1.3 will be March 31, 2005, as planned. IBM also announced that the end of service for z/OS V1.4 and z/OS.e V1.4 will be extended to March 31, 2007. This date is the same as the end of service date planned for z/OS V1.5.

z/OS V1.4 and z/OS.e V1.4 can be ordered until September 9, 2004. To allow for adequate order processing time it is recommended that z/OS V1.4 orders be submitted by August 31, 2004. This end of marketing date for z/OS V1.4 is the same as the end of marketing date planned for z/OS V1.5. Customers with OS/390 are encouraged to migrate to z/OS V1.4 as soon as possible so that z/OS V1.4 is operational before the end of service of OS/390 V2.10.

z/OS V1.4 z990 Exploitation Support feature and z/OS V1.4 Consoles Enhancements feature can be ordered until December 2006, three months prior to end of service.

In z/OS V1.6, System SSL Java class support is being removed. Applications that want to use SSL function through Java classes must use Java Secure Socket Extension (JSSE). Information about JSSE can be found at

<http://www.ibm.com/servers/eserver/zseries/software/java/jsse14.html>

**WebSphere Application Server for z/OS and OS/390, 4.0.1 support:** The WebSphere Application Server for z/OS and OS/390, 4.0.1 (5655-F31) will not be supported on z/OS V1.6. In addition, service for WebSphere Application Server for z/OS and OS/390, V4.0.1 will be discontinued on April 30, 2005, as announced in Software Withdrawal Announcement 904-021, dated February 3, 2004. Customers currently running WebSphere Application Server for z/OS and OS/390, V4.0.1 are strongly encouraged to migrate to WebSphere Application Server for z/OS, V5 now in order to avoid the need to simultaneously upgrade the WebSphere Application Server and z/OS levels when z/OS V1.6 becomes available.

WebSphere Application Server for z/OS and OS/390, V4.0.1 will not be supported with the LDAP Enhancements for z/OS V1R4/R5 and z/OS.e V1R4/R5 Web deliverable.

**Key pricing improvements:** The IBM Mainframe Charter sets out the imperatives that will help guide IBM's investment priorities, today and far into the future. It can be summed up in three words: Innovation, Value and Community. Our commitment to Value has many components but, in general, we plan to deliver a continuing stream of technology and offerings that help lower the cost of mainframe computing on zSeries, that is, deliver more performance for a lower unit price.

As part of the mainframe charter, IBM announced a comprehensive set of pricing initiatives in 2003 designed to lower costs, and encourage customers to accelerate their move to on demand.

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## Statement of direction

IBM statement of direction update on SNA support in 2004:

- It is IBM's intent to support VTAM in z/OS Communications Server for the foreseeable future. Customers have a substantial investment in 3270 and SNA applications. We continue to support and enhance VTAM's capabilities while integrating it with new technologies. IBM has no plans at this time to

discontinue SNA support in z/OS Communications Server. As of June 2004, customers can, for selected SNA workloads, use Communications Server products for Linux™, Linux on zSeries, Microsoft™ Windows™, and AIX® to replace some of the old SNA infrastructure components, such as the IBM 3745/46 or other channel-attached SNA controllers. z/OS Communications Server can replace some SNA Network Interconnect (SNI) workloads using Enterprise Extender and Extended Border Node functions.

It is IBM's intent to introduce an additional solution in 2005 that uses NCP (Network Control Program) software running within Linux on zSeries. The intent is to provide a migration path for customers who use traditional SNA (including SNA Network Interconnect (SNI)) to communicate with their business partners. This solution can allow them to continue using traditional SNA without a dependency on IBM 3745 and 3746 Communications Controller hardware.

**Notable change:** With z/OS V1.6, Text Search is no longer made available as a base element of z/OS. Instead, it will be made available for Web download as z/OS and z/OS.e Text Search under a restricted license. This is a change to the statement of direction made in Software Announcement 203-266, dated October 7, 2003, which stated that with z/OS V1.6, the Text Search base element would be removed and no replacement would be provided. The Text Search element has been removed from the z/OS product. However, the Text Search function is still required and licensed for use only for DB2 UDB Text Extender feature of DB2 Universal Database® for z/OS, Program Number 5625-DB2, as a Web deliverable named z/OS and z/OS.e Text Search.

Before you use the DB2 UDB Text Extender feature, you must download and install the z/OS and z/OS.e Text Search Web deliverable on z/OS V1.6.

IBM plans to take the following actions effective with z/OS V1.7:

- Support for ISAM data sets will be withdrawn. When this support is withdrawn, you will no longer be able to process ISAM data sets other than to delete them. The ISAM Compatibility Interface will remain available to help you migrate applications to VSAM without application changes.
- Support for JES2 compatibility mode will be withdrawn. As of z/OS V1.7, JES2 will no longer support compatibility with pre-z/OS V1.2 systems. The \$ACTIVATE command, which converts the JES2 checkpoint from z2 mode to R4 mode (compatibility mode), will be removed. Before installing z/OS V1.7, you will need to do one of the following:
  - Use the \$ACTIVATE command to convert the JES2 checkpoint to z2 mode
  - Offload the SPOOL, cold start JES2 z/OS V1.7, and reload the jobs on the new SPOOL
- The z/OS Optional Source Code media features will not be offered in z/OS V1.7. The last release offering these materials will be z/OS V1.6 and z/OS.e V1.6. These features contain macros and source code for some programs in the z/OS BCP, BDT base, BDT SNA NJE, BDT File-to-File, DFSMS, MICR/OCR, BCP JPN, and Security Server RACF elements.
- Support for the STEPCAT and JOBCAT JCL statements will be withdrawn. There are other facilities in DFSMSdfp™ that allow catalog requests to be directed to specific catalogs, and the utility of these two JCL statements has been drastically reduced by the implementation of System-Managed Storage and the

placement of Unit Control Blocks (UCBs) above the 16 MB line. When this support is withdrawn, any remaining JCL that uses these two statements will have to be changed.

- The OS/390 V2.10 C/C++ compiler is planned to be removed from the C/C++ without Debug Tool feature, leaving only the ISO C/C++ compiler. Since z/OS V1.2, the OS/390 V2.10 C/C++ compiler has been shipped in addition to the strategic ISO C/C++ compiler that is also provided with z/OS. This OS/390 V2.10 C/C++ compiler serves as a migration aid to the newest ISO C/C++ compiler.

IBM plans to take the following action effective in 2005:

- IBM intends to provide a VSAM Java database connectivity (JDBC) Connector. A JDBC Connector implements a Java application programming interface that is designed to allow you to write Java-based applications that read and write VSAM data without having to do VSAM programming or use copies of existing data. These applications can access VSAM data, at the same time as other applications, when deployed in WebSphere, DB2, and UNIX Systems Services environments. When used with the optional DFSMSStvs (Transactional VSAM Services) feature, the VSAM JDBC Connector can allow WebSphere applications to participate in coordinated commit processing.

IBM plans to take the following actions in a future release:

- Support for the VSAM IMBED, REPLICATE, and KEYRANGE attributes will be withdrawn. No supported release of z/OS or OS/390 allows you to define new VSAM data sets with these attributes. Using them for existing data sets can waste DASD space and can often degrade performance. When this support is withdrawn, you will not be able to process data sets with these attributes.
- The English and Japanese ISPF panels will be removed from DFSORT™. This limited function interactive facility will no longer be provided, and there will be no replacement. All other previously supported methods for invoking DFSORT will still be supported, such as batch invocation and invocation from a program.

For previously announced statements of direction affecting z/OS V1.7 and future releases, visit

[http://www.ibm.com/servers/eserver/zseries/zos/zos\\_sods.html](http://www.ibm.com/servers/eserver/zseries/zos/zos_sods.html)

These statements represent current intentions of IBM.

Any reliance on these Statements of Direction are at the relying party's sole risk and will not create any liability or obligation for IBM.

All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

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## Hardware and software support services

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### *SmoothStart™/installation services*

IBM offers a number of remote and on-site SmoothStart Services, Operational Support Services, Migration Services, and Installation Services designed to accelerate productive use of the IBM solution. These services are provided by IBM or an IBM Business Partner at an additional charge. For additional information, contact an IBM representative and ask for IGS Services for z/OS or z/OS.e.



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## Reference information

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- Software Announcement 204-017, dated February 10, 2004 (IBM z/OS V1.5: Extends mainframe innovation and delivers the z/OS V1.4 Consoles Enhancements feature, and Preview: z/OS V1.6)
- Software Announcement 203-266, dated October 7, 2003 (Statements of direction: z/OS and z/OS.e and accelerated delivery: z990 cryptographic support Web deliverables)
- Hardware Announcement 104-118, dated April 7, 2004 (IBM enhances the IBM zSeries 990 family of servers)
- Software Announcement 204-109, dated May 25, 2004 (IBM Ported Tools for z/OS)
- Software Announcement 204-178, dated August 10, 2004 (IBM 64-bit SDK For z/OS, Java 2 Technology Edition, Version 1.4)
- Software Announcement 204-181, dated August 10, 2004 (IBM XML Toolkit for z/OS V1.7)
- Software Announcement 204-122, dated June 8, 2004 (High Level Assembler for MVS™ & VM & VSE)
- Software Announcement 204-096, dated April 28, 2004 (Preview: IBM Virtualization Engine delivers on demand virtualization functions to multiple operating systems and platforms)
- Software Announcement 204-176, dated August 10, 2004 (IBM SMP/E for z/OS V3.3)

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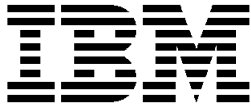
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# IBM US Announcement Supplemental Information

August 10, 2004

## Preview: z/OS® V1.7

Previews provide insight into IBM plans and direction. Availability, prices, ordering information, and terms and conditions will be provided when the product is announced.

**Note:** This statement represents current intentions of IBM. IBM development plans are subject to change or withdrawal without further notice.

### Application integration

Earlier this year, IBM announced that Hierarchical File System (HFS) function is stabilized. The zSeries® File System (zFS) is the strategic UNIX® Systems Services file system for z/OS. IBM plans to enhance zFS function in z/OS V1.7 so that you can use zFS file systems at all levels within the file hierarchy.

With z/OS V1.7, the C/C++ Compiler and Language Environment® plan to support the ISO C99 standard. This support is expected to include new language features and library functions designed to improve the usability of the programming environment and portability of programs across different platforms.

### Security

Planned improvements for security include:

- **Integrated IPSecurity support:** Communications Server support is planned for IP filtering, Internet Key Exchange (IKE), and Virtual Private Network (VPN), without requiring use of the Integrated Security Services Firewall Technologies. These integrated functions are expected to help improve network security configuration, monitoring, scalability, and performance. The Policy Agent can be used as a central configuration point for filter rules and VPN rules. The Traffic Regulation Management Daemon (TRMD) will be enhanced to log IPsec events.
- **Security Server (RACF®) improvements:** Security Server support is planned for mixed-case passwords. This will allow a greater number of combinations for passwords, which can help provide improved security and better compatibility with other platforms.

### Availability

Planned improvements in availability for z/OS V1.7 include:

**TCP/IP Sysplex Autonomics:** z/OS Communications Server plans to continue delivering autonomic capabilities designed to optimize performance and maximize availability with less need for operator intervention. These enhancements are planned:

- Self-optimizing:
  - Sysplex Distributor will distribute incoming traffic to target stacks within a sysplex using optimal available IP routes. This allows the use of high-speed interfaces such as OSA Express Gigabit Ethernet. In addition, it removes a restriction: Sysplex Distributor need no longer use only dynamic XCF interfaces for packet forwarding.
  - Sysplex Distributor will exploit new z/OS WLM support to help optimize workload balancing for TCP/IP servers in a sysplex. Sysplex Distributor will use server-specific recommendations from WLM that reflect how well target servers meet their service class goals.
- Self-healing — Sysplex Distributor will use key performance indicators such as connection backlog queues to supplement existing measurements and WLM recommendations. This will help improve load balancing.
- Self-configuring — TCP/IP will be able to rejoin a sysplex once problems that have triggered an automatic takeover have been resolved. When a stack rejoins a sysplex, it can automatically restore its original configuration and resume ownership of any Dynamic Virtual IP Addresses (DVIPAs) for which it is the primary owner. This expands on the TCP/IP Automatic Takeover function introduced in z/OS V1.6.
- Self-protecting — The new z/OS Load Balancing Advisor will make sysplex information available to network-based load balancers (such as content switches and load balancing appliances), so that they can make better load balancing decisions.

This helps protect busy target servers in a sysplex from being overloaded with new requests when they are already in danger of failing to meet their WLM service class goals or lack displaceable capacity.

By helping meet WLM goals in a sysplex while allowing you to take advantage of network-based load balancers, z/OS Load Balancing Advisor helps maximize availability and optimize performance.

**TCP/IP Sysplex operational enhancements:** New TCP/IP configuration options and operator commands will help improve operational tasks for TCP/IP stacks in a sysplex and remove the need to manage OBEYFILE profiles.

- When a TCP/IP stack has been removed from a sysplex, a configuration option and an operator command will allow the stack to rejoin the sysplex and restore its configuration.
- A new command will be provided to activate and deactivate a DVIPA, so that a TCP/IP stack can easily obtain or relinquish ownership.

*This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.*

## Scalability

Scalability enhancements for z/OS V1.7 are planned to include:

- **Sequential and EXCP data sets larger than 64K tracks** will be supported. (This is in addition to existing support for extended format sequential data sets larger than 64K tracks.)
- **More than 255 extents per VSAM component** will be supported.

These changes are expected to provide you greater flexibility when using larger volumes and reduce the frequency with which you need to defragment volumes.

## Optimization

Self-optimizing capabilities planned for z/OS V1.7 include:

- **Virtualization Engine™ support:** Building on IBM mainframe leadership and strong 35-year heritage of virtualization across IBM systems, IBM Virtualization Engine helps to enrich these innovative competencies across the entire IBM and TotalStorage® portfolio to help further simplify and optimize the management of a heterogeneous IT infrastructure. The Virtualization Engine was previewed by IBM in Software Announcement 204-096, dated April 28, 2004. These innovative offerings provide a key component of the on demand operating environment, addressing a wide range of user needs, ranging from provisioning to workload management (IBM Enterprise Workload Manager) and system management.

IBM Virtualization Engine is a suite of systems services and technologies that can help your business improve the effectiveness of IT as it treats resources of individual servers, storage, and networking products to function as a single pool or entity, allowing access and management of resources across an organization more efficiently, by effect and need rather than physical location. Virtualization is a key component of the on demand operating environment, which can help you align your IT environment more effectively with the needs of your business.

z/OS plans to extend its role in cross-system optimization with capabilities in support of the IBM Virtualization Engine. IBM plans to deliver Enterprise Workload Manager support for z/OS in 2005. IBM also intends to deliver Common Information Model (CIM) support on z/OS in 2005. This set of open interfaces enables cross-platform systems management solutions.

- **Enhancements for WLM**
  - **Sub Capacity Report Tool (SCRT) Extensions For Dedicated CPUs** are planned to provide a 4-hour rolling average of real consumed CPU time without wait time, independent of LPAR configuration. This is designed to allow you to determine the actual software cost for systems running either in LPAR mode or as VM guests when VM is running in one or more LPARs.
  - **CPU capacity on demand:** New System Resource Manager (SRM) support is planned to allow you to perform processor capacity upgrades and downgrades in a more granular way than by adding or removing entire CPs. SRM will be designed to react to nondisruptive processor speed changes to support Sub-Capacity Processors, dynamically adjusting to real processor capacity on demand.

- **XRC+ and Geographically Dispersed Parallel Sysplex™ (GDPS™) enhancements** are planned to allow log data managed by the System Logger to be replicated to a remote location. In the case of a disaster, log data is expected to be available at the remote location along with the database it corresponds to. This is expected to help improve recovery time and reduce data loss.
- **CICS® sockets enhancements** are planned to improve application performance by:
  - Allowing CICS sockets to use the CICS Open Transaction Environment (OTE). This is designed to reduce task switching in CICS environments.
  - Helping to reduce the overhead of CICS sockets tracing and monitoring processing when these facilities are not activated.
  - Allowing the IP CICS Sockets Task-Related User Exit (TRUE) to be loaded above the 16MB line, providing virtual storage constraint relief.

## Ease of use

Planned improvements include:

**IBM Health Checker for z/OS and Sysplex** will be a new z/OS base function. An IBM Health Checker for z/OS and Sysplex tool has been provided as a Web download; positive customer response led IBM to integrate and enhance it. IBM Health Checker for z/OS and Sysplex provides a foundation to help simplify and automate verification of best practices for z/OS and sysplex configuration values. It compares active values and settings to those generally recommended or to those you specify for your installation. IBM Health Checker for z/OS and Sysplex consists of:

- The **Framework** is a started task designed to manage functions such as check registration services, messaging, scheduling, command processing, logging, and reporting. The Framework has a fully-documented programming interface designed to let anyone write a check for it to perform.
- **Checks** are provided separately and are independent of the Framework. Checks can be added to the system dynamically. You can provide overrides to check defaults using HZSPRMxx parmlib members or MODIFY operator commands. You can also use MODIFY commands to display the status of checks and dynamically change their status and parameters.

IBM plans to update checks currently available from the Web download tool to support the IBM Health Checker for z/OS and Sysplex framework and provide them in PTFs.

Examples of checks include:

- Virtual storage configuration, which also highlights changes from IPL to IPL
- Real storage settings that affect RSM processing
- Couple data set configuration
- Coupling facility connectivity and CF structure placement
- XCF configuration definitions
- Console definitions
- z/OS UNIX file system configuration

IBM Health Checker for z/OS and Sysplex framework is also planned to be made available for z/OS releases V1.4, V1.5, and V1.6 as a z/OS Web download. Before that time, you can download the current IBM Health Checker from

<http://www.ibm.com/servers/eserver/zseries/zos/downloads/>

Starting with z/OS V1.7, SDSF will support IBM Health Checker for z/OS and Sysplex. It will make managing your checks easier with a new Check (CK) panel. You will be able to use the CK panel to

- Display checks, attributes, and status, taking advantage of standard SDSF sort, filter, and arrange support
- Alter check attributes (such as status, interval, severity, category, and WTO descriptor)
- Browse check output for the most recent check
- Print check output or sent it to a data set

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## Related information

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**IBM Tivoli® NetView® for z/OS V5.1 (5697-ENV)** (with APAR OA06856) offers new Intrusion Detection Services (IDS) support designed to improve your z/OS network security. NetView IDS support is based on z/OS Communications Server Intrusion Detection Services. Communications Server's IDS is intended to complement traditional network-based IDS devices.

There is a growing realization that more attacks come from inside than in the past—not only attacks from insiders, but attacks from compromised machines inside the enterprise. IDS provides more protection in areas that cannot be covered well by traditional network-based IDS devices, such as routers. NetView Message Automation for Intrusion Detection is designed to

- Generate alerts, notify Tivoli Risk Manager, send NetView operator messages, and send e-mail notifications when attacks are detected. The notifications can be customized for your installation, and additional data or statistics about the intrusion can be included.
- Issue commands to collect more data. Responses and messages are logged, and can be sent via e-mail to a designated receiver.
- Collect summary statistics based on the type of intrusion or event.

Also, you can set a threshold to help prevent IDS message flooding.

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## z/OS V1.6 product content

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z/OS is composed of base elements and optional features. Optional features are priced and unpriced. To learn more about these elements and features, refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504) at

[http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find\\_books.html](http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find_books.html)

**Replacing base elements:** Customers have the ability to replace a z/OS base function with a commercially available product that provides a similar function. Contact an IBM representative for qualification and pricing information. All z/OS integrated testing results

and performance claims are voided with such replacement.

**Export considerations:** The following z/OS functions have export considerations:

- **Base elements**

- Communications Server — SNA/APPN® Services (includes VTAM®) (limited DES)
- Communications Server — TCP/IP Services (includes TCP/IP for MVS™) (Firewall CDMF DES 40 bit, SNMPv3 DES 56 bit, IP Sec DES 56 bit)
- Cryptographic Services — Open Cryptographic Services Facility (RC2/RC4/RC5 40-56 bit, DES 56 bit)
- Cryptographic Services — PKI Services (uses RACF, OCSF and ICSF)
- Cryptographic Services — System SSL (RC2/RC4, DES through 56 bit, and Diffie-Hellman)
- DCE Base Services (OSF DCE level 1.1) (limited DES)
- Distributed File Service (DFS™/SMB/zFS) (DFS support at OSF DCE level 1.2) (DES 56 bit)
- IBM HTTP Server NA Secure (uses System SSL)
- Integrated Security Services — DCE at OSF DCE level 1.2.2 (limited DES)
- Integrated Security Services — Firewall Technologies (DES)
- Integrated Security Services — LDAP Server (uses System SSL, OCSF, and ICSF)
- Integrated Security Services — Network Authentication Service (DES)
- Language Environment (limited DES)

- **Optional features**

- Communications Server Security Level 3 (TDES)
- Security Server — RACF (limited DES and CDM, RC2 40 bit)
- z/OS Security Level 3 — LDAP Security Level 3 (TDES, RC4 128 bit)
- z/OS Security Level 3 — Network Authentication Service Level 3 (TDES)
- z/OS Security Level 3 — Open Cryptographic Services Facility Security Level 3 (TDES, DES, RC2/RC4/RC5)
- z/OS Security Level 3 — System SSL Security Level 3 (RC2/RC4, TDES, AES)

**Enabling optionally priced features:** z/OS optionally priced features use a z/OS product registration service, together with product policy statements, to determine whether or not the z/OS priced feature has been ordered and should run. Optionally priced features that are ordered concurrently with z/OS will be shipped by IBM together with policy statements in PARMLIB that enable the ordered priced features. z/OS priced features that have not been ordered will also be shipped with z/OS, but with policy statements that disable the unordered features. If the customer subsequently enables any of the optional priced features, those features also become subject to the payment terms of the customer's existing z/OS license as described in the *z/OS Licensed Program Specifications* (GA22-7503). Customers must notify IBM

when they enable an optional feature that was shipped disabled. A detailed description of the enablement support is available in *z/OS and z/OS.e Planning for Installation* (GA22-7504).

### Program services

Central service for suspected defects in z/OS code is provided by the IBM Support Center within the customer's geography. On-site (local) support, although available in many geographies, is provided as part of IBM's portfolio of fee-based services.

Coexistence and migration rules should be taken into account in planning future migrations. Refer to the **General coexistence, release migrations, and fallback** section in the **Technical information** section for additional information.

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### Education support

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The following worldwide courses are available for classroom delivery:

- Introduction to z/OS Environment (ES05)
- Fundamental System Skills for z/OS (ES10)
- z/OS Facilities (ES15)
- z/OS Operations (ES27)
- z/OS Installation Using ServerPac (ES41)
- z/OS Update (OZ30)
- z/Architecture™ for zSeries 800 and zSeries 900 (OZ09)
- IBM eServer z990/z890 Technical Update and Configuration Guidelines (OZ05)

In the U.S. and Canada call 800-IBM-TEACH (426-8322) to enroll in one or more of these classes.

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### Technical information

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**Hardware requirements:** z/OS V1.6 runs on the following IBM servers:

- zSeries z900 or z990, or equivalent
- zSeries z800 or z890, equivalent

**Software requirements:** The z/OS base is a system that can be IPLed. There are no software prerequisites in order to IPL. Specific functions may require additional products not included in the z/OS base, or in the optional features of z/OS. Refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504) for a listing of specific software requirements at

[http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find\\_books.html](http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find_books.html)

#### Coexistence, release migrations, and fallback

z/OS and z/OS.e give you compatibility and flexibility as you migrate systems in a multisystem configuration by allowing several releases of z/OS or z/OS.e to coexist. This includes non-Parallel Sysplex® and Parallel Sysplex multisystem configurations.

Coexistence allows systems within a multisystem configuration to be upgraded to a new release level of z/OS one system at a time. This is contingent on the fact that the release you are migrating to can coexist with the lowest release running in your multisystem configuration.

z/OS is coexistence-supported with its equivalent z/OS.e release (as well as any z/OS.e releases equivalent to any coexistence-supported z/OS release). As such, z/OS.e supports the same migration policy as z/OS.

Starting with z/OS V1.6, the Coexistence-Migration-Fallback policy aligns with the Service policy. The intention of this policy is to simplify and provide greater predictability to aid in release migrations. IBM intends to continue with the practice of providing service support for each release of z/OS or z/OS.e for three years following its general availability (GA) date. IBM, at its sole discretion, may choose to leave a release supported for more than three years. This Coexistence-Migration-Fallback policy is effective starting with the first release of the new annual release cycle, z/OS and z/OS.e V1.6. In some cases, more than three releases may be coexistence, migration, and fallback supported, if IBM at its sole discretion chooses to provide service support for greater than three years for a release. However, any z/OS or z/OS.e release having three or fewer months of service remaining at the time of GA of a new release will not be coexistence, migration, and fallback supported.

**Note:** These statements represent current intention of IBM. IBM reserves the right to change or alter the Coexistence-Migration-Fallback policy in the future or to exclude certain releases beyond those stated. IBM development plans are subject to change or withdrawal without further notice. Any reliance on this statement of direction is at the relying party's sole risk and does not create any liability or obligation for IBM.

Migration forward as well as fallback should be made within the same z/OS releases supported by the coexistence policy.

The following table shows the releases that are coexistence-supported with z/OS V1.6.

**Table: Coexistence-supported releases**

Release	Coexistence-supported with release in column 1
z/OS V1.3 or z/OS.e V1.3	OS/390(R) V2.9 (1), (z/OS V1.1 & OS/390 V2.10) (2,3), z/OS V1.2 (4), z/OS V1.3, z/OS.e V1.3
z/OS V1.4 or z/OS.e V1.4	(z/OS V1.1 & OS/390 V2.10) (2,3), z/OS V1.2 (4), z/OS V1.3, z/OS V1.4, z/OS.e V1.3, z/OS.e V1.4
z/OS V1.5 or z/OS.e V1.5	z/OS.e V1.3, z/OS.e V1.4, z/OS.e V1.5, z/OS V1.2 (4), z/OS V1.3, z/OS V1.4, z/OS V1.5
z/OS V1.6 or z/OS.e V1.6	z/OS.e V1.3, z/OS.e V1.4, z/OS.e V1.5, z/OS.e V1.6, z/OS V1.3, z/OS V1.4, z/OS V1.5, z/OS V1.6
z/OS V1.7 (5) or z/OS.e V1.7	z/OS.e V1.4, z/OS.e V1.5, z/OS.e V1.6, z/OS.e V1.7, z/OS V1.4, z/OS V1.5, z/OS V1.6, z/OS V1.7
z/OS V1.8 (5) or z/OS.e V1.8	z/OS.e V1.5, z/OS.e V1.6, z/OS.e V1.7, z/OS.e V1.8, z/OS V1.5, z/OS V1.6, z/OS V1.7, z/OS V1.8
z/OS V1.9 (5) or z/OS.e V1.9	z/OS.e V1.7, z/OS.e V1.8, z/OS.e V1.9, z/OS V1.7, z/OS V1.8, z/OS V1.9

## Notes:

1. OS/390 V2.9 — End of service was March 2003.
2. OS/390 V2.10 — End of service is September 2004.
3. z/OS V1.1 — End of Service was March 2004.
4. z/OS V1.2 — End of service is October 2004.
5. Operating system levels beyond z/OS and z/OS.e V1.6 represent current intentions of IBM.

This consistent coexistence, migration, and fallback policy applies to release migrations for all configurations, whether they are:

- Single system configurations
- Individual systems within a multisystem configuration
- Cases where a simultaneous IPL is used to migrate all systems in a multisystem configuration at the same time

Since each release of z/OS can normally be ordered only until the next release of z/OS becomes orderable, it is very important that you order the required z/OS release you need for migration and coexistence while still available.

For additional information on z/OS coexistence and release migration information, refer to *z/OS and z/OS.e Planning for Installation (GA22-7504)* at

<http://www.ibm.com/servers/eserver/zseries/zose/bkserv/>

For migrations inside the IBM migration and coexistence policy, IBM Global Services (IGS) has fee-based offerings that provide a PTF on demand service for toleration and coexistence maintenance based upon a customer's SMP/E Consolidated Software Inventory (CSI). With these offerings, you specify the release of z/OS, z/OS.e, or other products, or hardware (for example, 2066) to which you are migrating, and all configured toleration/coexistence maintenance for your current system (as specified by your CSI) will be delivered to you as a customized package in electronic or physical format. This is provided through the S/390® SoftwareXcel offering, via the Service Request and Delivery (SRD) function.

IGS also provides hands-on fee-based services to assess whether a migration outside the migration and coexistence policy might be possible. For more information on the migration services that IGS provides for both inside and outside the migration and coexistence policy, contact your local IBM sales specialist.

### **JES coexistence, release migrations, and fallback**

You can migrate to the next version of JES2 or JES3 at the same time you migrate to the rest of z/OS. In this way, you benefit directly from the new function provided by the most current JES and enable other elements and features to benefit from this level.

Fallback for z/OS is at a system level, rather than an element or feature level. Since you migrate to JES2 or JES3 at the same time you migrate to z/OS you cannot back out JES2 or JES3 separately; you can only back out the entire z/OS product.

Although you must run the level of JES that comes with z/OS, that JES can communicate with certain lower levels of JES running on other z/OS and z/OS.e systems in the same MAS or multisystem complex.

For additional information on z/OS JES release migration and coexistence, refer to *z/OS and z/OS.e Planning for Installation (GA22-7504)* by visiting

<http://www.ibm.com/servers/eserver/zseries/zose/bkserv/>

### **Installation and customization**

**Installation planning:** The publication *z/OS Migration* now documents all supported migration paths to z/OS V1.6.

z/OS V1.6 can be installed using:

- SystemPac®, a fee system replacement offering
- ServerPac, an entitled system replacement offering
- CBPDO, an entitled system upgrade offering.

For more information about installing z/OS, refer to *z/OS and z/OS.e Planning for Installation*.

**SystemPac enhancements:** SystemPac has been enhanced to include:

- Improved tape handling and order management
- Reduced data entry
- Fewer installation jobs

You can find more information about SystemPac on the Web at

<http://www.ibm.com/ca/custompac/>

**ServerPac enhancements:** Internet delivery for z/OS is now available using ServerPac. (Products other than z/OS continue to be available via the Internet using CBPDO.) You can choose between tape and Internet delivery. You can also request that all components of your order be delivered electronically.

You can download ServerPac orders directly to your z/OS host or use an intermediate node (such as a workstation) to transfer your order to your z/OS system.

ServerPac has also been enhanced to include:

- Improved tape handling and order management
- Reduced data entry
- Fewer installation jobs

Internet delivery is available for orders placed through ShopzSeries at

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

ShopzSeries is available in the United States and many other countries.

There are additional driving system requirements for Internet delivery. They are described in *z/OS and z/OS.e Planning for Installation*.

General availability of ServerPac Internet delivery is planned for January 10, 2005.

**SMP/E enhancements:** z/OS V1.6 SMP/E includes the same functions as SMP/E V3.3. SMP/E V3.3 (5655-G44) has been enhanced, with:

- RECEIVE command support for assigning SOURCEID values to already-received SYSMODs
- RECEIVE FROMNETWORK support of SOCKS firewalls and secure FTP operations, using the z/OS Communications Server FTP Client

- Automatic use of IEBCOPY's COPYMOD function for load modules
- CHECK operand support for the REJECT command
- Wildcard support in the CSI Query dialog
- Internet packaging enhancements in GIMZIP and GIMUNZIP, which now support VSAM and non-VSAM data sets as well as UNIX files and directories, and to allow archives to be extracted into existing data sets
- A new service routine, GIMGTPKG, to transfer GIMZIP packages without using the RECEIVE FROMNETWORK command.

For additional information, refer to Software Announcement 204-176, dated August 10, 2004.

**Customized Offerings Driver:** The Customized Offerings Driver (5655-M12) has been updated to support the installation of z/OS V1.6 with SMP/E V3.3, the additional driving system PTFs required to install z/OS V1.6, and electronic delivery for ServerPac. The Customized Offerings Driver is now at level V2.1.1.

**Recommended Service Upgrade (RSU):** IBM recommends that you use the Recommended Service Upgrade (RSU) strategy to maintain z/OS after installation. RSU is based on Consolidated Service Testing (CS), which uses customer-like workloads in a high-stress sysplex environment to verify key z/OS, WebSphere®, DB2®, CICS, and other functions. For more information about RSU, visit

<http://www.ibm.com/servers/eserver/zseries/zos/servicetst/>

**Performance considerations:** Additional information on z/OS V1.6 performance will be published at general availability. Contact an IBM representative at or after general availability.

**User group requirements:** z/OS V1.6 satisfies or partially satisfies requirements from IBM customers and one or more of the worldwide user group communities. Information on the specific User Group Requirements (numbers and descriptions) can be found at

[http://www.ibm.com/servers/eserver/zseries/zos/bkserv/user\\_group\\_reqs.html](http://www.ibm.com/servers/eserver/zseries/zos/bkserv/user_group_reqs.html)

### Planning information

**Direct customer support:** Direct customer support for questions about the installation and use of the product is provided by IBM Operational Support Services — SoftwareXcel Enterprise Edition or SoftwareXcel Basic Edition. These fee services can help enhance productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services — SoftwareXcel Enterprise Edition or SoftwareXcel Basic Edition will help answer questions pertaining to usage, how to, and suspected software defects for eligible products.

Installation and technical support is provided by IBM Global Services. For more information on services, call 888-426-4343. To obtain information on customer eligibility and registration procedures, contact the appropriate support center.

**Packaging:** When ordering z/OS, IBM recommends that the customer also order all the unpriced optional (**export controlled**) features that may be needed in the future. That is because these features may not still be orderable

later when the customer needs them. For example, to obtain stronger encryption support (security) for the z/OS Integrated Security Services Base Element, you must specify the security feature named z/OS Security Level 3.

### System integrity

IBM will accept APARs where the installation of z/OS introduces an exposure to system integrity.

### Security, auditability, and control

Data security and auditability in the z/OS environment are enhanced by the functions available in the optional Security Server for z/OS feature. 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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## Ordering information

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### Ordering z/OS through the Internet

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

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

Key additions in Release 8.2 (6/2004) are:

- ShopzSeries now uses your IBM ID
- View the ShopzSeries product catalogs outside of the ordering process
- View the FMIDs associated with each product
- Subscribe for periodic preventive service
- Higher Internet delivery threshold for service orders + ability to split service orders into smaller files

For more information on recently deployed new features, visit

<http://www.software.ibm.com/ShopzSeries?action=news>

### Current licensees

For pricing information previously announced for z/OS V1, refer to

- Software Announcement 200-352, dated October 3, 2000
- Software Announcement 202-036, dated February, 19, 2002
- Software Announcement 202-105, dated April 30, 2002
- Software Announcement 202-190, dated August 13, 2002
- Software Announcement 203-131, dated May 13, 2003

## Key dates

- **August 10, 2004:** z/OS V1.6 CFSW configurator support for stand-alone path (5694-A01) and price proposal support.
- **August 31, 2004:** Recommended last date for submitting z/OS V1.4 and z/OS V1.5 orders for ServerPac, SystemPac and CBPDO. This date will allow for adequate order processing time.
- **September 9, 2004:** Last date for ordering z/OS V1.4 and z/OS V1.5 via ServerPac, SystemPac and CBPDO.
- **September 10, 2004:** First date for ordering z/OS V1.6 ServerPac, SystemPac, CBPDO using CFSW configuration support, or ShopzSeries, the Internet ordering tool. Note that most z/OS media (executable code) is shipped only through Customized Offerings (ServerPac, SystemPac, and CBPDO).
- **September 24, 2004:** z/OS V1.6 planned general availability via ServerPac, CBPDO and SystemPac.
- **September 24, 2004:** Planned general availability of z990 and z890 Enhancements to Cryptographic Support Web Deliverable to support z/OS V1.6 and z/OS.e V1.6. This new support is in addition to the previously available support for z/OS V1R2/R3/R4/R5, z/OS.e V1R3/R4/R5, and OS/390 V2.10, which became generally available on May 28, 2004.
- **September 24, 2004:** Planned general availability of z/OS and z/OS.e Text Search Web deliverable. This Web deliverable will support z/OS V1.6 and z/OS.e V1.6.
- **September 30, 2004:** Last date for Web download of the SMP/E V3R2 Web deliverable.
- **October 1, 2004:** Planned general availability of SMP/E V3R3 Web deliverable.
- **November 19, 2004:** Planned general availability of LDAP Enhancements for z/OS V1R4/R5 and z/OS.e V1R4/R5 Web deliverable.
- **December 17, 2004:** Planned general availability of ICSF 64-bit Virtual Support for z/OS V1R6 and z/OS.e V1R6 Web deliverable.
- **December 31, 2004:** Last date for Web download of the z/OS V1R1/R2/R3 and z/OS.e V1R3 Managed System Infrastructure for Setup Web deliverable.
- **December 31, 2004:** Last date for Web download of the z990 Compatibility for Selected Releases Web deliverable (which supports OS/390 V2R10, z/OS V1R2/R3 and z/OS.e V1R3).
- **December 2006:** Last date for ordering z/OS V1R4 z990 Exploitation Support feature and z/OS V1R4 Consoles Enhancements feature.

Typically, when one z/OS release becomes orderable in ServerPac, SystemPac, and CBPDO, the previous release is no longer orderable. Since each release of z/OS can normally be ordered only until the next release of z/OS becomes orderable, it is very important that you order the z/OS release you need for migration and coexistence while still available.

To obtain the Web deliverables listed above, visit

<http://www.ibm.com/server/eserver/zseries/zos/downloads>

The end of service for a Web deliverable occurs at end of service for the release on which it runs.

For the latest product catalog for CBPDO, ServerPac, and SystemPac, visit the following Web site and select z/OS:

<http://www.ibm.com/servers/eserver/zseries/software/swinfo/>

Products that are unavailable via CBPDO, ServerPac, or SystemPac, such as Lotus® Domino™ (5655-B86), can also be separately ordered for use with z/OS.

Starting in z/OS V1.6, the following base elements have been removed as announced in Software Announcement 203-266, dated October 7, 2003.

- Encina® Toolkit Executive
- Distributed Computing Environment (DCE) Application Support
- Text Search (Refer to z/OS and z/OS.e Text Search Web deliverable information listed above in key dates for September 24, 2004.)

Effective with z/OS V1.6, IBM HTTP Server NA Secure has been integrated into the base and is no longer a separately orderable feature.

The Memo to New Licensees is not offered starting with z/OS V1.6. Information concerning the key code for the licensed publications is now available in the installation guide that is delivered with the ServerPac or SystemPac deliverable or in the Memo to User Extension (MTUX) with CBPDO.

Effective with z/OS V1.7, optional source code is no longer offered.

The following features will be available for electronic delivery in CBPDO when ordered using ShopzSeries.

- z/OS V1R4 z990 Exploitation Support feature
- z/OS V1R4 Consoles Enhancements feature

This support provides a quick and easy way for you to order and receive these features. The z/OS product (except for these features) remains unavailable for electronic delivery in CBPDO.

## Current licensees of z/OS V1

z/OS V1 customers can migrate to z/OS V1.6 by ordering the release through the Customized Offerings (ServerPac, SystemPac, CBPDO) as done in the past.

z/OS V1.6 will not be offering the following optional unpriced feature:

- IBM HTTP Server NA Secure

**Note:** IBM HTTP Server NA Secure has been integrated into the base and is no longer a separately orderable feature.

For more details, refer to the **New licensees** section under **Ordering information**.

## New licensees

**New licensees of z/OS V1.6:** The z/OS product ships its executable code via Customized Offerings (CBPDO, ServerPac, SystemPac). Noncustomized items (for example, CD-ROMs, Hardcopy Publications) will continue to be shipped via the stand-alone product.

For all z/OS orders, the current customer install base of the Customized Offering 5751-CSx (not the install base of 5694-A01) must be retained to determine the z/OS version and release level most recently ordered.



Production of z/OS V1.6 orders will begin on the planned general availability date, **September 24, 2004**. Ship dates for orders will be based on order sequence, Customized Offering selected, production capability, and customer-requested arrival date. Due to the amount of customization of ServerPac orders, shipments will begin approximately **two weeks after** general availability. Due to the amount of additional customization of SystemPac orders, shipments will begin approximately four weeks after order and data input verification. For CBPDO orders, shipments will begin one week after general availability. In all cases, no delivery commitments are to be made to the customer until confirmed arrival dates are in ESW.

### Basic license

To order a basic license, specify the z/OS V1.6 program number 5694-A01. Proceed to select the feature numbers listed, which are required, and then select any optional feature numbers.

**Single version charging:** To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on.

### Basic machine-readable material

The following no-charge features are added to z/OS V1.6 and can be ordered effective **August 10, 2004**. These features have pricing/billing features associated with them. Refer to notes below for details on past announcements for this information.

z/OS V1.6 Feature description	z/OS V1.6 feature number
Base	6468

#### Notes

- Starting in z/OS V1.6, the following base elements have been removed as announced in Software Announcement 203-266, dated October 7, 2003:
  - Distributed Computing Environment (DCE) application support
  - Encina Toolkit Executive
  - Text Search
- The billing features and pricing information for the above feature descriptions remain unchanged and are provided in:
 

- Software Announcement	200-352,	dated
October 3, 2000		
- Software Announcement	202-036,	dated
February 19, 2002		
- Software Announcement	202-105,	dated
April 30, 2002		
- Software Announcement	202-190,	dated
August 13, 2002		
- Software Announcement	203-131,	dated
May 13, 2003		
- This product ships its executable code via Customized Offerings (CBPDO, ServerPac, SystemPac). Noncustomized items (for example, CD-ROMs, Hardcopy Publications) will continue to be shipped via the stand-alone product.

- The media type for the above items is chosen during customized offering ordering procedure.

### Basic/unlicensed hardcopy publications

A program directory and one copy of the publication *z/OS Hot Topics Newsletter*(GA22-7501) are supplied automatically with the basic machine-readable material:

#### Notes

- The Memo to New Licensees is not offered starting in z/OS V1.6. Information concerning the key code for the licensed publications will be included in the installation guide that is delivered with the ServerPac or SystemPac deliverable or in the Memo to User Extension (MTUX) delivered with CBPDO.
- Effective June 2003, the *z/OS and z/OS.e Planning for Installation* publication (GA22-7504) is no longer available in hardcopy.
- The z/OS publications are available on the Internet at

<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>

### Basic/unlicensed softcopy publications

Title	Order number
z/OS Version 1 Release 6 Collection	SK3T-4269

Starting with z/OS V1.4, as books are updated, they will be available in softcopy only on the softcopy collection and the Internet.

For a fee, the customer can order the softcopy collections or any z/OS V1.6 documents available in hardcopy using the IBM Publications Center on the Web at

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

For customers in 23 countries the IBM Publications Center now offers the option to order hardcopy publications or softcopy collections by customer number. Verify whether this option is available in the user's country.

For other publications ordering options, visit

[http://www.ibm.com/servers/eserver/zseries/zos/bkserv/order\\_books.html](http://www.ibm.com/servers/eserver/zseries/zos/bkserv/order_books.html)

**z/OS Version 1 Release 6 Collection (BookManager® and PDF):** z/OS Version 1 Release 6 Collection contains the z/OS V1.6 product books in both BookManager and PDF softcopy formats on CD-ROM. If this collection is refreshed after general availability, an updated collection will be automatically sent to z/OS V1.6 licensees.

By general availability, the z/OS V1.6 unlicensed books will be available at

<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>

If the customer wants to upload either BookManager or PDF softcopy files and create softcopy repositories, the SoftCopy Librarian is our strategic tool for uploading and managing softcopy files on a z/OS or OS/390 host or server, and on LANs and workstations. Use SoftCopy Librarian, a free program that is available on the softcopy tools disc of the collections or the Web, to obtain and manage shelves from IBM or OEM (original equipment manufacturers) CD or DVD collections or over the Internet, from the IBM PUBLIB Web site, as well as from other Web sites that provide support for the SoftCopy Librarian.

SoftCopy Librarian R4.2 or later supports downloading and management of PDFs via extended shelves (XKS files). SoftCopy Librarian has been repackaged to link the Java™ Runtime functions with its application code. In addition to eliminating the prerequisite for the Sun Java Runtime Environment on the client machine, this change has significantly improved runtime performance.

Starting in October 2003, SoftCopy Librarian is supported only on Windows™ 2000 and Windows XP.

The latest version of the SoftCopy Librarian can be downloaded from this Web site

<http://publib.boulder.ibm.com/epubs/df/ebrsclwj.exe>

### **Optional machine-readable material**

To order, select the feature number for the desired distribution medium:

**Optional unpriced features — z/OS V1.6:** The following optional features, offered at no additional charge, are added to z/OS V1.6 and can be ordered effective **August 10, 2004:**

<b>Feature description</b>	<b>z/OS V1.6 feature number</b>
Communications Server Security Level 3	6442
z/OS Security Level 3	6484

#### **Notes**

1. z/OS V1.6 will not be offering the following optional unpriced feature:

- IBM HTTP Server NA Secure

**Note:** IBM HTTP Server NA Secure has been integrated into the base and is no longer a separately orderable feature.

2. Starting with z/OS V1.5, z/OS Security Level 3 contains function from previous unpriced features formerly known as:

- OCSF Security Level 3
- System SSL Security Level 3
- Network Authentication Service Level 3

3. This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO). The media type is chosen during the customized offering ordering procedure.

4. All the above features can be exported outside the U.S.

5. These features should be ordered during this release cycle, since they are not automatically included in all orders, due to need for export regulation tracking.
6. The Kerberos function is obtainable by ordering z/OS Security Level 3 feature, which includes Network Authentication Service Level 3 function.
7. The above feature descriptions are offered at no additional charge.

**Optional priced features:** The following optional no-charge features are added to z/OS V1.6 and can be ordered effective **August 10, 2004**. These features have pricing/billing features associated with them. Refer to notes below for details on past announcements for this information.

<b>Feature description</b>	<b>z/OS V1.6 feature number</b>
BDT FTF	6434
BDT SNA NJE	6455
BookManager Build	6473
C/C++ without Debug	6464
DFSMSdss™,hsm	6485
DFSMSrmm™	6475
DFSMSdss	6482
DFSMSStvs	6412
DFSORT™	6479
GDDM® -PGF	6451
GDDM-REXX	6419
HCM	6483
HLASM Toolkit	6467
Infoprint® Server	6413
JES3	6454
RMF™	6470
SDSF	6431
Security Server	6414

#### **Notes**

1. C/C++ with Debug Tool feature was not offered starting in z/OS V1.5. To obtain this function, order the C/C++ without Debug Tool feature of z/OS and the independent product, IBM Debug Tool for z/OS. For more information, visit

<http://www.ibm.com/software/awdtools/debugtool/>

2. As of z/OS V1.5, Security Server priced optional feature contains only RACF.

3. As of z/OS V1.5, the following items (formerly in Security Server Feature) were moved to the base element, Integrated Security Services:

- DCE
- Open Cryptographic Enhanced Plug-ins (OCEP)
- LDAP Server
- Firewall Technologies
- Network Authentication Service

4. As of z/OS V1.5, PKI Services (formerly in Security Server Feature) was moved to the base element, Cryptographic Services.

5. The billing features and pricing information for the above feature descriptions are described in Software Announcement 200-352, dated October 3, 2000, Software Announcement 202-036, dated February 19, 2002, Software Announcement 202-105, dated April 30, 2002, Software Announcement 202-190, dated August 13, 2002, and Software Announcement 203-131, dated May 13, 2003.

6. This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO). The media type is chosen during the customized offering ordering procedure.
7. If the customer subsequently enables any of the optional priced features, those features also become subject to the payment terms of the existing z/OS license as described in *z/OS Licensed Program Specifications* (GA22-7503). The customer must notify IBM when an optional feature is enabled that was shipped disabled from IBM.
8. One or both of the BDT optional features (File-to-File or SNA NJE) must be ordered and installed in order to use the BDT function shipped with the base.
9. DFSMSdss cannot be ordered with DFSMSdss,hsm and vice versa.

**Optional unpriced National Language Version (NLV) features**

The z/OS V1.6 NLV support features will become generally available on the same date the release becomes available.

z/OS V1.6 provides support in the languages listed below. However, not all elements within z/OS V1.6 are translated into each language. Refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504) for information on which elements are translated into which languages, by visiting

[http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find\\_books.html](http://www.ibm.com/servers/eserver/zseries/zos/bkserv/find_books.html)

The following optional features, offered at no additional charge, are added to z/OS V1.6 and can be ordered effective **August 10, 2004**.

The NLV features for z/OS V1.6 are:

**NLV features**

Feature description	z/OS V1.6 feature number
Brazilian Portuguese Base (PTB)	6457
Brazilian Portuguese BookMgr Build	6439
Canadian French Base (FRC)	6430
Canadian French BookMgr Build	6443
Danish Base (DAN)	6472
Dutch Base (NLD)	6418
French Base (FRA)	6476
French BookMgr Build	6429
German Base (DEU)	6426
German BookMgr Build	6459
Italian Base (ITA)	6446
JPN Base	6445
JPN C/C++ Without Debug	6450
JPN DFSORT	6423
JPN Infoprint Server	6425
JPN RMF	6428
JPN SDSF	6438
JPN Security Server	6465
Upper Case English Base (ENP)	6458
Korean Base (KOR)	6456
Norwegian Base (NOR)	6433

Feature description	z/OS V1.6 feature number
Spanish Base (ESP)	6460
Spanish BookMgr Build	6444
Swedish Base (SVE)	6447
Swiss German Base (DES)	6441
Simplified Chinese Base (CHS)	6421
Traditional Chinese Base (CHT)	6466

**NLV features**

**Notes**

- The above feature descriptions are offered at no additional charge.
- JPN C/C++ with Debug support was not offered starting in z/OS V1.5. For this function and NLS support, order the C/C++ without Debug Tool feature of z/OS and the independent product, IBM Debug Tool for z/OS. For more details, visit

<http://www.ibm.com/software/awdtools/debugtool/>

- This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO).
- The media type is chosen during the customized offering ordering procedure.

\* Contains "Restricted material of IBM"

**Optional unpriced source media**

The following optional features, offered at no additional charge, are added to z/OS V1.6 and can be ordered effective August 10, 2004.

Optional source feature description	z/OS V1.6 feature number	
	3480 Cartridge	4mm DAT

Source Base (1)	6461	6462
Source Base JPN (2)	6432	6420
Source Security Server — RACF (3)	6481	6417

Effective with z/OS V1.7, IBM plans to no longer offer the optional source code.

**Notes**

- Content for source media is as follows:
  1. Base source code contains source for elements: BCP, DFSMS, BDT base, BDT SNA-NJE, BDT File-to-File, and MICR/OCR.
  2. Base source code contains source for BCP JPN element.
  3. Security Server source code is for RACF.
- Effective with z/OS V1.2, unpriced source media is no longer offered in 6250 media format.
- The above feature descriptions are offered at no additional charge.
- The feature descriptions listed above are the same offered in z/OS V1.5.

## Optional unlicensed publications

**Optional unlicensed softcopy publications:** The following optional one-time charge features are added to z/OS V1.6 and can be ordered effective **August 10, 2004**.

Subscriptions to the following softcopy collections may be ordered for a fee by specifying the one-time charge feature numbers listed below:

Title	Order number	Feature number	Price
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### Notes

- The Redbooks collection is updated, concurrently, with z/OS releases.
- The z/OS Security Server RACF Collection is updated, concurrently, with z/OS releases, and is available one week after the release general availability to licensees of the z/OS Security Server optional feature. The update for z/OS V1.6 is planned to be available October 1, 2004.
- The feature descriptions listed above are the same offered in z/OS V1.5.
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The *z/OS Software Products Collection* includes over 1,645 unlicensed online documents for more than 265 z/OS software products and Parallel Sysplex, and a softcopy tools disc. This collection includes documents for multiple releases of software products that run on z/OS. The documents are provided in BookManager format and, when available, in PDF format as well.

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The IBM Redbooks are also available for viewing or downloading on the following Web site

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To find Redbooks that apply to z/OS, enter z/OS in the search field at the top of the Web page.

The *z/OS Security Server RACF Collection* includes unlicensed softcopy documents, in BookManager format, for numerous software product libraries that reference z/OS Security Server RACF. It also includes education course listings, Web sites to access sample code on the Internet, and Portable Document Format (PDF) files for the z/OS Security Server manuals, as well as softcopy tools. Using this collection, the customer has easy access to all the Security Server RACF-related information without handling individual sets of documents and libraries on many CD-ROMs.

The *z/OS Version 1 Release 6 and Software Products DVD Collection (SK3T-4271)* includes softcopy tools, libraries for z/OS Version 1 Release 6 (the element and feature libraries), the libraries for multiple releases of z/OS software products, and selected IBM eServer zSeries Redbooks. Both BookManager and PDF formats, when available, are included on this single DVD. This comprehensive z/OS collection is essentially the *z/OS Version 1 Release 6 Collection (SK3T-4269)* and the *z/OS Software Products Collection (SK3T-4270)* combined with selected IBM Redbooks from the *IBM eServer zSeries Redbooks Collection (SK3T-7876)* and delivered on the higher-density DVD technology. The contents of the popular zFavorites for zSeries mini-CD is also included on the DVD collection. This collection requires a DVD drive that can read discs in DVD-9 (single-sided, dual-layer) format.

**Optional licensed publications:** There are no optional licensed hardcopy or softcopy publications available for ordering by feature numbers to include in the product package shipment. However, z/OS licensed publications are offered in softcopy format on a CD-ROM, which can be ordered separately from the product package, and on the Internet.

Licensed users can obtain the licensed documents for z/OS by purchasing the z/OS Licensed Product Library collection (LK3T-4307) using the normal IBM publications ordering methods. Users can also access the licensed documents free of charge on the Internet using the IBM Resource Link™ Web site. Access to these documents on IBM Resource Link requires a key code and an IBM Resource Link Web user ID and password. Information concerning the key code for the licensed publications is now available in the installation guide that is delivered with the ServerPac or SystemPac deliverable or in the Memo to User Extension (MTUX) with CBPDO. Information about ordering the licensed softcopy collection and accessing IBM Resource Link is provided on the following Web site

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## z/OS V1.5 features withdrawn

The following z/OS V1.5 features are to be withdrawn from marketing effective September 9, 2004:

z/OS V1.5 Feature description	z/OS V1.5 feature number
z/OS V1.5 Base	6392
z/OS V1.5 BDT FTF	6406
z/OS V1.5 BDT SNA NJE	6408
z/OS V1.5 BookManager Build	6349
z/OS V1.5 C/C++ without Debug	6362
z/OS V1.5 DFSMSdss,hsm	6386
z/OS V1.5 DFSMSrmm	6366
z/OS V1.5 DFSMSdss	6378
z/OS V1.5 DFSMStvs	6407
z/OS V1.5 DFSORT	6389
z/OS V1.5 GDDM-PGF	6364
z/OS V1.5 GDDM-REXX	6345
z/OS V1.5 HCM	6409
z/OS V1.5 HLASM Toolkit	6370
z/OS V1.5 Infoprint Server	6397
z/OS V1.5 JES3	6361
z/OS V1.5 RMF	6355
z/OS V1.5 SDSF	6336
z/OS V1.5 Security Server	6359
z/OS V1.5 Communications Server Security Level 3	6371
z/OS V1.5 IBM HTTP Server NA Secure	6402
z/OS V1.5 z/OS Security Level 3	6410
z/OS V1.5 Base Source Code — 3480	6380
z/OS V1.5 Base Source Code — 4mm	6376
z/OS V1.5 Base Source Code — JPN — 3480	6354
z/OS V1.5 Base Source Code — JPN — 4mm	6403
z/OS V1.5 Security Server Source Code — 3480	6357
z/OS V1.5 Security Server Source Code — 4mm	6338
z/OS V1.5 SK3T-4272 z/OS Security Server RACF Collection	8018
z/OS V1.5 SK3T-4270 z/OS Software Products Collection	8015
z/OS V1.5 SK3T-7876 IBM z/OS V1 zSeries Redbook Collection	8016
z/OS V1.5 SK3T-4271 z/OS V1R5 and Software Products DVD Collection	8017
z/OS V1.5 Brazilian Port Base (PTB)	6358
z/OS V1.5 Braz Port BookMgr Build	6401
z/OS V1.5 Can Fren Base (FRC)	6375
z/OS V1.5 Can Fren BookMgr Build	6369
z/OS V1.5 Danish Base (DAN)	6340
z/OS V1.5 Dutch Base (NLD)	6341
z/OS V1.5 French Base (FRA)	6398
z/OS V1.5 French BookMgr Build	6384
z/OS V1.5 German Base (DEU)	6335
z/OS V1.5 German BookMgr Build	6373
z/OS V1.5 Italian Base (ITA)	6351
z/OS V1.5 JPN Base	6381
z/OS V1.5 JPN C/C++ Without Debug	6367
z/OS V1.5 JPN DFSORT	6377
z/OS V1.5 JPN Infoprint Server	6348
z/OS V1.5 JPN RMF	6388
z/OS V1.5 JPN SDSF	6368
z/OS V1.5 JPN Security Server	6405
z/OS V1.5 Upper Case English Base (ENP)	6337
z/OS V1.5 Korean Base (KOR)	6390
z/OS V1.5 Norw Base (NOR)	6404

## z/OS V1.5 Feature description

z/OS V1.5 Spanish Base (ESP)	6344
z/OS V1.5 Spanish BookMgr Build	6363
z/OS V1.5 Swedish Base (SVE)	6346
z/OS V1.5 Swiss German Base (DES)	6365
z/OS V1.5 Simplified Chinese Base (CHS)	6399
z/OS V1.5 Traditional Chinese Base (CHT)	6400

### Customized offerings

Most product media is shipped only via customized offerings (that is, CBPDO, ServerPac, SystemPac). Non-customized items (CD-ROMs, Hardcopy Publications) will continue to be shipped via the stand-alone product.

**IBM operational support services — SoftwareXcel:** Yes. Current charges are unaffected by this announcement.

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