



IBM z/OS V1.7 delivers advances in business resiliency and security

Overview

z/OS® and IBM System z9 and IBM @server® zSeries® servers provide an advanced combination of security, availability, and resiliency for the most demanding business applications. The intelligent workload management capabilities of z/OS are designed to deliver responsiveness for today's business demands, allowing z/OS to be the integration point for many of your business processes.

z/OS V1.7 provides advances in business resiliency and security with extensions to GDPS™ for system recovery and improvements in RACF® interoperability. You might see a reduction in the need for IPLs with dynamic service activation for z/OS UNIX® System Services. To help you build and extend your z/OS applications, z/OS delivers XL C/C++ with the C compiler designed to support the latest ISO C 1999 standard, also known as C99.

z/OS also adds support for Transport Layer Security (TLS) that is designed to be transparent to applications. To help simplify systems management, IBM Health Checker for z/OS is now a base component of z/OS, providing an integrated tool for checking on best practices for configuration values.

z/OS management capabilities are more robust. Additional checks are available and SDSF support helps simplify the management of the checks. The dynamic capabilities of z/OS are also extended with the TCP/IP Sysplex Load Balancing Advisor for better interaction with network-based load balancers and integration between Sysplex Distributor and Workload Manager. In addition, in first quarter 2006, z/OS V1.7 is planned to support simplified network management with JES2 NJE.

IBM intends to deliver a software-based file encryption solution for z/OS that leverages the existing z/OS key management capabilities provided within the Integrated Cryptographic Services Facility (ICSF) in 2005. More information will be provided at a later date.

Key prerequisites

z/OS V1.7 runs on the following IBM System z9 and zSeries servers or equivalents:

- z9-109
- z900
- z990
- z800
- z890

For a complete description of z/OS V1.7 software prerequisites, refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504).

Planned availability date

September 30, 2005

At a glance

z/OS V1.7 is designed to offer:

- Exploitation of select features for the new IBM System z9 109 (z9-109) with increased scale for large I/O configurations and large single images
- Simplified z/OS management with integrated IBM Health Checker for z/OS and additional health checks
- Advances in network security and cryptography
- Further performance optimization for TCP/IP networking with better interaction with network-based load balancers
- Simplified application integration and development with improvements in z/OS UNIX System Services, zSeries File System (zFS), and XL C/C++, and more flexible ways to specify Language Environment® options

IBM's world-class software support service for z/OS is available 24 hours a day, every day.

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Reference: LE001

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Description

Following is an overview of z/OS V1.7. Some of the functions described in this announcement were previously announced in Software Announcement 204-180, dated August 10, 2004, and Software Announcement 205-034, dated February 15, 2005.

For a complete view of z/OS V1.7, refer to *z/OS V1R7.0 Introduction and Release Guide* (GA22-7502), available by visiting

http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2A117

Support for System z9 servers

The new System z9 109, designed to provide systems leadership in an integrated heterogeneous infrastructure, is supported by z/OS V1.4 and above. The powerful combination of z/OS V1.7 and z9-109 can provide significantly increased I/O addressability and bandwidth, designed to help improve availability, performance, cryptography, and problem diagnosis while providing more options for network connectivity.

These new functions include:

- **Multiple subchannel sets support:** Provides a second set of subchannels for defining Parallel Access Volume (PAV) aliases. This new function can help provide relief from the 64K device limit by allowing PAV aliases to be defined without making device numbers unavailable for defining additional devices.
- **Support for additional subchannels on the z9-109:** The z9-109 makes an additional 768 subchannels available, making it possible to define up to 65,280 devices for each z/OS LPAR.
- **Improved FICON™ error recovery**
- **Display support for remote node ID (RNID) for FICON-attached devices**
- **Wild branch diagnosis improvement**
- **MIDAW (modified indirect addressing words) support:** Indirect Addressing (IDA) provides virtual storage access for channel programs. The z9-109 implements a new function for channel programming, modified indirect addressing words (MIDAWs). MIDAWs can be used to move data over FICON and ESCON® channels.

For FICON channels, this support can provide substantially better response time while increasing overall channel bandwidth. MIDAWs exploitation by z/OS is expected to improve performance for some DB2® table scan, DB2 sequential prefetch, BSAM, and extended-format data set operations by reducing system overhead for I/O requests on the z9-109, with no application changes.
- **Cryptographic support:** Integrated Cryptographic Service Facility (ICSF) supports the cryptographic functional updates provided by the z9-109.
- **OSA channel data link control (CDLC) support:** OSA CDLC support is provided for z/OS and the IBM Communication Controller for Linux™ on zSeries with APARs OA11238 and OA07875. This support is designed to allow z/OS to continue to communicate with an external network using CDLC architecture, providing an alternative to a SNA network.

- **HiperSockets interfaces support for IPv6:** This enhancement allows IPv6 communications between LPARs for z/OS TCP/IP stacks and Linux on System z9 TCP/IP stacks. It also expands IPv6 connectivity options between TCP/IP stacks in a sysplex when DYAN ICXCF is configured.

For more information about z/OS V1.7 support for the z9-109, refer to the **Support for IBM System z9 servers** topic in **Additional information**.

Scalability

z/OS continues to support robust vertical and horizontal growth. z/OS V1.7 leverages the new functions of the z9-109 and is designed to provide improved overall performance, increased I/O device addressability, increased I/O bandwidth, improved cryptographic performance when the Crypto Express2 feature is configured for Secure Sockets Layer (SSL) in accelerator mode, and a new time synchronization feature, Server Time Protocol (STP), which is being previewed in this announcement.

z/OS V1.7 also extends system limits in many areas, including support for 32-way single-system images, larger sequential data sets, support for additional VSAM data set extents, more Cross System Extended Services® (XES) locks per lock structure connector, 64-bit VSAM record-level sharing (RLS) support, and an increased number of DASD-only log streams. These improvements can help you support larger workloads for today's On Demand Business requirements.

In addition, z/OS V1.7 supports:

- Up to 16,384 DASDONLY log streams in System Logger
- Program Management Binder compression for program objects
- VARY command processing improvements designed to reduce serialization contention
- Hardware Configuration Definition (HCD) support for larger I/O configurations
- DFSMSdss™ virtual storage constraint relief

For more information about z/OS V1.7 scalability improvements, refer to the **Scalability** topic in **Additional information**.

Application integration

IBM continues to embrace open and industry standards to support your requirements for application portability. z/OS V1.7 provides C language support designed to meet the ISO C99 standard, an `ld` utility in the Program Management Binder, additional open APIs and commonly-used device files in z/OS UNIX System Services, support for IEEE C fork() processing, and several dbx debugging enhancements. In addition, C/C++ support for authorized programs is provided, along with Program Management Binder and ISPF enhancements, and more flexible ways to specify Language Environment options.

z/OS V1.7 also supports the Common Information Model (CIM), part of the Web-Based Enterprise Management (WBEM) initiative defined by the Distributed Management Task Force (DMTF).

These extensions and new functions can help improve application development and portability, ease of use, and multiplatform systems management.

In addition:

- z/OS V1.7 provides support for hexadecimal floating point functions in AMODE 64 C/C++ applications.
- Enhanced C++ XML Parser and C++ XSLT Processor support is provided by IBM XML Toolkit for z/OS, V1.8 (5655-J51).

For more information about the application integration extensions and improvements in z/OS V1.7, refer to the **Application integration** topic in **Additional information**.

Security

Continued enhancements to security extend z/OS's leadership. In z/OS V1.7, significant improvements are made to RACF password processing, network security, auditability, public key infrastructure (PKI) services for digital certificate support, IPSecurity, and cryptography. Additionally, support is added for Transport Layer Security (TLS) that is designed to be application transparent. These functions can help provide better user authentication and help you keep your data more secure in today's challenging regulatory environment.

Also in z/OS V1.7:

- Integrated Security Services Enterprise Identity Mapping improvements
- RACF PassTicket extensions
- Advanced Encryption Standard (AES) support for TLS/SSL applications

For more information about z/OS V1.7 security improvements, refer to the **Security** topic in **Additional information**.

Availability

The z/OS operating system, running on System z9 and zSeries servers, continues to help address requirements for uninterrupted application availability. In z/OS V1.7, support is provided that can help allow concurrent activation of service for z/OS UNIX System Services, dynamic virtual IP address (DVIPA) reclamation, improved console message processing, Extended Remote Copy (XRC+), and improved recovery for JES2, RACF, FICON, and Unicode. These improvements can help you provide the kind of around-the-clock availability needed by today's On Demand Business applications.

In addition, z/OS V1.7 provides:

- The Integrated Catalog Forward Recovery Utility (formerly 5798-DXQ), now incorporated into z/OS
- Remote Node ID (RNID) support for FICON-attached devices on the z9-109
- Support for forced log stream disconnection and deletion

For more information about z/OS V1.7 availability improvements, refer to the **Availability** topic in **Additional information**.

Self-optimization capabilities

z/OS continues to offer outstanding overall resource utilization capabilities and policy-based workload management. In z/OS V1.7, the Sysplex Distributor's network load balancing decisions are improved with the use of more granular Workload Manager (WLM) recommendations to help balance workload across a sysplex.

EWLM and Automatic Response Measurement (ARM) agent integration can provide a foundation for centralized heterogeneous platform management. In addition, network load balancing decisions can be driven into the network routing appliance layer with the Load Balancing Advisor. These new and extended functions, together with the other workload management capabilities of z/OS, can help you fully utilize your zSeries processors while also helping to provide the response times to meet your business objectives.

For details concerning self-optimization improvements for z/OS V1.7, refer to the **Self-optimization capabilities** topic in **Additional information**.

Networking

z/OS V1.7 Communications Server continues to provide innovative solutions for enterprise network communications. New security solutions can help secure network communications transparently to the application, along with new workload balancing functions that can help optimize server selection and interoperate with external load balancers.

New functions for IPv6 reinforce IBM's commitment to the next generation of IP networks, and enhancements for SNA/EE, CICS® Sockets, and key TCP/IP applications provide new functions that can help improve usability and performance.

z/OS V1.7 provides:

- JES2 support for NJE via TCP/IP (planned for first quarter 2006)
- z/OS Network File System (NFS) support for new standards
- Support for OSA-Express2 large send
- FTP enhancements
- IPv6 Advanced Socket API
- FTP client C/C++ API support and FTP level of confidence reporting

For more information about z/OS V1.7 networking improvements, refer to the **Networking** topic in **Additional information**.

Ease of use

IBM continues to improve z/OS's ease of use. In z/OS V1.7, the innovative IBM Health Checker for z/OS, which is designed to help you find configuration problems before they affect application availability or performance, is now a base function of the operating system. Many additional system checks are provided, and support for displaying and modifying health checks is added to SDSF.

In addition, there are usability enhancements for specifying options in Language Environment; for managing direct access volume space with RMF™; in the z/OS UNIX System Services shell, ISPF, HCD, and HCM; and in z/OS support for Unicode. These improvements can help improve system programmer productivity and help reduce deployment time.

Also, z/OS V1.7 supports:

- Dynamic Host Configuration Protocol (DHCP) for the Network File System
- OAM volume management Stage 2

- A new operator command for changing SMS volume status
- Library Server enhancements

For more information about z/OS V1.7 ease-of-use improvements, refer to the **Ease of use** topic in **Additional information**.

24 x 7 world-class service

IBM's world-class software support service for z/OS is available 24 hours a day, every day. Provided by the IBM Support Center, z/OS service is backed by hundreds of product support specialists, product-level experts, and component-level experts working in many locations around the world to provide electronic and telephone support. z/OS support specialists have years of experience in solving your problems, and they engage design and development teams when needed. They also provide important inputs to design, development, and test teams in z/OS and other product groups to help improve z/OS's world-class availability, serviceability, and diagnosis.

IBM can also leverage the in-depth technical expertise of its Dallas and Washington Systems Centers and the resources of the Benchmarking, Briefing, and Design centers. You can also use IBM's Web-accessible and searchable knowledge bases, Systems Center books and white papers, online product documentation, ResourceLink, and searchable online problem databases.

The level of support is complemented by key IBM service and delivery strategies. For example, you can use the powerful combination of Enhanced HOLDDATA and SMP/E's new Internet Service Retrieval function along with a batch scheduling program. You can use this function to automate the acquisition of service data and service and provide reports that can help you with potential problems while helping make sure you have the latest available IBM service on hand. In addition, electronic planning (PSP) information is available on the Web to help you plan to use new hardware and software.

Product positioning

The many enhancements in z/OS V1.7 continue to position z/OS as the IBM flagship mainframe operating system. These innovations provide proof points of the IBM commitment to the mainframe, as defined in the Mainframe Charter. Designed and developed in harmony with the System z9 and zSeries servers and key IBM middleware (such as DB2, IMS™, CICS, and WebSphere® Application Server) z/OS provides the qualities of service that thousands of customers rely upon for their mission-critical business applications.

As the "secure vault"¹ for critical business data, z/OS is a logical choice for the integration of new applications with core mainframe applications. The z/OS qualities of service can be extended to these new applications.

z/OS can also provide the management capabilities to handle an increased scale as the user base and business processes expand. With robust security management provided by RACF and highly secure and available TCP/IP networking support, z/OS can be your integration point for critical business applications.

Notable change: Starting with z/OS V1.7 and z/OS.e V1.7, the Text Search function (FMID HIMN230) previously provided via Web download for use by DB2 Universal Database® (UDB) Text Extender for z/OS, V7 and V8, is no longer available as a z/OS Web deliverable. Instead, the Text Search function is provided by Web download from the DB2 UDB Text Extender Web site

<http://www.ibm.com/software/data/db2/extenders/text/te390/>

¹ Secure vault represents the role and ability of System z9 and zSeries to provide a highly resilient and security-rich, enterprise-wide environment for enterprise data and transactions.

Statements of direction

IBM plans to take the following action effective in 2005:

IBM intends to provide a new user interface for z/OS management that is planned to help the new generation of Information Technology workers by automating, eliminating, and simplifying many z/OS management tasks. The first phase of the new user interface (planned to be provided in a separate product) is planned to provide real-time health check information executed by the IBM Health Checker for z/OS and configuration status information for z/OS systems and sysplex resources.

The new interface contains built-in automation and expert advice capabilities that provide detailed contextual information on alerts and corrective actions. This new interface is planned to be available in fourth quarter 2005.

IBM plans to take the following actions in the future:

- Scale up and scale out: z/OS V1.7 currently allows you to scale up in a single logical partition from 1 processor to 32 with good scalability² and to scale out in a Parallel Sysplex® for higher availability. IBM plans to support more than 32 processors in a single logical partition on the IBM System z9 109 (z9-109) in the future.

² This is based on internal IBM lab measurements.

- IBM plans to announce a version of New Application License Charges (NALC) intended to help improve the price performance of z/OS in certain new workload environments by delivering subcapacity pricing. The offering and associated terms are targeted for availability in the second half 2006.
- IBM plans to introduce a new system component called z/OS XML System Services (z/OS XML) in a future release of z/OS. This component will be designed to provide an optimized set of services for parsing XML documents. It is expected to be of use to IBM, ISV, and customer middleware and applications having high performance or unique environmental XML parsing requirements, such as the ability to run in cross-memory and service request block (SRB) modes. Initial support is planned to provide an assembler language interface. Later, IBM plans to add C/C++ high-level language support.
- IBM intends to provide a VSAM Java™ database connectivity (JDBC) Connector in the future, not in 2005 as previously stated in Software Announcement 204-180, dated August 10, 2004. 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 are expected to be able to access VSAM data, at the same time as other applications, when deployed in WebSphere, DB2, and z/OS UNIX Systems Services environments. When used with the optional DFSMSstvs (Transactional VSAM Services) feature, the VSAM JDBC Connector is intended to allow WebSphere applications to participate in coordinated commit processing.

- A new function in SMP/E, Internet Service Retrieval, is intended to simplify the acquisition of z/OS service. This function, which supplements existing service options in ShopzSeries, is planned to be available in September 2005. For more information about this new function, refer to the description of the SMP/E Internet Service Retrieval function in the **SMP/E enhancements** topic in **Additional information**.

Internet Service Retrieval and ShopzSeries now offer extensive options for service acquisition and delivery. To reduce the number of ordering interfaces and help assure timely delivery of new function, some older options for service delivery are being simplified or discontinued:

- Effective January 15, 2006, as previously announced in Software Announcement 205-034, dated February 15, 2005, the S/390® Service Update Facility (SUF) will be discontinued.
- Effective March 2006, new ESO and CBPDO (5751-CS8 and 5775-MVS™) physical delivery subscriptions will not be accepted.
- Effective June 2006, CBPDO product orders will include service only for the products included in the order. Formerly, CBPDO product orders included service for other products licensed under the same customer number within the same SREL. To get service for other products, you can use SMP/E Internet Service Retrieval, ShopzSeries, or a fee service offering.
- Effective June 2006, Service-Only CBPDO (5751-CS3) orders will no longer be accepted. An improved option for ordering service by SREL, or for all licensed products under the same customer number, will continue to be supported in ShopzSeries. You can also get service based on what you have installed using SMP/E Internet Service Retrieval, ShopzSeries, or selected fee offerings. Note that CBPDO product orders are not affected by this change.
- Effective September 2006, existing ESO and CBPDO physical delivery subscriptions will be discontinued. You can use a job scheduling system and SMP/E Internet Service Retrieval to get service at any interval you find convenient, or use the Internet delivery subscription option available in ShopzSeries.

IBM recommends that you begin to use SMP/E Internet Service Retrieval, ShopzSeries, or one of these worldwide fee offerings before the above changes take effect:

- U.S. — SoftwareXcel, Resolve
- Europe/Middle East/Africa — Enhanced Technical Support
- Canada — SupportLine
- Latin America — SupportLine
- Asia Pacific/South — SupportLine

For more information, visit the ShopzSeries Web site at

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

- On February 15, 2005, IBM announced IBM Communication Controller for Linux on zSeries V1.1. This product is intended to provide a migration path for customers using SNA applications to communicate with business partners. In the next release of IBM Communication Controller for Linux on zSeries, IBM intends to provide enhancements in network connectivity such as channel data link control (CDLC) using OSA-Express2 OSN (OSA for NCP), data-link switching (DLSw), and an open interface for X.25 (NPSI). For more information on this product, refer to

<http://www.ibm.com/software/network/ccl>

- Support for the following plug-ins for msys for Setup will be withdrawn in the release following z/OS V1.7: TCP/IP Services, z/OS UNIX System Services, Language Environment, Parallel Sysplex, ISPF, and RMF. When this support is withdrawn, you will not be able to use msys for Setup for function enablement, setup, or configuration of these areas of z/OS.

The DB2 V8 msys for Setup plug-in is unaffected and remains available for enablement, setup, and configuration of DB2. The TCP/IP plug-in will continue to be available for download via the Web and will no longer require msys for Setup. IBM intends to continue to deliver improvements to help with z/OS setup and configuration in the future.

- z/OS V1.7 is planned to be the last release to support the z/OS msys for Operations element. It is IBM's intent to remove the z/OS msys for Operations element from the release following z/OS V1.7. IBM plans to transition many of the current msys for Operations functions to a new user interface and infrastructure in a future release of z/OS.

For more information, and for all 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

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.

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Reference information

- Hardware Announcement 105-241, dated July 26, 2005 (IBM System z9 109)
- Software Announcement 205-170, dated July 26, 2005 (IBM SMP/E for z/OS V3.4)
- Software Announcement 205-034, dated February 15, 2005 (Preview: IBM z/OS V1.7 and z/OS.e V1.7: World-class computing for On Demand Business)
- Software Announcement 204-180, dated August 10, 2004 (IBM z/OS V1.6: Integrating new applications and Preview: z/OS V1.7)

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

BP Attachment for Announcement Letter 205-167

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=205-167>

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IBM US Announcement Supplemental Information

July 27, 2005

Additional information

Support for IBM System z9 servers

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Note: For information about the software requirements for the z9-109 server, refer to

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

These new functions include:

- **Multiple subchannel sets support:** As systems and the corresponding need to increase the number of DASD volumes grow, there has been more pressure placed on the 64 K device number, or unit control block (UCB) limit. The new multiple subchannel set support on the z9-109 gives each single-system image the use of a second set of subchannels. z/OS V1.7 supports the use of a second subchannel set for defining Parallel Access Volumes (PAV) aliases on the z9-109, which provides an additional 64K subchannels.

Moving PAV alias definitions to a second subchannel set can allow more devices to be defined. This new function provides relief from the 64K device limit by allowing PAV aliases to be defined without making device numbers unavailable for defining additional devices. EREP support is also provided to include the subchannel number for PAV alias devices.

- **Support for additional subchannels on the z9-109:** The z9-109 makes additional subchannels available. Previous servers reserved 1024 subchannels, making it possible to define a maximum of 64,512 devices. The z9-109 makes an additional 768 subchannels available, making it possible to define up to 65,280 devices for each z/OS LPAR.
- **Improved FICON™ error recovery:** Some fabric problems can cause FICON links to fail and recover many times in a short period. This can cause system recovery actions to be repeatedly driven while substantially reducing throughput for those links.

z9-109 functions combined with z/OS V1.7 I/O recovery processing improvements are designed to make it possible for the system to detect these conditions and keep an affected path offline until operator action is taken. This is expected to help limit the performance impacts of these failures.

- **Display support for Remote Node ID (RNID) for FICON-attached devices:** In a fiber optic environment, the resolution of cabling problems can be a challenge, particularly when devices are located some distance from the processors to which they are attached. In z/OS V1.7, the output of the DISPLAY MATRIX operator command (D M=DEV) includes RNIDs to help make it easier to diagnose these problems by making additional information, such as a device's serial number, available.

- **Wild branch diagnosis improvement:** A new hardware function stores the address of the last successful branch instruction on the z9-109. z/OS V1.7 is designed to include this information in dumps, which can make it easier to find a program that branches to an unexpected location. This can help decrease problem determination time, improve the quality of failure diagnosis, and enhance the probability of first failure fault isolation.

- **MIDAW (modified indirect addressing words) support:** Indirect Addressing (IDA) provides virtual storage access for channel programs. The z9-109 implements a new function for channel programming, modified indirect addressing words (MIDAWs). MIDAWs can be used to move data over FICON and ESCON® channels.

For FICON channels, this support can provide substantially better response time while increasing overall channel bandwidth. MIDAWs exploitation by z/OS is expected to improve performance for some DB2® table scan, DB2 sequential prefetch, BSAM, and extended-format data set operations by reducing system overhead for I/O requests on the z9-109, with no application changes.

- **Cryptographic support:** Integrated Cryptographic Service Facility (ICSF) supports the cryptographic functional updates provided by the z9-109, including:
 - Crypto Express2 fast path operations (the acceleration mode for SSL/TLS operations and digital certificate operations), which were previously done in the PCICA card. This allows customers to migrate from PCICA to the X Crypto Express2.
 - Support for clear key AES and SHA-256 cryptographic algorithms.

These functions are designed to allow customers to exploit new high-capacity hardware and a more robust development environment, in order to help grow existing applications and deploy new applications.

- **OSA CDLC support:** OSA CDLC support is provided for z/OS and the IBM Communication Controller for Linux™ on zSeries® with APARs OA11238 and OA07875. This support is designed to allow z/OS to continue to communicate with an external network using channel data link control (CDLC) architecture, providing an alternative to a SNA network.

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>.

- **RMF™ support for more than 16 processors — Report adaptation:** RMF support for more than 16 processors in a z/OS image was made available in z/OS V1.6. In z/OS V1.7, improved support is provided for CPU activity and system address space analysis.
- **TCP/IP connectivity enhancements:** HiperSockets interfaces now support IPv6. This enhancement allows IPv6 communications between LPARs for z/OS TCP/IP stacks and Linux for zSeries TCP/IP stacks. It also expands IPv6 connectivity options between TCP/IP stacks in a sysplex when DYNAMICXCF is configured.

Scalability

z/OS continues to support robust vertical and horizontal growth. z/OS V1.7 leverages the new functions of the z9-109 and is designed to provide improved overall performance, increased I/O device addressability, increased I/O bandwidth, improved cryptographic performance when the Crypto Express2 feature is configured for Secure Sockets Layer (SSL) in accelerator mode, and a new time synchronization feature, Server Time Protocol (STP), which is being previewed in this announcement.

z/OS V1.7 also extends system limits in many areas, including support for 32-way single-system images, larger sequential data sets, support for additional VSAM data set extents, more Cross System Extended Services® (XES) locks per lock structure connector, 64-bit VSAM record-level sharing (RLS) support, and an increased number of DASD-only log streams. These improvements can help you support larger workloads for today's On Demand Business requirements.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of these previously announced functions:

- Up to 32 processors in a single image
- 64-bit VSAM record-level sharing (RLS)
- HCD support for larger I/O configurations
- A larger DFSMSHsm™ tape table of contents (TTOC)
- More XES locks per lock structure connector
- DFSMSdss™ virtual storage constraint relief

In addition, z/OS V1.7 provides:

- **Support for large-format sequential data sets:** Support is provided for nonextended-format sequential data sets larger than 64K tracks. This is in addition to previously provided support for extended-format data sets larger than 64K tracks. ISPF, SADMP, IPCS, AMASPZAP, DFSMSdss, and DFSORT™ support the new maximum data set size. JES2 and JES3 support using these larger data sets for spool. In addition, DFSMSHsm and DFSMSrmm™ now allow using them for journal data sets, which can allow more processing between CDS backups.
- **More than 1024 connections to DASDONLY log streams:** The limit on the number of DASD-only log streams supported by System Logger on a single system has been raised from 1,024 to 16,384. This can allow you to move more work to an image without encountering Logger resource constraints.
- **Binder compression of program objects:** The Program Management Binder can now compress program objects stored in PDSEs and z/OS UNIX® System Services file systems such as zFS and HFS to reduce their size.

- **IFASMFDP buffers above the 16 MB line:** The SMF dump program, IFASMFDP, is changed to use I/O buffers above the 16 MB line. This can allow the use of more output DD statements (for example, for splitting SMF records used for various clients) and an increased number of buffers. This can help improve the utility and performance of the SMF dump program.
- **VARY command processing improvements:** VARY command processing is changed and is intended to reduce the duration of enqueues for the SYSIEFSD Q4 resource. This can help improve the performance of sysplex-wide VARY command processing for large numbers of devices and can help prevent apparent hang conditions. Also, VARY OFFLINE processing is now done in parallel, which is designed to decrease elapsed time for commands used to change the status of many devices.
- **Protecting real storage below 16 MB and improving paging throughput:** Storage management improvements are designed to help conserve real storage below the 16 MB line and to handle page faults more efficiently during periods of heavy paging. These changes can help prevent real storage shortages below 16 MB as workloads grow, and can help make the system more responsive when paging rates are high.
- **Stand-alone dump (SADMP) improvements:** Standalone dump (SADMP) is improved to accommodate the larger amount of storage being dumped on today's larger systems. Better I/O buffering helps to make SADMP take less time, and the order in which data is dumped is changed to capture data in priority order.
- **Generalized Trace Facility (GTF) and Component Trace (CTRACE) external writer enhancements:** The GTF external writer and CTRACE support writing to VSAM linear data sets, allowing for striping, wrapping support, and recording very large traces. This is expected to be especially helpful for Communications Server diagnosis, which relies heavily on GTF.
- **Increased summary dump buffer size:** The summary dump buffer size is increased to accommodate the larger amounts of summary dump data required on today's systems. This is designed to help preserve enough data at the time the dump is initiated to include an accurate snapshot, while not requiring the system to be set nondispatchable while the dump is being taken; in turn, this can help improve first-failure data capture.

Server Time Protocol (STP) preview: IBM plans to make available a new time synchronization feature, Server Time Protocol (STP), which is designed to provide the capability for multiple System z9 and zSeries servers to maintain time synchronization with each other. STP is planned to be the follow-on to the Sysplex Timer® (9037-002). The Sysplex Timer and STP are designed to allow events occurring in different System z9, zSeries, and S/390® servers to be properly sequenced in time.

Note that IBM intends to withdraw the Sysplex Timer Model 2 (9037-002) from marketing in 2006. For more information, refer to Hardware Announcement 105-241, dated July 26, 2005, (IBM System z9 109).

STP is designed for servers that have been configured to be in a Parallel Sysplex® or a sysplex (without a coupling facility), as well as servers that are not in a sysplex, but that need to be time synchronized. STP is designed to allow timing information to be sent between servers and coupling facilities (CFs) over InterSystem Channel-3 (ISC-3) links configured in peer mode, Integrated Cluster

Bus-3 (ICB-3) links, or Integrated Cluster Bus-4 (ICB-4) links.

STP is designed to:

- Allow clock synchronization for z9-109, z990, and z890 servers and CFs without requiring the Sysplex Timer
- Support a multisite timing network of up to 100 km (62 miles) over fiber optic cabling, thus allowing a Parallel Sysplex to span these distances
- Potentially reduce the Cross-Site® connectivity required for a multisite Parallel Sysplex
- Coexist with an ETR network
- Allow use of dial-out time services to set the time to an international time standard (such as Coordinated Universal Time (UTC)) and adjust to UTC on a periodic basis
- Allow setting of local time parameters, such as time zone and daylight savings time
- Allow automatic updates of daylight savings time

STP is planned to be available as a feature on z9-109, z990, and z890, and be supported by z/OS V1.7 (PTFs will be required to enable STP support).

Implementation Assistance Program (IAP): IBM plans to make available an IAP to allow you to accelerate the adoption of STP with IBM's assistance. The assistance being planned for this program includes consultation, the review of your migration plans, and technical support. The IAP is planned to begin in October 2005 and be made available through 2006.

Application integration

IBM continues to embrace open and industry standards to support your requirements for application portability. z/OS V1.7 provides C support for the ISO C99 standard, an `ld` utility in the Program Management Binder, additional open APIs and commonly-used device files in z/OS UNIX System Services, support for IEEE C fork() processing, and several `dbx` debugging enhancements. In addition, C/C++ support for authorized programs is provided, along with Program Management Binder and ISPF enhancements, and more flexible ways to specify Language Environment® options.

z/OS V1.7 also supports the Common Information Model (CIM), part of the Web-Based Enterprise Management (WBEM) initiative defined by the Distributed Management Task Force (DMTF).

These extensions and new functions can help improve application development and portability, ease of use, and multiplatform systems management.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of this previously announced function: Hexadecimal floating point functions in AMODE 64 C/C++ applications.

In addition, z/OS V1.7 provides:

- **Common Information Model (CIM) and Web-Based Enterprise Management (WBEM):** z/OS V1.7 supports the Common Information Model (CIM), part of the Web-Based Enterprise Management (WBEM) initiative defined by the Distributed Management Task Force (DMTF). The CIM data model describes and accesses systems management data in heterogeneous environments. It can allow applications to measure

system resources in a network with different operating systems and hardware.

To enable z/OS to participate in cross-platform management from a common point of control, a subset of z/OS resources and metrics is mapped into the CIM standard data model to allow its use for system management functions. In the release following z/OS V1.7, IBM plans to make the CIM services suitable for applications that require high request rate processing.

- **XL C/C++:** As of z/OS V1.7, the z/OS C/C++ compiler has been renamed to z/OS XL C/C++. The XL C and XL C++ compilers that are part of the C/C++ without Debug Tool optional priced feature of z/OS allow you to write code that follows the current ISO/IEC International Standards.

In z/OS V1.7, the XL C compiler is designed to support the latest ISO C 1999 (International Standard ISO/IEC 9899:1999) standard, also known as C99. The C99 standard offers a number of additional language functions to promote portability of C programs. The `c99` command is now available, through the `xlcc` utility, to invoke the compiler.

The z/OS XL C++ compiler is designed to support the International Standard for the Programming languages — C++ (ISO/IEC 14882:2003) and Programming languages — C++ (ISO/IEC 14882:1998).

- The `LANGLVL` compiler option and `pragma` are enhanced to support the available language levels that you can use to compile your C and C++ code. Suboptions are designed to provide conformance to the C99 standard, extended conformance to C99, conformance to the previous C89 standard, and extended conformance to C89. XL C/C++ offers you the flexibility to compile your code using the language level that meets your needs and is designed to improve usability and portability of programs across different platforms.

Note: The OS/390® V2.10 level of the C/C++ compiler is removed in z/OS V1.7.

- **ld utility:** The Binder provides an `ld` utility with syntax similar to AIX's `ld`, with defaults that are general (not specific to Language Environment or C/C++) and with a mechanism for changing the defaults.
- **64-bit relative-immediate instructions (BRAS, BRASL, LARL):** The Binder adds support for binding modules that include 64-bit relative-immediate instructions (BRAS, BRASL, LARL), which use external symbols in their operands. The assembler added support for the BRAS, BRASL, and LARL instructions in z/OS V1.6. With z/OS V1.6, you could write and assemble, but not bind or run, programs using these instructions. With z/OS V1.7, you can also bind and run such programs.
- **ISPF enhancements:**
 - Tracing support is added for file tailoring skeletons and for panels.
 - ISPF now allows you to customize the default setting of the `STACK` option for the `LIBDEF` service. It sets a return code of 4 when the `STKADD` option is specified on a `LIBDEF` request and a `LIBDEF` has not been previously stacked. An advanced ISPF table editor can help you develop and debug applications that use ISPF tables.

- **Preinitialized environments for authorized programs:** Preinitialized environments for authorized programs provides a Language Environment facility that supports the execution of Language Environment-enabled C/C++ code in an authorized environment.
- **More flexible ways to specify Language Environment options:** Language Environment supports specification of run-time options in a file specified via DD statement. This makes it possible to specify Language Environment run-time options while avoiding the 100-character limit for the JCL PARM field. This change also provides a way to specify run-time options for IMS™ transactions when Library Routine Retention (LRR) is not used.

A new parmlib member, CEEPRMxx, can be used to specify Language Environment run-time options for the system. Operator commands are also provided that allow you to query and update the active run-time options for the system. This can simplify the management of Language Environment options, particularly in multisystem environments, and makes it possible to move Language Environment customization out of assembler language modules maintained using SMP/E usermods.

Specifying Language Environment options using CEEDOPT, CEECOPT and CELQDOPT modules will continue to be supported.

- **Additional open APIs for z/OS UNIX System Services:** Additional open APIs for z/OS UNIX System Services (z/OS UNIX) provide native interfaces that can help make it easier to port IBM's and other vendors' applications on z/OS. These interfaces are added:

- pthread_getconcurrency()
- pthread_setconcurrency()
- pthread_setcancelstate()
- pthread_setcanceltype()
- pthread_testcancel()
- pthread_key_delete()
- pthread_sigmask()
- sched_yield()
- strerror_r()
- unsetenv()

- **The fork() C function is enhanced to work in a multi-threaded environment:** According to IEEE Std 1003.1-2001, if a multi-threaded process calls fork(), the new process shall contain a replica of the calling thread and its entire address space, possibly including the states of mutexes and other resources. The intended use of fork() in a multi-threaded process is to run a new program, that is, invoke one of the exec() family of functions.

- **dbx scanner improvements:**

- **DBX — C++ typecast:** The dbx scanner now recognizes C++ typecast expressions that contain the C++ "::" operator, so that it is able to parse all valid C++ typecasts.
- **Multiple view context:** The dbx debugger supports contexts that contain multiple views that can be generated by the compiler/CDA.

- **DBX — plugin architecture:** In support of Java™ structural requirements, dbx has implemented the AIX® dbx_plugin.h architecture on z/OS dbx. This support includes:

- The ability to read the contents of memory
- Notification when the user has issued a plugin command
- A "pluginload" command that allows users to load plugin libraries
- A "plugin" command that allows users to give commands to a loaded plugin

- **Addition of /dev/random and /dev/zero:** The /dev/zero and /dev/random devices are added to z/OS UNIX System Services. /dev/zero is a character special device file. Data written to this file is discarded, and data read from this file is in the form of binary zeros. /dev/random is a device file that produces random bytes.
- **IBM XML Toolkit for z/OS, V1.8 (5655-J51)** continues to provide enhanced C++ XML Parser and C++ XSLT Processor support, as announced in Software Announcement 205-114, dated May 17, 2005. The toolkit provides the XML4C V5.5 XML parser and the XSLT4C V1.9 XSLT processor, based on corresponding Apache Software Foundation Xerces and Xalan technologies. IBM XML Toolkit for z/OS, V1.8 now includes versions of its libraries built using XPLINK, the extra performance linkage option.

For more information, visit

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

Security

Continued enhancements to security extend z/OS's leadership. In z/OS V1.7, significant improvements are made to RACF® password processing, network security, auditability, public key infrastructure (PKI) services for digital certificate support, IPSecurity, and cryptography. Additionally, support is added for Transport Layer Security (TLS) that is designed to be application transparent. These functions can help provide better user authentication and help you keep your data more secure in today's challenging regulatory environment.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of these previously announced functions:

- NAT Traversal for IPSecurity
- Transport Layer Security (TLS) designed to be application transparent
- CICS® Sockets and Application Transparent TLS
- Integrated IPSecurity

In addition, z/OS V1.7 provides:

- **TN3270E SSLV2 protocol default change** adds the ability to specify whether Secure Sockets Layer Version 2 (SSLV2) is to be used on TN3270E connections.
- **Security Server (RACF) improvements:** The SMF unload utility can optionally create XML documents from any security event logged by RACF and EIM in SMF. These XML documents can be rendered into alternate forms, such as Web pages, making the task of analyzing the security data by security

administrators and auditors more graphical and simpler.

- **Integrated Security Services Enterprise Identity Mapping (EIM) improvements:**

- Programs written in Java that exploit the EIM Java interfaces to map authenticated user IDs to a local z/OS identity can help improve security and auditability and reduce cost.
- Security events detected by the EIM C/C++ and Java interfaces are logged as SMF type 83 subtype 2 records, giving security administrators and auditors the data to enable tracking the use of the user ID mapping data stored in an EIM domain and to link the activities of a remote user to z/OS security events. The RACF SMF unload utility can be used to process the raw records into a tabular form or they can be included in an XML security event document.
- EIM interfaces no longer require the caller to be APF authorized. Instead, authorization checks are made so that a caller has the authority to access EIM configuration information.

- **ICSF 64-bit support:** Integrated Cryptographic Service Facility (ICSF), in conjunction with System SSL APAR OA08775 (PTF UA14062), provided support for cryptographic hardware to be used for 64-bit callers on zSeries processors. This support for hardware-based encryption and decryption functions, which can be called automatically from System SSL, WebSphere®, and Java, is expected to offer improved performance compared to the previously used software encryption functions.

This support was also available in the ICSF 64-bit Virtual Support for z/OS and z/OS.e V1.6 Web deliverable, which is being replaced by the Cryptographic Support for z/OS V1.6 and V1.7, and z/OS.e V1.6 and V1.7 Web deliverable planned to be available in September 2005.

- **ICSF clear keys in CKDS:** Integrated Cryptographic Service Facility (ICSF) supports storing clear keys in the cryptographic key data set (CKDS), and provides the ability to specify a user-friendly label for each key. This allows application data and files to be encrypted without a clear key value having to be entered for each call to the ICSF programming interface. This can be useful when a large number of files are to be encrypted using the same clear key.

- **PKI certificate extensions:** Additional digital signature algorithms industry standards for digital certificates:

- Certificates fulfilled by z/OS PKI Services or via the RACF RACDCERT command, support the use of the Digital Signature Algorithm (DSA). Certificate Authority (CA) keys can be DSA keys, and certificate requests can be signed with a DSA key.

- Enhanced certificate extensions:

- Certificate Revocation List (CRL) Distribution Point support is provided. The CRL is a list of certificates that are to be considered not valid. CRLs provide a way to verify the status of a certificate before it would expire. In addition to the Distinguished Name format, a Universal Resource Identifier (URI) format is added. With this new format, you can create certificates that contain the location of a CRL that is specified by the URI.

- Support for CA certificates is provided, with an Authority Revocation List (ARL) Distribution Point that can be created to check the status of the CA certificates.

- Subject Alternative Name: In addition to the existing formats, such as e-mail address and IP address, a free-form format called "other name" is added. With this format, you can specify any customized name types and their corresponding values that are included in the certificates fulfilled by PKI Services.

- A PKI Services Online Certificate Status Protocol (OCSP) responder that provides the function enables applications to check the status of the certificate issued by PKI Services dynamically. OCSP relieves the need for applications that frequently download certificate revocation lists to maintain the currency of the revocation list. The OCSP support is designed to be compliant RFC 2560, enabling applications to check the validity of a certificate potentially in a more timely fashion than cached CRLs provide.

- **RACF PassTicket extensions:** An extension to SAF callable services, this support enables the generation and evaluation of RACF PassTickets. RACF PassTickets are dynamically generated password substitutes that may be used instead of a RACF password for user authentication. This extension can be invoked from C language applications and problem state programs in both 31-bit and 64-bit addressing modes without using APF-authorized services.

This can help to make it easier to develop applications that may span multiple systems by providing a service on z/OS that can be utilized by the application to obtain and evaluate a RACF PassTicket for user authentication.

- **Improved security for cryptographic services:** Improvements to FTP, RACF, and z/OS UNIX are designed to provide better security for cryptographic material used by FTP in establishing SSL protected sessions. A copy of the FTP daemon's ACEE (z/OS security context) is delegated to the address space used to manage the connection to the FTP client. The FTP daemon's identity is then used in the access control decision to authorize the access to cryptographic material used in the SSL session and SSL session renegotiation. This can allow secure FTP clients to access cryptographic services without having to RACF permit each client/user to the cryptographic resource.

- **RACF FACILITY class profile for console():** z/OS UNIX allows users that are authorized to the new BPX.CONSOLE profile in the RACF FACILITY class to use authorized options of the _console() services (BPX1CCS and BPX4CCS) without having superuser authority. This allows you to further restrict the use of UID(0) and access to the BPX.SUPERUSER profile while allowing the use of these _console() functions in a more granular and controlled fashion.

- **Advanced Encryption Standard (AES) support for TLS/SSL applications:** The Advanced Encryption Standard (AES), proclaimed by the National Institute of Standards and Technology as the replacement for DES, is supported by the following Communications Server applications that use Transport Layer Security (TLCS) or Secure Socket Layer (SSL):

- TN3270 Server
- FTP client and server

- **FTP supports RACF-delegated profiles for protecting cryptographic resources:** The z/OS FTP server supports RACF-delegated general resource profiles defined for the CSFSERV and CSFKEYS classes to protect ICSF cryptographic hardware keys and resources. By designating these resource profiles as delegated, FTP users can log in using TLS security to your z/OS FTP server without permitting every FTP client user ID to sensitive ICSF general resource profiles.

Availability

The z/OS operating system, running on System z9 and zSeries servers, continues to help address requirements for uninterrupted application availability. In z/OS V1.7, support is provided that can help allow concurrent activation of service for z/OS UNIX System Services, dynamic virtual IP address (DVIPA) reclamation, improved console message processing, Extended Remote Copy (XRC+), and improved recovery for JES2, RACF, FICON, and Unicode. These improvements can help you provide the kind of around-the-clock availability needed by today's On Demand Business applications.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of these previously announced functions:

- z/OS UNIX dynamic service activation
- Additional JES2 checkpoint problem recovery
- Unicode control block problem recovery
- FROMKEY/TOKEY support in the REPRO MERGECAT function of IDCAMS

In addition, z/OS V1.7 provides:

- **Integrated Catalog Forward Recovery Utility incorporated into base z/OS:** The Integrated Catalog Forward Recovery Utility (ICFRU; 5798-DXQ) is now part of the z/OS base. ICFRU allows you to recreate a current copy of a catalog from a backup copy and certain SMF records, and can be used as the basis for a catalog recovery solution. If you need a more complete solution than that provided by ICFRU, IBM recommends Mainstar Catalog RecoveryPlus (5620-FGY).
- **Captured UCB overlay protection:** Captured UCB pages are read-only (page-protected) by default in z/OS V1.7. This can help improve availability by preventing programs from unintentionally overlaying UCBs. A new CAPTUCB PROTECT parameter in the IECIOSxx member of parmlib and a new CAPTUCB,PROTECT parameter on the SET IOS command allow you to specify whether captured UCBs will be protected. When captured UCBs are protected, programs that modify UCBs must obtain the UCB's SQA address via the IOSCAPU or IOSCAPF services to modify it; UCBs can no longer be modified using a captured view.
- **JES3 HyperSwap™ support:** JES3 is updated to better support GDPS™ HyperSwap for JES3-managed devices by handling multiple active DDR swaps. This is designed to extend HyperSwap support to JES3-managed volumes. This support is available on z/OS V1.4 and later releases. See APAR OA08510 for more information.
- **Force log stream disconnection and deletion:** System logger provides support for forcing a log stream connection from the logger and forcing deletion of a log stream definition from the LOGR CDS. You can delete a log stream that has outstanding failed-persistent connections. This can help minimize outages by allowing the logger to remove a damaged log stream from its inventory. In addition, it offers you a choice between removing resources and remapping to new definitions.
- **z/OS UNIX System Services display of AF_UNIX sockets / open connect:** A new console display, Display OMVS,Sockets, displays information about AF_UNIX sockets similar to the information that is displayed by "netstat" commands for AF_INET sockets. This will show who is using AF_UNIX sockets, with the job name, the socket's path name, the state of the socket, and the socket's id. AF_UNIX sockets are local sockets where both ends of a connected socket session are in the local system; there is no network connectivity involved.
- **Mounting file systems with SET OMVS:** SET OMVS=(xx) support is added for the MOUNT command, which can allow direct execution of a list of mount commands from the console. This enhances the capability to perform z/OS UNIX System Services systems operations from the console.
- **Additional JES2 checkpoint data corruption recovery:** JES2 is now designed to detect and correct certain additional kinds of checkpoint control block corruption when JES2 is restarted. This processing occurs with all types of start, including hot start. This new support for detection and recovery for certain kinds of DAS control block corruption adds to prior support for JOE, JIX, and BERT control blocks. This can help prevent cold starts.
- **Unicode recovery:** Unicode Services now maintains a copy of certain critical control blocks, and compares them periodically to those in use. When a problem is found, Unicode Services is now designed to repair the in-use control blocks automatically, without the need for an IPL.
- **XRC+:** System Logger and Extended Remote Copy / System Data Mover (XRC/SDM) are now designed to provide better support for remote mirroring of high-volume logging applications, such as IMS CQS and CICS. This support allows you to choose asynchronous writes to staging data sets for log streams. Previously, all writes had to be synchronous, which limited throughput on the primary systems for high-volume logging applications. The ability to do asynchronous writes to the log stream staging data sets can allow the use of XRC as a mirroring technology for some applications for which it was not previously practical.
- **z/OS UNIX System Services latch contention detection:** A new operand is added to the DISPLAY OMVS command. D OMVS,F shows mounts in progress. Often, these are mounts awaiting DFSMSHsm recall. DISPLAY OMVS also shows the owning task for the LFS mount latch, along with a few words about why it obtained the latch and what it is doing at the moment. Often, such a task is waiting for an event, such as the reply to a cross-system message, or for another latch.
- **z/OS UNIX System Services dynamic service activation:** A new dynamic service activation function is designed to provide continuous availability even when certain maintenance is applied. In some cases, this is designed to allow you to install z/OS UNIX service without an IPL. Previously, an IPL was always required to refresh the kernel after installing maintenance.
- **VTAM® trace enhancements:** VTAM internal trace record enhancements are designed to improve problem diagnosis in VTAM components that use

object-oriented procedures, and to trace activation and inactivation of LAN (External Communication Adapter) devices. These enhancements can help improve product serviceability by enabling faster problem diagnosis.

- **Better SLIP support for long HFS program names:** The SLIP command is enhanced to allow you to set more specific traps for program objects, such as DLLs, stored in a z/OS UNIX file system. The number of characters you can specify has been increased from 8 to 80. This is expected to help improve serviceability for products that use file system-resident modules, as many products do when they move to common code bases.
- **RACF database recovery (automatic RVARY SWITCH for some I/O error conditions):** RACF provides automatic failover for primary RACF databases. When a primary RACF database becomes boxed (for example, because of an I/O error), RACF attempts to automatically switch to a backup database, if one is defined. This is expected to improve availability when the device that contains a RACF database fails.
- **New device manager address space (DEVMAN):** A new address space, DEVMAN, is added to support component trace (CTRACE) functions for the Common VTOC Access Facility (CVAF) and Direct Access Device Storage Management (DADSM) components of DFSMSdftp™. This is expected to improve serviceability; in particular, it is intended to make it easier to find the source of VTOC and VTOC index corruption.
- **Consoles enhancements:** z/OS V1.7 delivers the next phase of Consoles enhancements, which provides:
 - Support for deleting unused EMCS consoles
 - A new AMRF/ORE service routine (for SDSF and independent service providers)
 - A change to the way MONITOR messages are processed, so that they are not associated with a console
 - Support for enhanced recovery

Self-optimization capabilities

z/OS continues to offer outstanding overall resource utilization capabilities and policy-based workload management. In z/OS V1.7, the Sysplex Distributor's network load balancing decisions are improved with the use of more granular Workload Manager (WLM) recommendations to help balance workload across a sysplex. EWLM and ARM agent integration can provide a foundation for centralized heterogeneous platform management. In addition, network load balancing decisions can be driven into the network routing appliance layer with the Load Balancing Advisor.

These new and extended functions, together with the other workload management capabilities of z/OS, can help you fully utilize your zSeries processors while also helping to provide the response times to meet your business objectives.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of these previously announced functions:

- OAM immediate recall to disk
- zFS tuning support in RMF

- z/OS Communication Server Sysplex Distributor and Workload Manager (WLM) integration
- EWLM and ARM agent integration
- Load Balancing Advisor
- CICS sockets enhancements

In addition, z/OS V1.7 provides:

- **Enhancements to the fast subsequent migration function:** This enhancement can allow tape mount management (TMM) to benefit from fast subsequent migration (FSM). Also, prior to z/OS V1.7, if you used other products than DFSMSHsm to backup your data you could not use FSM. This restriction has been lifted.
- **A change to the RECYCLE PERCENT criteria:** A new option is added to alter the way DFSMSHsm calculates the RECYCLE PERCENT criteria, which can help allow DFSMSHsm to recycle connected sets earlier, thus returning more tapes to scratch sooner.

Networking

z/OS V1.7 Communications Server continues to provide innovative solutions for enterprise network communications. New security solutions can help secure network communications transparently to the application, along with new workload balancing functions that can help optimize server selection and interoperate with external load balancers.

New functions for IPv6 reinforce IBM's commitment to the next generation of IP networks, and enhancements for SNA/EE, CICS Sockets, and key TCP/IP applications provide new functions that can help improve usability and performance.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of these previously announced functions:

- IPv6 Advanced Socket API
- FTP client C/C++ API support and FTP level of confidence reporting
- Operator-initiated autologon support for VTAM
- Model cross-domain resource modeling (CDRSC)
- The new Display EEDIAG command
- The new MODIFY GR command to remove a generic resource

In addition, z/OS V1.7 provides:

- **JES2 support for NJE via TCP/IP:** In z/OS V1.7, JES2 supports NJE connections using TCP/IP. This can reduce the need for SNA network connections, and can also help reduce cost. Additionally, JES2 and NJE processing is now performed in separate address spaces. This can help simplify performance management and improve availability. This function is planned to be available in first quarter 2006 with APAR OA12364. IBM plans to provide JES3 support for NJE via TCP/IP in a future z/OS release.
- **z/OS Network File System (NFS) support for new standards:** NFS provides a flexible option for the exchange of data between z/OS and UNIX and Windows™ systems that support the NFS protocols. The z/OS V1.7 NFS Server with APAR OA11875 is designed to support most of the NFS V4 protocol. The implementation of this standard is expected to provide good performance, strong security, and enhanced cross-platform interoperability. Support for NFS V4 Byte Range Locking and Delegation operations is not

provided in z/OS V1.7. The following restrictions apply to this implementation:

- NFS V4 RPCSEC_GSS Security support will be delivered in APAR OA11875. Until that APAR is available, only AUTH_SYS security will be supported, as in prior z/OS NFS releases.
- The NFS V4 Byte Range Locking and Delegation operations, as described in the definition of NFSv4 Protocol, are not supported in this release. The NFSv4 Protocol definition document is available at

<http://www.ietf.org/>

- **NFS V4 locking interoperability enhancements:**

- The z/OS NFS locking functions, network lock manager (NLM) and network status monitor (NSM), are merged into the NFS server address space to help improve the cooperative nature of the NFS server, and NLM specifically.
- The NFS server is changed to distribute lock requests to subtasks so that locking requests can be performed asynchronously and in parallel.
- A new LEASETIME site attribute allows you to externally specify the grace period during which a client can reclaim locks following a crash recovery of a z/OS NFS server.
- z/OS NFS server has the following new functions and enhancements:
 - Lock deadlock detection.
 - A new z/OS NFS server operator command displays a list of locks for a specified file (a data set, PDS or PDSE member, or z/OS UNIX file).
 - The RELEASE operator command under the z/OS NFS server is enhanced to work with HFS files to enable releasing of all locks for an HFS file.
 - The RELEASE command is enhanced for MVS™ data sets to interact with the network lock manager (NLM) to ensure that all locks are released.

- **Enterprise Extender (EE) command and display enhancements:** A new DISPLAY EEDIAG command can be used to display performance-related information about Enterprise Extender connections. This command is designed to display Enterprise Extender connections that are experiencing excessive retransmissions. This information can be displayed at intervals, and can help you determine whether problems exist in the network. This new command also provides statistics that can help you tune Enterprise Extender timer settings.

- **Support for OSA-Express2 large send:** Communications Server exploits OSA-Express2 large send (also referred to as TCP segmentation offload) for IPv4 traffic. Large send can help improve performance by offloading outbound TCP segmentation processing from the host to OSA-Express2 by employing a more efficient memory transfer into OSA-Express2.

- **VTAM start option to DISPLAY RSCVs:** The route selection control vector (RSCV) that is computed, used for a session, and displayed before the session information is freed by default. The new RSIRFMSF VTAM start option can be used to specify that RSCV data should be displayed, when available, for sessions that do not become active. This can make it easier to resolve session failure problems.

- **IPv6 support for SNMP UDP data:** The SNMP TCP/IP subagent supports version-neutral UDP management data, which can allow network managers to obtain both IPv4 and IPv6 UDP data from the following MIBs:

- The IETF standard UDP-MIB from draft-ietf-ipv6-rfc2013-update-02.txt
- The IBM MVS TCP/IP enterprise-specific MIB module

- **FTP enhancements:**

- **Control FTP extended directory search** extends the function of the LISTSUBdir option in the FTP.DATA file to new LISTSUBDIR/NOLISTSUBDIR options on the SITE/LOCSITE subcommands. This function controls whether a z/OS UNIX file system subdirectory will be searched for a file, providing for more granular controls when processing files.
- **Modification of end of line (EoL) sequence for ASCII transfer:** The FTP client and server provide the capability to change the line terminator sent with single-byte and multi-byte data ASCII transfers in stream mode. FTP was previously designed to follow the RFC959 standard by appending carriage return and line feed (CRLF) end of line (EoL) terminators. To satisfy customer requests, the FTP client and server now support specifying line terminators for ASCII stream mode transfers as CR, LF, CRLF, or NONE.

- **Additional TCP/IP sysplex operational enhancements:** New commands are provided to quiesce or resume sysplex distributor workload distribution to a target server. When a server is quiesced, existing connections are not disrupted.

- **TCP/IP sysplex configuration improvement:** Communications Server has removed the restriction that VTAM must be an APPN® node when defining XCF connectivity to support TCP/IP. For SNA, XCF connectivity is still supported only for VTAM APPN.

- **TCP/IP connectivity enhancements:**

- **HiperSockets interfaces now support IPv6:** IPv6 communication is now supported between LPARs for z/OS TCP/IP stacks and Linux on zSeries TCP/IP stacks. This can also expand IPv6 connectivity options between TCP/IP stacks in a sysplex when DYNAMICXCF is configured.
- **OROUTED replaced by OMPROUTE:** The OMPROUTE routing daemon, which supports both the RIP and OSPF protocols, replaces the OROUTED daemon. Support for OROUTED, which supported only RIP, is removed.

Ease of use

IBM continues to improve z/OS's ease of use. In z/OS V1.7, the innovative IBM Health Checker for z/OS is now a base function of the operating system, designed to help you find configuration problems before they affect application availability or performance. Many additional system checks are provided, and support for displaying and modifying health checks is added to SDSF.

In addition, there are usability enhancements for specifying options in Language Environment; for managing direct access volume space with RMF; in the z/OS UNIX System Services shell, ISPF, HCD, and HCM; and in z/OS support for Unicode. These improvements can help improve system programmer productivity and help reduce deployment time.

Refer to Software Announcement 205-034, dated February 15, 2005, for a description of these previously announced functions:

- RACF improvements
- ISPF enhancements
- RMF enhancements
- z/OS UNIX System Services enhancements
- Hardware Configuration Definition (HCD) improvements
- A new Hardware Configuration Manager (HCM) check configuration file function
- Unicode dynamic table loading
- OAM volume management Stage 2
- Operator command support for changing SMS volume status
- DFSMSrmm enterprise enablement

In addition, z/OS V1.7 provides:

- **IBM Health Checker for z/OS** is a new z/OS base function and provides a foundation to help simplify and automate the identification of potential configuration problems before they impact system availability. It compares active values and settings to those suggested by IBM or defined by your installation.

IBM Health Checker for z/OS consists of:

- The **framework**, which manages functions such as check registration, messaging, scheduling, command processing, logging, and reporting. The framework is provided as an intended programming interface to support writing new checks.
- **Checks**, which evaluate settings and definitions specific to products, elements, or components. Checks are provided separately and are independent of the framework. The architecture of the framework supports checks written by IBM, independent software vendors (ISVs), and users. You can manage checks and define overrides to defaults using the MODIFY command or the HZSPRMxx parmlib member.

Components and elements that have provided checks for z/OS V1.7 include consoles, cross-system coupling facility (XCF), Global Resource Serialization (GRS), real storage manager (RSM), resource recovery services (RRS), SDUMP, Security Server RACF, virtual storage manager (VSM), and z/OS UNIX System Services.

IBM-supplied checks may be integrated with the product, element, or component, or they may be provided as PTFs. Delivering checks in PTFs makes it possible to provide checks between releases. To easily identify checks that are provided as PTFs, you can use the Enhanced Preventive Service Planning Tool, available at

http://techsupport.services.ibm.com/390/psp_main.html

You can identify checks by selecting a type of "Function" and a category of "Health Checker."

Many of the checks are also supported on z/OS releases V1.4, V1.5, and V1.6; however, you should review the check PTFs for specific releases that are supported.

SDSF for z/OS V1.7 provides support to make management of your checks easier with the new CK panel for the IBM Health Checker for z/OS. You can use the CK panel to display checks, attributes, and status, taking advantage of standard SDSF sort, filter, and arrange support. In addition, you can:

- Alter check attributes (such as status, interval, severity, category, and WTO descriptor)
- Browse check output for the most recent check
- Print check output or send it to a data set

The SDSF support will also be made available in PTFs for z/OS V1.4, V1.5, and V1.6.

IBM Health Checker for z/OS is also planned to be made available for z/OS and z/OS.e releases V1.4, V1.5, and V1.6 as a z/OS Web download from the z/OS Downloads page

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

- **SMS volume selection messages and traces:** In addition to the summarized analysis messages issued by SMS when volume selection fails for an SMS-managed data set, SMS provides more information to help you analyze the reasons why selection might have failed. This enhancement provides the following functions:

- Summarized and detailed analysis messages on request
- DADSM failure reasons and diagnostic codes in summarized analysis messages
- Addition of volume selection data to SMS trace data
- Addition of new trace data for SMS and non-SMS managed VSAM allocations with more complete information

You can use this additional information about your SMS environment to help improve storage utilization.

- **ISPF enhancements**

- Enhanced DSINFO service to return APF and LINKLST status: The data set information (DSINFO) service has been enhanced to allow callers to determine whether data sets are APF authorized or in the link list.
- Command to display system and user ID: A new command displays the system ID and your user ID on all ISPF panels. This helps you remember which session you are using in a sysplex environment.
- Enhanced data set and member list SORT commands allow you to sort the entries in ascending or descending sequence.
- Support for highlighting (Hilite) HTML and XML data in ISPF Edit.

- **Library Server enhancements**

- Enhanced PDF support: Library Server provides support for PDFs not contained in extended shelves, when they do not have a corresponding BookManager® Book. That is, it provides "PDF Collection" support in the library catalog. This satisfies a customer requirement to extend PDF support and allows you to manage vendor-supplied PDFs, which generally do not have corresponding

BookManager books, without having to build an extended shelf.

- Library Server has an improved search capability, with a pulldown you can use to perform customer searches. Also, it lets you customize how information is presented by editing sample stylesheets, and simplifies the creation of a Library Center.
- Enhanced support for markup of tables and syntax diagrams, in conformance with accessibility guidelines.
- **Network File System enhancement: Dynamic Host Configuration Protocol (DHCP) support:** Support for Dynamic Host Configuration Protocol (DHCP) is added for NFS. Both the NFS server and client can use DHCP to acquire an IP address. This can simplify IP configuration for NFS, and allows NFS to be used in an existing DHCP environment.
- **RMF enhancements**
 - RMF disk space monitoring: RMF Monitor III is extended to display the total and free space per DASD and storage group. This information is also exploited by the RMF Common Information Model provider function. These two functions can help you manage your storage resources more easily by providing this information in additional ways.
 - RMF Monitor III (RMF PM) now allows you to monitor storage and subpool usage for the Master address space and the amount of unallocated Common Area storage (CSA and SQA) below the 16 MB line. This can help you identify emerging problems more quickly.
 - RMF Monitor III uses the zFS monitoring APIs to provide performance information about the zFS environment. You can use this information to tune the zFS environment by monitoring cache sizes, I/O balancing, and the sizes of zFS aggregates. This can help simplify zFS performance management.
- **APPC conversational timeout reduced from one minute to one second:** The minimum APPC/MVS conversational time-out value, a time limit that controls how long an unresponsive transaction will be allowed to wait before being forced to end, is reduced from one minute to one second. This is expected to help improve response time for presenting a failure and for other transactions that might be waiting for resources held by the unresponsive transaction. This change also satisfies several customer requirements.
- **APPC/MVS operator commands to add/delete logical unit (LU) definitions:** New operator commands can be used to add and delete LU definitions. This can make it easier to make configuration changes quickly.
- **PSP bucket removal:** Up-to-date PSP buckets are now available online. ServerPac and CBPDO have been changed to point to this current information.
- **Resource display:** SDSF now supports monitoring JES2 system resources, letting you monitor the same resources described by the \$HASP050 JES2 RESOURCE SHORTAGE message. For each resource, SDSF reports:
 - Total defined number of elements for the resource and the number available for use
 - Number of elements currently in use
 - Percentage of the total elements currently in use

In addition, SDSF displays the information about JES2 spool volumes that is returned by the \$DSPPOOL command, including total spool utilization and individual spool volume utilization and status, for all members of a multi-access spool cluster (MAS) from any member of the MAS.

These functions help make this information available in one place, can help improve operator and system programmer productivity, and can save JES2 command buffers, command processing CPU time, and SYSLOG space.

- **z/OS UNIX System Services enhancements**

- ISHELL enhancements: New function has been added to ISHELL, OEDIT, OBROWSE, and z/OS UNIX System Services REXX functions to satisfy numerous customer requirements. Among the ISHELL improvements are a new command retrieval function, the ability to create a new file with specified attributes, a new display that can be sorted by GID, and the addition of a reference list. OEDIT improvements include a higher maximum width for editing (up to 32752) and warning about potential changes to extended file attributes. BPXWDYN is enhanced to add the capability to retrieve DD names, data set names, and path names for current allocations. Together, these changes address fifteen requirements.

- LFS support for zFS — Phase 4: Mount processing has been changed to check the file system type. The HFS and zFS file system types in mount statements and command operands are now generic file system types that can mean either HFS or zFS. When mounting file systems, the system determines which file system type is appropriate to use.

Additionally, an ISPF-based tool will help you create new zFS file systems to replace HFS file systems, copy the data from the HFS file systems to the zFS file systems, and mount the new file systems in place of the old ones. Also, pax processing has been improved to copy sparse files as sparse, create mountpoints at device boundaries, attempt to continue when there is an error processing a source file or directory, and copy File Format and Audit Flags from source files.

- **zFS enhancements**

- zFS administration (zfsadm) commands and zFS file system control (pfsctl) APIs now work across the sysplex. For example, they are designed to support quiescing a zFS aggregate from any member of the sysplex. This can allow a zFS aggregate to be backed up using DFSMSdss from any member of a sysplex when all members are running z/OS V1.7.
- The same characters are now allowed to be specified for both zFS and HFS file system names and in zFS aggregate names.
- New zFS pfsctl APIs and zfsadm command options are designed to allow additional zFS performance statistics to be retrieved.
- Unquiesce MODIFY command: A new MODIFY command is provided to unquiesce a specifically named zFS aggregate. This can be useful when DFSMSShm processing has been interrupted after quiescing a data set, leaving it inaccessible. This support is exclusive to zFS.

- **Hardware Configuration Definition (HCD)**

- **Working with groups of devices:** The HCD dialog reflects the new IODF structure in the I/O device list. The initial I/O device list shows the groups of devices and lets you perform actions on the groups of devices and navigate to the single devices.
- **Enhanced CHPID aggregate function:** The CHPID aggregate function allows you to aggregate just a subset of control units from a source to a target CHPID. Also, the target CHPID may be connected to a different dynamic switch from the source CHPID.
- **Local download of an IOCDs:** An IOCDs download can now be performed locally even if a SNA address has been defined to the processor.
- **Definition of FICON loopback port configuration:** For a FICON switch matrix, HCD allows you to define a dynamic port connection from a FICON port to itself (loopback connection).
- **Enhanced CTC connection list and report:** The CTC connection list/report also displays point-to-point CTC connections.
- **Enhanced View IODF panel:** Besides the IODF version, the View IODF panel shows the percentage of used space that is actually utilized.
- **Enhanced Available IODFs panel:** The Available IODFs panel, invoked by prompting for IODFs on the HCD Primary Task Selection Panel, provides sort keys that sort the IODF list by IODF name, allocated size, or creation date.
- **Improved PFSHOW handling:** The PFSHOW command setting within HCD is retained across HCD sessions. In addition, the PFSHOW setting that is active before the invocation of HCD is saved and reset upon exit of HCD.
- **Automatic IODF check:** You can specify a new profile option, CHECK_IODF, to perform an automatic check for consistent IODF data when the currently allocated IODF is switched or the HCD dialog is terminated.
- **Counting rows of filtered lists:** On panels that provide the Filter action bar choice, you can use a new pulldown choice Count rows on (filtered) lists to receive a message that displays the number of rows that match the current filter criteria.
- **Prompt for unused device numbers:** On the Add Device panel, you can use a prompt (PF4) for unused device numbers and ranges in the current IODF. You can select a free device number and range from the displayed list for the definition of new devices.

- **Hardware Configuration Manager (HCM)**

- **General objects:** You can create general objects (general boxes) for purposes that are not covered by other HCM objects, for example, to represent devices and their connections that are not part of the logical definitions of an I/O configuration. Thus the purpose of general objects can be to document the complete cabling of your devices in your configuration. A general object can be anything you want to represent, along with its connections in the configuration diagram. One example is a network device. These objects and their connections appear in the configuration diagram, so that you can have a complete view of the

physical objects in your configuration. General objects are stored in the HCM configuration file.

- **Viewing HCD configuration reports in HCM:** You can now view a selection of the HCD configuration reports from HCM. A new dialog lets you select a subset of the HCD configuration reports and also limit the reports to selected objects (for example, a processor or an OS configuration). The contents of the selected reports are shown in a window. You can save the output into a file on your workstation. This function is not available in standalone mode.
- **New function of the CHPID Mapping Tool Support utility:** You can now directly launch the CHPID Mapping Tool from within the CHPID Mapping Tool Support, if this tool is correctly installed on your workstation. (This function is also provided to z/OS V1.6 HCM via PTF.)

Installation and customization

SMP/E enhancements: z/OS V1.7 SMP/E includes the same functions as SMP/E V3.4 (5655-G44). SMP/E V3.4 has been enhanced to provide Internet Service Retrieval. This capability allows you to automate ordering and delivery of PTFs. The PTFs can also be installed in the same job step. This can help eliminate manual tasks currently required for ordering and delivery of IBM PTFs using current methods such as ShopzSeries.

SMP/E V3.4 has been enhanced to use an alternative method to calculate SHA-1 hash values if Integrated Cryptographic Service Facility (ICSF) is not available for use. Although ICSF is the preferred method, SMP/E no longer requires it. If SMP/E detects that ICSF is not available, SMP/E will automatically use an SMP/E Java application class to calculate SHA-1 hash values as an alternative. Refer to *SMP/E User's Guide (SA22-7773)* for the required setup.

ProductPac® enhancements

- Allow you to include products from multiple zones
- Include a product currency report and a migration assistance report

The product currency report shows you whether the products that are installed on your system, based on your submitted Consolidated Software Inventory (CSI), are current or at the latest level available. It also provides the end-of-marketing and end-of-service dates of the products, if available. The migration assistance report provides you, by zone and FMID, the latest level of products available.

ShopzSeries: ShopzSeries now supports Internet delivery for ServerPac orders. For details about all the Internet delivery options available in ShopzSeries, refer to

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

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

The publication *z/OS Migration* is enhanced to provide documentation for all supported migration paths to z/OS V1.7. These are V1.6 to V1.7, V1.5 to V1.7, and V1.4 to V1.7.

Functional withdrawals

As previously announced, support for these functions is withdrawn in z/OS V1.7:

- ISAM data sets
- JOBCAT and STEPCAT JCL statements
- JES2 Compatibility Mode (R\$ mode)
- The OS/390 V2.10 level of the C/C++ compiler
- z/OS Communications Server support for OROUTED
- 1-byte Console IDs and external interfaces supporting migration console IDs are removed from the WTO, WTOR, and MCSOPER macros; and from operator commands. (**Note:** In the release following z/OS V1.7, all 1-byte Console ID support will be completely removed.)

As previously announced, support for this function is planned to be withdrawn in a future release:

Support for the VSAM IMBED, REPLICATE, and KEYRANGE attributes will be withdrawn. No supported release of z/OS 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.

For more information about these and future functional withdrawals, visit

http://www.ibm.com/servers/eserver/zseries/zos/zos_sods.html

Related information

Subcapacity reporting improvements for z/OS guests of z/VM®: The functionality provided by the WLM component is one of the key platform differentiators for z/OS. WLM is enhanced in z/OS V1.7 to provide better subcapacity reporting granularity for z/OS V1.7 guests of z/VM. Prior to this support, the Subcapacity Reporting Tool (SCRT) would report product MSUs based on the maximum capacity of the LPAR in which the z/OS z/VM guest or guests ran.

With the enhancements made to WLM in z/OS V1.7 and SCRT V10.3, this support allows the product MSUs to be based on an actual 4-hour rolling average of the z/OS V1.7 z/VM guest or guests, rather than the maximum capacity of the LPAR in which the z/OS z/VM guest or guests ran. This may result in lower IBM software charges for customers eligible for subcapacity pricing that run images of z/OS as a guest of z/VM. In order to obtain the benefits of this support, all z/OS guests of z/VM running on a zSeries processor must be at the level of z/OS V1.7 or above, and use the proper level of the SCRT tool (SCRT V10.3 or above).

In z/OS z/VM guest environments where there is a mix of z/OS V1.7 (and above) and z/OS V1.6 (and below) running on the same zSeries processor, or in z/OS z/VM guest environments where z/OS V1.6 (and below) are running on the same zSeries processor, SCRT will continue to report on the product MSUs based on the maximum capacity of the LPAR in which the z/OS z/VM guest or guests ran.

For additional information on this enhancement, refer to *Using the Subcapacity Reporting Tool*, available from the System z9 and zSeries Pricing Web site at

<http://www.ibm.com/servers/eserver/zseries/swprice/scrt/>

z/OS V1.7 product content

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://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2B117

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

- Common Information Model — DES 56 bit, TDES 168 bit if z/OS Security Level 3 installed
- 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, AES uses System SSL)
- 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)
- Network File System (uses Network Authentication Service)

• Optional features

- Communications Server Security Level 3 (TDES)
- Security Server — RACF (limited DES and CDMF, 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 **General coexistence, release migrations, and fallback** topic in the **Technical information** section for additional information.

Statements of general direction

IBM plans to take the following action effective in 2005:

- IBM intends to provide a new user interface for z/OS management that is planned to help the new generation of Information Technology workers by automating, eliminating, and simplifying many z/OS management tasks. The first phase of the new user interface (planned to be provided in a separate product) is planned to provide real-time health check information executed by the IBM Health Checker for z/OS and configuration status information for z/OS systems and sysplex resources. The new interface contains built-in automation and expert advice capabilities that provide detailed contextual information on alerts and corrective actions. This new interface is planned to be available in fourth quarter 2005.

IBM plans to take the following actions in the future:

- Scale up and scale out: z/OS V1.7 currently allows you to scale up in a single logical partition from 1 processor to 32 with good scalability² and to scale out in a Parallel Sysplex for higher availability. IBM plans to support more than 32 processors in a single logical partition on the IBM System z9 109 (z9-109) in the future.

² This is based on internal IBM lab measurements.

- IBM plans to announce a version of New Application License Charges (NALC) intended to help improve the price performance of z/OS in certain new workload environments by delivering subcapacity pricing. The offering and associated terms are targeted for availability in the second half 2006.
- IBM plans to introduce a new system component called z/OS XML System Services (z/OS XML) in a future release of z/OS. This component will be designed to provide an optimized set of services for parsing XML documents. It is expected to be of use to IBM, ISV, and customer middleware and applications having high performance or unique environmental XML parsing requirements, such as the ability to run in cross-memory and SRB modes. Initial support is planned to provide an assembler language interface; later, IBM plans to add C/C++ high-level language support.
- IBM intends to provide a VSAM Java database connectivity (JDBC) Connector in the future, not in 2005 as previously stated in Software Announcement 204-180, dated August 10, 2004. 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 are expected to be able to access VSAM data, at the same time as other applications, when deployed in WebSphere, DB2, and z/OS UNIX Systems Services environments. When used with the optional DFSMSStvs (Transactional VSAM Services) feature, the VSAM JDBC Connector is intended to allow WebSphere applications to participate in coordinated commit processing.

- A new function in SMP/E, Internet Service Retrieval, is intended to simplify the acquisition of z/OS service. This function, which supplements existing service options in ShopzSeries, is planned to be available in September 2005. For more information about this new function, see the description of the SMP/E Internet Service Retrieval function in the **SMP/E enhancements** section.

Internet Service Retrieval and ShopzSeries now offer extensive options for service acquisition and delivery. To reduce the number of ordering interfaces and help assure timely delivery of new function, some older options for service delivery are being simplified or discontinued:

- Effective January 15, 2006, as previously announced in Software Announcement 205-034, dated February 15, 2005, the S/390 Service Update Facility (SUF) will be discontinued.
- Effective March 2006, new ESO and CBPDO (5751-CS8 and 5775-MVS) physical delivery subscriptions will not be accepted.
- Effective June 2006, CBPDO product orders will include service only for the products included in the order. Formerly, CBPDO product orders included service for other products licensed under the same customer number within the same SREL. To get service for other products, you can use SMP/E Internet Service Retrieval, ShopzSeries, or a fee service offering.
- Effective June 2006, Service-Only CBPDO (5751-CS3) orders will no longer be accepted. An improved option for ordering service by SREL, or for all licensed products under the same customer number, will

continue to be supported in ShopzSeries. You can also get service based on what you have installed using SMP/E Internet Service Retrieval, ShopzSeries, or selected fee offerings. Note that CBPDO product orders are not affected by this change.

- Effective September 2006, existing ESO and CBPDO physical delivery subscriptions will be discontinued. You can use a job scheduling system and SMP/E Internet Service Retrieval to get service at any interval you find convenient, or use the Internet delivery subscription option available in ShopzSeries.

IBM recommends that you begin to use SMP/E Internet Service Retrieval, ShopzSeries, or one of these worldwide fee offerings before the above changes take effect:

- US — SoftwareXcel, Resolve
- Europe/Middle East/Africa — Enhanced Technical Support
- Canada — SupportLine
- Latin America — SupportLine
- Asia Pacific/South — SupportLine

For more information, visit the ShopzSeries Web site at

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

On February 15, 2005, IBM announced IBM Communication Controller for Linux on zSeries V1.1. This product is intended to provide a migration path for customers using SNA applications to communicate with business partners. In the next release of Communication Controller for Linux on zSeries, IBM intends to provide enhancements in network connectivity such as channel data link control (CDLC) using OSA-Express2 OSN (OSA for NCP), data-link switching (DLSw), and an open interface for X.25 (NPSI). For more information on this product, refer to

<http://www.ibm.com/software/network/cc1>

- Support for the following plug-ins for msys for Setup will be withdrawn in the release following z/OS V1.7: TCP/IP Services, z/OS UNIX System Services, Language Environment, Parallel Sysplex, ISPF, and RMF. When this support is withdrawn, you will not be able to use msys for Setup for function enablement, setup, or configuration of these areas of z/OS.

The DB2 V8 msys for Setup plug-in is unaffected and remains available for enablement, setup, and configuration of DB2. The TCP/IP plug-in will continue to be available for download via the Web and will no longer require msys for Setup. IBM intends to continue to deliver improvements to help with z/OS setup and configuration in the future.

- z/OS V1.7 is planned to be the last release to support the z/OS msys for Operations element. It is IBM's intent to remove the z/OS msys for Operations element from the release following z/OS V1.7. IBM plans to transition many of the current msys for Operations functions to a new user interface and infrastructure in a future release of z/OS.

For more information, and for all 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

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.

Fee-based software services offerings

Withdrawal and end-of-support information is now available in CustomPac: CustomPac offerings, ProductPac and RefreshPac, now include a product currency report and a migration assistance report. ProductPac is a software package that includes an individual product or small number of products built based on your SMP/E profile. RefreshPac is a software preventive service package based on your installed inventory. The product currency report shows whether the products that are installed on your system, based on your submitted Consolidated Software Inventory (CSI), are current or at the latest level available. You will also get a list of the software products on your system that have reached end-of-service or have been withdrawn from market and their replacements.

ProductPac multi-zone support: The ProductPac offering in CustomPac has been enhanced so that you can now include products from multiple zones and have the benefit of:

- Getting a full service upgrade on your whole environment, based upon selected zones
- Ordering subsequent packages, including Selective Follow-on Services (SFS), RefreshPac on Profile (ROP), and OMIS (Online Maintenance Information System), using the profile created for your ProductPac

For more information on CustomPac, visit

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

Enhancements to ServiceLink Preventive Service Planning (PSP) and Service Request and Delivery (SRD): By accessing IBMLink™ and using the PSP application, you can order all the PTFs (including the PTFs of all closed APARs referenced in the subset) AS IS or streamlined, based on your SMP/E Consolidated Software Inventory (CSI profile). APARS referenced in the PE APAR LIST are excluded. Click Order all at the bottom of the View subset page.

The extracted PTFs will be transferred to the Submit PTF Order page in SRD, where you can add or delete PTFs before submitting the order. To use a CSI profile, click Upload CSI profile in the SRD Order OS/390 z/OS option to upload your CSI profile to IBM and get the CSI profile name to specify. Plus, you can now download a list of these PTFs to your workstation to see which apply to your system and order them at your convenience. Click PTF list at the bottom of the View subset page to make them available for download via your browser's pop-up download window.

The new Health check function available in ServiceLink SRD gives you an e-mail report of the critical service (HIPER/PE PTFs) required to be installed on your system based on your Consolidated Software Inventory (CSI) profile, plus a list of the software products on your system that have reached end-of-service or have been withdrawn from market and their replacements.

To order the Health check report based on your CSI profile:

1. From ServiceLink, select SRD.
2. Click Order OS/390 z/OS.

3. Click Order Health check, products and maintenance currency, based on CSI profile.
4. Click Upload CSI profile for Health check. Your uploaded inventory will be saved as a profile at IBM under your customer number and can be used to place future orders.
5. When all the information has been entered, click Submit. The report will be sent to you in e-mail format.

For more information on ServiceLink, visit

<http://www.ibm.com/ibmlink/link2/servicelink/servicelinkPage.jsp?lc=en&cc=US>

Important Web sites

- z/OS Web site
<http://www.ibm.com/servers/eserver/zseries/zos/>
- z/OS.e Web site
<http://www.ibm.com/servers/eserver/zseries/zose/>
- 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
- IBM System z9 and zSeries Internet Library
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>
- Descriptions of courses worldwide
<http://www.ibm.com/services/learning>
- z/OS downloads
<http://www.ibm.com/servers/eserver/zseries/zos/downloads/>
- CustomPac
<http://www.ibm.com/ca/custompac>
- ShopzSeries
<http://www.ibm.com/software/shopzseries>
- XML Toolkit for z/OS
<http://www.ibm.com/servers/eserver/zseries/software/xml/>
- Communication Controller for Linux on zSeries
<http://www.ibm.com/software/network/ccl/>

Reference information

- Hardware Announcement 105-241, dated July 26, 2005 (IBM System z9 109)
- Software Announcement 205-170, dated July 26, 2005 (IBM SMP/E for z/OS V3.4)
- Software Announcement 205-034, dated February 15, 2005 (Preview: IBM z/OS V1.7 and z/OS.e V1.7: World-class computing for On Demand Business)

- Software Announcement 204-180, dated August 10, 2004 (IBM z/OS V1.6: Integrating new applications and Preview: z/OS V1.7)

Education support

Here are some of the courses 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)
- IBM eServer z990/z890 Technical Update and Configuration Guidelines (OZ05)
- z/OS V1R6 and z/OS V1R7 Update (OZ92), planned to be offered in 2005

In the U.S. and Canada, call 800-IBM-TEACH (426-8322) to enroll in one or more of these classes. To find other z/OS-related courses, visit

<http://www.ibm.com/training/us/catalog/zseries>

Technical information

Hardware requirements: z/OS V1.7 runs on the following IBM servers:

- System z9 109 (z9-109)
- 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

Performance considerations: Additional information on z/OS V1.7 performance will be published at general availability. Contact an IBM representative at or after general availability.

User group requirements: z/OS V1.7 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

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 1-888-426-4343. To obtain information on customer eligibility and registration procedures, contact the appropriate support center.

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.

Ordering information

Ordering z/OS through the Internet

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

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

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
- Software Announcement 204-056, dated April 7, 2004

Key dates

- **July 26, 2005:** z/OS V1.7 CFSW configurator support for stand-alone path (5694-A01) and price proposal support.
- **September 16, 2005:** First date for ordering z/OS V1.7 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 16, 2005:** Withdrawal of the 4mm media feature code support for the Optional Source Code features for z/OS V1.6.
- **September 16, 2005:** Planned general availability of Cryptographic Support for z/OS V1.6 and V1.7 and z/OS.e V1.6 and V1.7 Web deliverable. This Web deliverable will support z/OS and z/OS.e V1.6 and V1.7.

- **September 15, 2005:** Last date for Web download of the ICSF 64-bit Virtual Support for z/OS and z/OS.e V1.6 Web deliverable. It is being replaced by the Cryptographic Support for z/OS V1.6 and V1.7 and z/OS.e V1.6 and V1.7 Web deliverable.

- **September 30, 2005:** z/OS V1.7 planned general availability via ServerPac, CBPDO and SystemPac.
- **September 30, 2005:** Planned general availability of IBM Health Checker for V1.4, V1.5, and V1.6 of z/OS and z/OS.e Web deliverable. This Web deliverable will support z/OS and z/OS.e V1.4, V1.5, and V1.6.
- **September 30, 2005:** Planned removal of z/OS and z/OS.e Text Search Web deliverable. For more information, refer to the DB2 UDB Text Extender Web site

<http://www.ibm.com/software/data/db2/extenders/text/te390/>

- **October 11, 2005:** Recommended last date for submitting z/OS V1.6 orders for ServerPac, SystemPac and CBPDO. This date will allow for adequate order processing time.
- **October 24, 2005:** Last date for ordering z/OS V1.6 via ServerPac, SystemPac and CBPDO.
- **December 2006:** Last date for ordering z/OS V1.4 z990 Exploitation Support feature and z/OS V1.4 Consoles Enhancements feature.

Typically, when one z/OS release becomes orderable in ServerPac, SystemPac, and CBPDO, the previous release can no longer be ordered. Because 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 it is 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

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

Then, select z/OS.

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 V1.7, optional source code is no longer offered as announced in Software announcement 204-180, dated August 10, 2004.

ShopzSeries now supports Internet delivery for your ServerPac orders. Get your z/OS software products, or even a complete z/OS operating system electronically. For the full range of Internet delivery options, visit the ShopzSeries Web site at

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

Note: ShopzSeries is available in the U.S., Canada, and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your product order via the traditional IBM ordering process.

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

- z/OS V1.4 z990 Exploitation Support feature
- z/OS V1.4 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 V1.7 by ordering the release through the Customized Offerings (ServerPac, SystemPac, CBPDO) as they have done in the past.

New licensees

New licensees of z/OS V1.7: 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 V1.7 orders will begin on the planned general availability date, **September 30, 2005**. 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 V1.7 program number 5694-A01. Proceed to select the feature numbers listed, which are required, and then select any optional feature numbers.

New application license charge (NALC) ordering information

Note: This is a pricing addition to the C/C++ without Debug feature.

The New Application License Charge price is a price per MSU of the processor to which the software is licensed. Order the quantity of features equal to the MSU rating of the processor.

New application license charge

Entitlement identifier	Description	License option/pricing metric
S00T4FZ	C/C++ without Debug	Basic MLC, per MSU

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 V1.7 and can be ordered effective **July 26, 2005**. These features have pricing/billing features associated with them. Refer to **Notes** below for details on past announcements for this information.

z/OS V1.7 Feature description	z/OS V1.7 Orderable supply ID
Base	S011PSG

Notes

- Effective in z/OS V1.6, the following base elements were 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
 - Software Announcement 204-056, dated April 7, 2004
- 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 publications

Optionally unpriced source media

Effective with z/OS V1.7, optional source code is no longer offered, as announced in Software Announcement 204-180, dated August 10, 2004. A program directory and one copy of the following publication are supplied automatically with the basic machine-readable material:

Basic unlicensed hardcopy publications

Title	Order number
z/OS Hot Topics Newsletter	GA22-7501

Notes

- The Memo to New Licensees is not offered starting in z/OS V1.6.

- 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 7 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 V1.7 documents available in hardcopy using the IBM Publications Center on the Web

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

For customers in 23 countries, the IBM Publications Center 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

z/OS V.1.7 Collection (BookManager and PDF): z/OS Version 1 Release 7 Collection contains the z/OS V1.7 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 V1.7 licensees.

By general availability, the z/OS V1.7 books will be available at

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

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

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

Optional unpriced features — z/OS V1.7: The following optional features, offered at no additional charge, are added to z/OS V1.7 and can be ordered effective **July 26, 2005**.

z/OS V1.7 Feature description	z/OS V1.7 Orderable supply ID
Communications Server Security Level 3	S011PRC
z/OS Security Level 3	S011PPS

Notes

1. This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO). The media type is chosen during the customized offering ordering procedure.
2. All the above features can be exported outside the U.S.
3. 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.

Optional priced features: The following optional no-charge features are added to z/OS V1.7 and can be ordered effective **July 26, 2005**. These features have pricing/billing features associated with them. Refer to Notes below for details on past announcements for this information.

z/OS V1.7 Feature description	z/OS V1.7 Orderable supply ID
BDT FTF	S011PRV
BDT SNA NJE	S011PRS
BookManager Build	S011PS8
C/C++ without Debug	S011PSB
DFSMSdss,hsm	S011PSM
DFSMSrmm	S011PRO
DFSMSdss	S011PR5
DFSMSStvs	S011PR3
DFSORT	S011PS5
GDDM(R)-PGF	S011PPP
GDDM-REXX	S011PRF
HCM	S011PPW
HLASM Toolkit	S011PRR
Infoprint(R) Server	S011PSF
JES3	S011PR4
RMF	S011PPN
SDSF	S011PS6
Security Server	S011PSD

Notes

- 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,
 - Software Announcement 203-131, dated May 13, 2003
 - Software Announcement 204-056, dated April 7, 2004
 - Software Announcement 205-167, dated July 26, 2005
- This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO). The media type is chosen during the customized offering ordering procedure.
- 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.
- 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.
- DFSMSdss cannot be ordered with DFSMSdss,hsm and vice versa.

Optional unpriced National Language Version (NLV) features

The z/OS V1.7 NLV support features will become generally available on the same date the release becomes available.

z/OS V1.7 provides support in the languages listed below. However, not all elements within z/OS V1.7 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

The following optional features, offered at no additional charge, are added to z/OS V1.7 and can be ordered effective **July 26, 2005**.

The NLV features for z/OS V1.7 are:

z/OS V1.7 NLV feature description	z/OS V1.7 Orderable supply ID
Brazilian Portuguese Base (PTB)	S011PPV
Brazilian Portuguese BookMgr Build	S011PS2
Canadian French Base (FRC)	S011PRG
Canadian French BookMgr Build	S011PR7
Danish Base (DAN)	S011PPZ
Dutch Base (NLD)	S011PRP
French Base (FRA)	S011PPF
French BookMgr Build	S011PSR
German Base (DEU)	S011PSP
German BookMgr Build	S011PPG
Italian Base (ITA)	S011PRK
JPN Base	S011PR9
JPN C/C++ Without Debug	S011PS1
JPN DFSORT	S011PSJ
JPN Infoprint Server	S011PR1
JPN RMF	S011PSN
JPN SDSF	S011PPL
JPN Security Server	S011PR6
Upper Case English Base (ENP)	S011PR2
Korean Base (KOR)	S011PRH
Norwegian Base (NOR)	S011PPM
Spanish Base (ESP)	S011PPT
Spanish BookMgr Build	S011PRW
Swedish Base (SVE)	S011PS7
Swiss German Base (DES)	S011PS9
Simplified Chinese Base (CHS)	S011PPK
Traditional Chinese Base (CHT)	S011PS3

Notes

- The above feature descriptions are offered at no additional charge.
- The JPN C/C++ with Debug support was not offered starting in z/OS V1.5. For this function and NLS support, order the JPN 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.

Optional unlicensed publications

Optional unlicensed softcopy publications: The following optional one-time charge features are added to z/OS V1.7 and can be ordered effective **July 26, 2005**.

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	Orderable Supply ID	Price
z/OS Software Products Collection	SK3T-4270	S011PPR	\$275
IBM eServer zSeries Redbooks(TM) Collection	SK3T-7876	S011PRM	150
z/OS Security Server RACF Collection	SK3T-4272	S011PSC	150
z/OS Version 1 Release 7 and Software Products DVD Collection	SK3T-4271	S011PS4	350

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 V1.7 is planned to be available October 7, 2005.

- The feature descriptions listed above are the same offered in z/OS V1.6.
- When the above softcopy collections are ordered as features of z/OS V1.7, the special subscription price includes automatic shipment of all updates made while the product version can be ordered.

The *z/OS Software Products Collection* now includes more than 1,730 unlicensed online documents for more than 290 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.

The *IBM eServer zSeries Redbooks Collection* contains IBM Redbooks, in PDF format, related to z/OS and other zSeries products. IBM Redbooks, which are produced by the International Technical Support Organization, include timely technical information based on realistic scenarios and are created by IBM experts, customers, and business partners from around the world.

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

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

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 and 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 7 and Software Products DVD Collection (SK3T-4271)* includes softcopy tools, libraries for z/OS Version 1 Release 7 (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 7 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 are 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: Effective with z/OS V1.7, there are no longer any licensed publications, which previously required a separate key code to access on ResourceLink.

z/OS V1.6 features withdrawn

The 4mm media feature codes for the z/OS V1.6 Optional Source Code features are withdrawn from marketing effective September 15, 2005:

z/OS V1.6 Feature description	z/OS V1.6 Orderable supply ID
z/OS V1.6 Base Source Code — 4mm	S010WF2
z/OS V1.6 Base Source Code — JPN — 4mm	S010WCH
z/OS V1.6 Security Server Source Code — 4mm	S010WCD

The following z/OS V1.6 features are withdrawn from marketing effective October 24, 2005:

z/OS V1.6 Feature description	z/OS V1.6 Orderable supply ID
z/OS V1.6 Base	S010WF8
z/OS V1.6 BDT FTF	S010WD1
z/OS V1.6 BDT SNA NJE	S010WDT
z/OS V1.6 BookManager Build	S010WFF
z/OS V1.6 C/C++ without Debug	S010WF4
z/OS V1.6 DFSMSdss,hsm	S010WFV
z/OS V1.6 DFSMSrmm	S010WFH
z/OS V1.6 DFSMSdss	S010WFR
z/OS V1.6 DFSMSStvs	S010WCF
z/OS V1.6 DFSORT	S010WFM
z/OS V1.6 GDDM-PGF	S010WDM
z/OS V1.6 GDDM-REXX	S010WCG
z/OS V1.6 HCM	S010WFS
z/OS V1.6 HLASM Toolkit	S010WF7
z/OS V1.6 Infoprint Server	S010WC8
z/OS V1.6 JES3	S010WDS
z/OS V1.6 RMF	S010WFB
z/OS V1.6 SDSF	S010WCW
z/OS V1.6 Security Server	S010WC9
z/OS V1.6 Communications Server Security Level 3	S010WDB
z/OS V1.6 z/OS Security Level 3	S010WFT
z/OS V1.6 Base Source Code — 3480	S010WF1
z/OS V1.6 Base Source Code — JPN — 3480	S010WCX
z/OS V1.6 Security Server Source Code — 3480	S010WFP
z/OS V1.6 SK3T-4272 z/OS Security Server RACF Collection	S010WFW
z/OS V1.6 SK3T-4270 z/OS Software Products Collection	S010WCZ
z/OS V1.6 SK3T-7876 IBM z/OS V1 zSeries Redbook Collection	S010WD6
z/OS V1.6 SK3T-4271 z/OS V1R6 and Software Products DVD Collection	S010WDN
z/OS V1.6 Braz Port Base (PTB)	S010WDW
z/OS V1.6 Braz Port BookMgr Build	S010WD7
z/OS V1.6 Can Fren Base (FRC)	S010WCV
z/OS V1.6 Can Fren BookMgr Build	S010WDC
z/OS V1.6 Danish Base (DAN)	S010WFD
z/OS V1.6 Dutch Base (NLD)	S010WCF
z/OS V1.6 French Base (FRA)	S010WFJ
z/OS V1.6 French BookMgr Build	S010WCT
z/OS V1.6 Germ Base (DEU)	S010WCP
z/OS V1.6 Germ BookMgr Build	S010WDZ
z/OS V1.6 Ital Base (ITA)	S010WDG
z/OS V1.6 JPN Base	S010WDF
z/OS V1.6 JPN C/C++ Without Debug	S010WDL
z/OS V1.6 JPN DFSORT	S010WCL
z/OS V1.6 JPN Infoprint Server	S010WCN
z/OS V1.6 JPN RMF	S010WCS
z/OS V1.6 JPN SDSF	S010WD5
z/OS V1.6 JPN Security Server	S010WF5
z/OS V1.6 Upper Case English Base (ENP)	S010WDX
z/OS V1.6 Kor Base (KOR)	S010WDV
z/OS V1.6 Norw Base (NOR)	S010WDO
z/OS V1.6 Span Base (ESP)	S010WFO
z/OS V1.6 Span BookMgr Build	S010WDD
z/OS V1.6 Swed Base (SVE)	S010WDH
z/OS V1.6 Swiss Germ Base(DES)	S010WD9
z/OS V1.6 Simp Chin Base (CHS)	S010WCJ
z/OS V1.6 Trad Chin Base (CHT)	S010WF6

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.

Terms and conditions

The terms and conditions of z/OS Version 1 (5694-A01) are unaffected by this announcement. For more information, refer to Software Announcement 200-352, dated October 3, 2000.

Contract name changes

- Z125-6516 Old: Attachment for zSeries Workload License Charges
New: Attachment for IBM System z9 and eServer zSeries Workload License Charges
- Z125-6324 Old: zSeries Workload License Charges Exhibit
New: IBM System z9 and eServer zSeries Workload License Charges Exhibit

z800 (zELC, TWLC and EWLC)

- Z125-6587 Old: Attachment for IBM eServer zSeries 800 and 890 Software License Charges
New: Attachment for IBM eServer zSeries 890 and 800 Software License Charges
- Z125-6588 Old: Exhibit for IBM eServer zSeries 800 and 890 Software License Charges
New: Exhibit for IBM eServer zSeries 890 and 800 Software License Charge

z/TPF Amendment to WLC and z800

- Z125-7283 Old: None
New: Amendment for Calculation of z/TPF MSUs

PSLC

- Z125-5205 Old: Attachment for Parallel Sysplex License Charges
New: Same
- Z125-5206 Old: Exhibit — Parallel Sysplex License Charges
New: Same

NALC

- Z125-5884 Old: Attachment for zSeries New Application License Charges
New: Attachment for IBM System z9 and eServer zSeries New Application License Charges

Usage pricing

- Z125-5915 Old: Attachment for S/390 Usage Pricing Charges
New: Attachment for IBM System z9, eServer zSeries, and S/390 Usage Pricing Charges
- Z125-5916 Old: Exhibit for S/390 Usage Pricing Charges
New: Exhibit for IBM System z9, eServer zSeries, and S/390 Usage Pricing Charges
- Z125-5917 Old: Supplement to the Attachment for S/390 Usage Pricing Charges
New: Supplement to the Attachment for IBM System z9, eServer zSeries, and S/390 Usage Pricing Charges

Machines (GOLC, PSLC-E, GMLC, Stand-alone zELC, TWLC, EWLC)

- Z125-3901 Old: IBM System/370(TM), System/390(R), and zSeries Machines Exhibit
New: IBM System z9, eServer zSeries and System/390 Machines Exhibit
- Z125-3902 Old: Non-IBM Machines Exhibit
New: Same

Transition Program (TP)

- Z125-6371 Old: Attachment for Workload License Charges Transition Program Parallel Sysplex
New: Same
- Z125-6373 Old: Supplement for Workload License Charges Transition Program Parallel Sysplex
New: Same

IPLA Sub-Capacity

- Z125-6929 Old: Amendment for zSeries Platform Programs Sub-Capacity Pricing
New: Amendment for IBM System z9 and eServer zSeries Programs Sub-Capacity Pricing

IBM Operational Support Services — SupportLine: Yes

Prices

Contact your IBM representative for pricing information for this announcement.

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