



IBM z/OS V1.4: Enabling and Protecting Your e-business and Preview: z/OS V1.5

Overview

z/OS™ V1.4 offers:

More Ease-of-Use through IBM Project eLiza Technologies to:

- Self-optimize Parallel Sysplex® performance with Workload Manager (WLM) balancing of batch initiators across systems in a sysplex
- Achieve more granular performance reporting with better self-optimization of WebSphere® Application Server
- Enhance Security Server Public Key Infrastructure (PKI), which gives you an improved Digital Certificate Management solution on the z/OS platform
- Ease system setup and help customers quickly and easily enable functions with self-configuring advances and exploitation enhancements to the msys for Setup framework
- Help avoid outages with msys for Operations, an IBM @server advanced self-healing and self-managing technology
- Add more self-configuring capability with new Web-based wizards for z/OS Intelligent Resource Director and IBM @server Security Planner
- Improve the ability to add systems to a sysplex in JES3 environments
- Allow easy and less error prone management of z/OS UNIX® System Services identities for users and groups with new usability enhancements

More Tools to Manage Your e-business that:

- Increase scalability and simplify configuration, renumbering support, and application compatibility with new Internet Protocol Version 6 (IPv6) support
- Enable clock synchronization between clients and servers with a new TCP/IP daemon supporting Simple Network Time Protocol (SNTP)

- Simplify configuration and improve diagnosis capability and serviceability in SNA networks with Enterprise Extender (EE) and SNA enhancements
- Provide additional configuration and definitional flexibility with TN3270 enhancements
- Enhance Cryptographic Services-System SSL, Security Server-LDAP, and Security Server-Firewall Technologies for further exploitation

Improved Application Flexibility to:

- Decompose or compose code that comes from another code page using Unicode Normalization Service
- Increase flexibility and reliability in a Parallel Sysplex with distributed Byte Range Lock Manager (BRLM)
- Provide additional recovery options for choosing which system takes over file system mounts when the current mount owner leaves the sysplex
- Allow SDK for z/OS, Java™ 2 Technology Edition V1.4 product (5655-I56) to better implement short-lived, fast, transactional applications

z/OS V1.5 will offer new DFSMS self-management functions, Enterprise Identity Mapping (EIM), and Multilevel Security.

Planned Availability Date

September 27, 2002

At a Glance

- Increases scalability, may reduce administration costs, and simplifies configuration with support for IPv6
- Achieves better control over mount file locations when a system is taken out of a sysplex
- Allows easy and less error prone management of z/OS UNIX identities for users and groups
- Extends the value of msys for Setup with self-configuring advances and exploitation enhancements to the msys for Setup framework
- Improves Parallel Sysplex performance with WLM balancing of initiators
- Assists in OS/390® to z/OS migration with the z/OS Bimodal Migration Accommodation software

For ordering, contact:

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

800-IBM-CALL

Reference: YE001

Key Prerequisites

z/OS V1.4 runs on these servers:

- IBM @server zSeries z900, z800, or a comparable server
- S/390 Parallel Enterprise Servers — Generation 5 (G5) and Generation 6 (G6) models or comparable servers
- All models of the Multiprise® 3000 Enterprise (or comparable) Server

For a complete description of z/OS V1.4 software prerequisites, refer to the *z/OS and z/OS.e Planning for Installation* (GA22-7504) publication, which is available on the Web at:

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

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>.

Description

What's New in V1.4

z/OS V1.4 offers a number of improvements and enhancements that build upon e-business enablement strengths and can help you get faster and better performance for your IT dollars. These changes, which include more self-management enhancements, improved application flexibility, greater e-business capabilities, and reliability, availability, and serviceability (RAS) improvements, are integral to the delivery and implementation of Project eLiza, IBM emerging technologies that are designed to enable systems to manage and fix themselves.

Also, with z/OS V1.4, IBM is announcing the z/OS Bimodal Migration Accommodation software to assist customers in migrating from OS/390 to z/OS. This addresses customer requests to have a "fall-back" option to 31-bit mode when first migrating to z/OS in 64-bit mode on a z/Architecture server. IBM has reconsidered the investment in 31-bit support on a zSeries server to encourage our customers to move forward. This software is available for six months for each z/OS license (5694-A01) starting from the registration of a z/OS license to a z/Architecture server. It only applies to z/OS Version 1 Releases 2, 3, and 4, and is being provided at no additional charge. This software may not be used in conjunction with z/OS.e (5655-G52).

General availability of the software is concurrent with z/OS V1.4 availability, and is downloadable at the following Web site:

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

Further information about migration and installation can be found here:

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

For information concerning the terms and conditions associated with the use of this software, refer to "Terms and Conditions: z/OS V1R2/3/4 Bimodal Migration Accommodation" in the **Supplemental Information** section of this announcement.

Ease-of-Use through IBM Project eLiza Technologies

Balancing Your Business Workload: z/OS V1.4 improves the balancing of Workload Manager (WLM) managed batch initiators between systems of a sysplex. On highly utilized systems, the number of initiators can be reduced while more are started on low utilized systems. This enhancement can improve sysplex performance with better use of the processing capability of each system.

Workload Manager Reporting Improvements: Customers requesting better integration of applications like WebSphere with WLM in order to obtain workload balancing on a more granular base (including application environments) will be pleased with a new WLM reporting enhancement. It allows performance blocks to be associated with enclaves and supports performance block reporting for multi-period classes. This allows RMF™ to provide more granular performance reporting for WebSphere workloads on z/OS.

z/OS Security Server PKI Services Enhancements: The Public Key Infrastructure component of Security Server

answers the need for a Digital Certificate Management solution on the z/OS platform that has a policy for certificate issuance, revocation of certificates, and Web-based request and fulfillment of certificates. In z/OS V1.4, PKI is updated to include the following enhancements:

- Use of the PCI Cryptographic Coprocessor to generate private keys
- Sysplex enablement of PKI Services
- E-mail notification for completed certificate requests and expiration warnings
- MAIL, STREET, and POSTCODE distinguished name qualifiers support
- PKCS#7 certificate chains support

Security Server Enterprise Identity Mapping (EIM) Beta: A beta version of the z/OS V1.5 Security Server Enterprise Identity Mapping will be available in 4Q2002. The beta code may be used on z/OS V1.4 test environments only and is made available on an as-is basis. Details on how to obtain a copy of the EIM beta code can be found at:

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

Refer to the **Preview: z/OS V1.5** section in this announcement for more information.

Security Server RACF® Support for EIM: RACF commands are enhanced to allow a security administrator to define EIM information for EIM applications to use. The EIM information consists of the LDAP host name (where the EIM domain resides), the EIM domain name, and the bind distinguished name and password an application may use to establish a connection with the domain. The command changes are part of z/OS V1.4 Security Server (RACF).

z/OS Managed System Infrastructure for Setup: msys for Setup is part of IBM Project eLiza and helps customers to enable functions as quickly and easily as possible. The value of msys for Setup is extended in z/OS V1.4 with the delivery of further msys for Setup exploitation and major enhancements to the framework. The msys for Setup framework improvements include:

- **Multiple User Support:** Prior to V1.4, only one user at a time could be logged on to msys for Setup. With V1.4, multiple users can be logged on and work concurrently from different workstations. Furthermore, as part of the user enrollment process, the msys for Setup user administrator can control which msys for Setup workplace functions a user can access.
- **Improved User Interface:** The graphical user interface (msys for Setup workplace) has been redesigned and is now easier to learn and use. These valuable ease-of-use enhancements make working with msys for Setup more intuitive.
- **National Language Support:** Japanese translated versions of msys for Setup panels, messages, and help information are now included in the msys for Setup base element.
- **Job Progress Indication:** The previous notification mechanism did not give any information about job progress after the job had started on the host. There was just a start and completion notification. With z/OS V1.4, an extended program notification mechanism is introduced to support the msys for

Setup user in this area, and is especially helpful for long-running jobs.

In addition to these framework highlights, TCP/IP provides additional configuration capability through msys for Setup:

- The TCP/IP plug-in provides customization of the TN3270 Server.
- End-user definition of port reservation and port sharing is now supported.
- The Communications Server plug-in is enabled for National Language Support, with translation to Japanese provided.

msys for Setup Web Deliverable

In addition to the msys for Setup code in V1.4, a Web deliverable containing the msys for Setup coexistence code will become available on the same general availability date as that of z/OS V1.4. The coexistence code can be installed on z/OS V1.1, V1.2, or V1.3 and z/OS.e V1.3, and provides the same msys for Setup V1.4 framework functionality as delivered in z/OS V1.4. The installation of the Web deliverable is required if multiple z/OS releases, including at least one system with z/OS V1.4 or higher, are to be managed using a single management directory. The Web deliverable is provided as an SMP/E installable FMID and will be serviced via PTFs. All z/OS V1.1-V1.3 customers are encouraged to install this code to base their msys for Setup use on the enhanced level of functionality.

You can obtain this msys for Setup coexistence code and more information at:

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

If you have a configured and running msys for Setup system on a pre-V1.4 release and you decide to install the coexistence Web deliverable, migration support for the z/OS management directory is available.

The LDAP plug-in for msys for Setup that allows LDAP servers to be configured, that was announced in Software Announcement 202-031, dated February 19, 2002, will not be available in z/OS V1.4. Visit the msys for Setup Web site periodically to check for updated news about new msys for Setup exploiters:

<http://www.ibm.com/zseries/msys>

msys for Operations — IBM Project eLiza Support: msys for Ops is part of the IBM @server advanced self-healing and self-managing technology. Introduced in z/OS V1.2, and further extended in z/OS V1.3, attention is refocused in this announcement because of the important role msys for Ops plays in helping customers to avoid outages.

msys for Ops functions control and manage both hardware and software resources; thus, fully automated solutions may be possible. msys for Ops simplifies Parallel Sysplex and z/OS operator interaction, thereby detecting failure situations and reacting to them quickly and precisely. These factors are essential to z/OS availability and directly affect the performance and availability of many business applications.

z/OS customers can improve their operations and system availability by using either:

- Panel-driven operator dialogs that assist in the control of couple data sets, coupling facilities, and managing coupling facility structures

- Background recovery routines that guard against console buffer shortages, long running enqueues, or auxiliary storages

z/OS Wizards: New Web-based wizards simplify your planning and configuration needs by exploiting recommended values and by providing customized checklists and outputs for you to use.

- The IBM @server Security Planner is now available and helps users create a consistent security policy for a mix of IBM @server platforms. It asks a set of questions about security goals, then generates appropriate security settings and recommendations for each of these operating systems in the user's enterprise: AIX®, Linux, OS/400®, Windows®, z/OS, z/OS.e, and OS/390.
- The z/OS Intelligent Resource Director (IRD) Planning Wizard helps to plan your IRD implementation by asking questions about your enterprise setup, and produces a worksheet that describes the issues on each of your systems that you must consider before you can implement IRD. The z/OS IRD Planning Wizard supports z/OS V1.2 and higher, and is planned to be available 3Q2002.

To try out the z/OS wizards, visit:

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

To try out the IBM @server Security Planner, visit:

<http://www.ibm.com/servers/security/planner/>

System Automation for OS/390 V2.2- IBM Project eLiza Support

The new System Automation for OS/390 V2.2 (SA OS/390) (5645-006), a Project eLiza foundation, provides policy-based self-healing which now includes:

- e-business automation that can start, stop, monitor, and recover z/OS applications and resources
- Unique SAP R/3 High Availability automation which makes z/OS the premier platform for SAP R/3 application servers

For more information, refer to Software Announcement 202-189, dated August 13, 2002.

JES3- Refresh MAINPROC: Typically, in a JES3 environment, adding a system to a sysplex has been a challenge because a warm start is required in order to add systems, and that requires a sysplex-wide IPL.

Refresh MAINPROC enables you to add, delete, or change a MAINPROC statement (which is how JES3 defines a member of a sysplex) during hot start with refresh. The major benefit of this function is that, in most cases, it allows you to add systems to your sysplex without having to perform a sysplex-wide IPL.

UNIX Security Management Usability Enhancements

Changes have been implemented to assist RACF administrators with management of UNIX identities for users and groups:

- Administrators now have the ability to automatically assign an unused UID or GID value to a user or group.
- A system-wide setting prevents the assignment of a UID or GID value that is already in use. With the proper authorization, it will be possible for assignment of a shared UID or GID.

- The SEARCH command is enhanced to allow an administrator to determine the set of users or groups that are assigned a UID or GID (this will serve as an alternative for using the UNIXMAP class).
- Administrators can optionally assign a group owner of a new HFS file from the effective GID of the creating process.

In addition, these changes provide the migration path to using the RACF AIM (Application Identity Management) function, which is faster and requires less database space than the UNIXMAP class. The changes also simplify UNIX administration on z/OS and provide options that are consistent with other UNIX platforms.

More System Symbols Supported: z/OS V1.4 supports many more system symbols. This support simplifies management for large Parallel Sysplex environments. System symbols are elements that allow systems to share PARMLIB definitions while retaining unique values in those definitions. System symbols act like variables in a program; they can take on different values, based on the input to the program. z/OS V1.4 supports at least 800 user-defined symbols. The real number available depends on length of name and substitution text.

System-Managed CF Structure Duplexing: A set of architectural extensions to Parallel Sysplex is introduced with System-Managed CF structure duplexing support for coupling facility structures. All three structure types (cache structures, list structures, and locking structures) can be duplexed using this architecture and provide improved availability. The new set of features is quite extensive and, in total, represents a very significant extension to the Parallel Sysplex Architecture.

IBM plans to make System-Managed CF Structure Duplexing available before the end of 2002. Additional details on the availability and requirements for using System-Managed CF Structure Duplexing are available in Software Announcement 102-181, dated June 25, 2002.

In addition, Version 3 of the IBM technical paper **System-Managed CF Structure Duplexing (GM13-0103-3)** includes information about:

- The cost and benefits of using System-Managed CF Structure Duplexing
- Determining which structures should be duplexed in a specific Parallel Sysplex

This paper is available at either:

<http://www.ibm.com/server/eserver/zSeries/psd>

or

<http://www.ibm.com/server/eserver/zseries/library/techpapers/>

e-business Enabling

z/OS Communications Server Internet Protocol Version 6 (IPv6): IPv6 is an evolution of the current version, IP Version 4 (IPv4), and is designed to improve upon the older protocol. Most of today's Internets use IPv4, which is now approximately 20 years old and beginning to experience challenges. IPv6 improves upon IPv4 in a number of ways. For example, IPv6 uses 128-bit addresses, an address space large enough to last for the foreseeable future. It also adds many improvements to IPv4 in areas such as configuration, administration, and management.

The major benefits of IPv6 fall into the following categories:

- **Increased Scalability:** IPv6 uses a 128-bit address space, which has no practical limit on global addressability and provides 340 billion billion unique addresses. Stated another way, this is enough addresses so that every person can have a single IPv6 network with as many as 18,000,000,000,000,000 nodes on it, and the address space would still be almost completely unused. Of all improvements provided by IPv6, this is by far the most important as it addresses the needs of a global, pervasive Internet containing several billion nodes.
- **Potential to Reduce Administration Costs:** The vastly greater availability of IPv6 addresses eliminates the need for private address spaces, which in turn eliminates one of the needs for network address translators (NATs) to be used between the private intranet and the public Internet. NAT administration is both complex and time consuming and may interfere with certain functions.
- **Simplified Configuration:** IPv6 provides improved support for plug-and-play. Stateless autoconfiguration allows a host to configure its own globally routable addresses in cooperation with a local IPv6 router, eliminating much of the manual configuration required for IPv4. IPv6 nodes are also able to automatically learn additional configuration data, such as the link MTU and which neighbor nodes may be reached without sending packets through a router.

Manual configuration of interface addresses may be used in environments where complete local control of address configuration is required.

- **Support for Renumbering:** Hosts are automatically notified by routers of new network prefixes when a renumbering event occurs. Renumbering events may occur when a company changes ISPs, or may occur when the internal network is redesigned.

For IPv6 addresses assigned using stateless autoconfiguration, a host will automatically define and begin using new IP addresses when it learns about a renumbering event. In addition, the host will delete IP addresses that were using the old prefixes.

- **Application Compatibility:** Unmodified applications continue to work and may communicate with partners across the IPv4 network. Enhanced socket APIs are provided that may be used to communicate with partners across either an IPv4 or an IPv6 network. In addition, with the implementation of z/OS dual-mode stack support (a dual-mode stack node is one where a single TCP/IP instance is able to connect to both an IPv4 and an IPv6 network simultaneously), a single IPv6 application can communicate with partners via either the IPv4 or IPv6 network.

IPv6 support in V1.4 requires the use of an OSA-Express adapter running in QDIO mode and is supported only on OSA-Express features on zSeries at driver level 3G (GA3 code) or above. IPv6 requires a zSeries processor.

Networking for Large-Scale e-business

z/OS V1.4 Communications Server e-business networking enhancements include:

- **Simple Network Time Protocol Daemon (SNTPD):** z/OS V1.4 Communications Server includes SNTPD, a new TCP/IP daemon. By providing a Simple Network Time Protocol (SNTP) Server, SNTPD enables

synchronization of time between a client and a server. The availability of this function answers the need of customers who have requested the ability to synchronize clocks between various platforms in their network.

- **SNA Network Improvements and Enterprise Extender:** A number of enhancements are provided to help reduce operational costs, simplify configuration, and improve diagnosis capability and serviceability in SNA networks, particularly those exploiting the Enterprise Extender (EE) function:

1. The dial processing associated with activating EE connections is made more flexible by allowing for periodic automatic redial attempts in the event of initial activation failure (such as can occur if the switched major node is activated prior to full activation of the XCA major node), or failure after connection is established.
2. The output produced when displaying a Rapid Transport Protocol (RTP) connection (pipe) is enhanced to include additional information on the performance of the pipe. The new information includes statistics such as actual send rate, number of packets retransmitted, send and receive byte and packet counts, round trip time, current session count, and details of the last path switch attempt.
3. Trace processing and formatting are enhanced to provide approximate time stamps for each entry when formatting a data space VTAM® Internal Trace.

- **FTP Server and Client Updates**

The FTP Server and Client are enhanced as follows:

1. Improved logging of messages associated with various types of activities, such as MVS™ dataset allocation and deallocation, and connection activation and termination.
2. A more consistent set of information, such as client IP address and port number, provided to all FTP security exits.
3. The provision of a “scratchpad” work area to allow for the passing of information between exit routines.
4. Compatibility of passive-mode (“firewall-friendly”) FTP with the Sysplex Distributor function. Passive-mode FTP compatibility enables the availability advantages of Sysplex Distributor for customers with Web-browser-based FTP.

Additionally, the following enhancements benefit both the FTP Server and the FTP Client:

1. Support of GB18030 (a new multibyte character set standard required by China) by using the IBM-5488 codepage.
2. The ability to define a substitution character to be used when a non-mappable character is encountered during single-byte translation.

- **Enhancements to the TN3270E Server:** The TN3270E Server has several enhancements, including support for the latest TN3270E standards and improved security features:

1. The TN3270 Server Secure Sockets Layer (SSL) support is enhanced to support Transport Layer Security (TLS). SSL is a protocol developed by Netscape to perform highly secure and encrypted data transmission. Transport Layer Security (TLS) is an upwardly-compatible successor to SSL developed by the IETF. The selection of SSL or TLS is negotiated during the SSL handshake and is transparent to the TN3270 Server.
2. You will be able to define sets of TN3270 parameters and mapping statements at a more granular level than port, by associating each set with a specific destination IP address or linkname. This simplifies merging of existing TCP/IP stacks (due to corporate mergers or consolidations) because it allows the existing definitions and parameter sets to be preserved without requiring the assignment of additional TN3270 ports and corequisite client changes.
3. The existing support for CICS® autoinstall for terminals will be extended to provide a similar support for printer types, thereby reducing the labor associated with printer client changes.
4. z/OS CS V1.2 added definitional flexibility by allowing a number of parameters from TelnetParms to also be specifiable on TelnetGlobals and ParmsGroup. z/OS V1.4 broadens this flexibility to include most of the remaining TelnetParms.
5. Further definitional flexibility is provided by the provision of an option to allow a ParmsGroup to be mapped to an LUGroup on LUMAP and PRTMAP statements. This provides a mechanism for setting specific connection parameters based on the LU assigned to the connection.
6. A number of improvements are also available to the LU mapping function, including more flexible wildcard capability, the ability to supply an LU name through a user-written exit routine, the ability to retain an LU name-to-client identifier association for a specified amount of time after disconnect, and the optional issuing of a warning message once assignment from an LUGROUP or PRTGROUP has reached a user-defined threshold of that group’s capacity.

- **OSA SNMP Subagent Support:** With z/OS V1.4, a new OSA SNMP Subagent and OSA-Express MIB, provided by the OSA (Open System Adapter) product, can be used with the Communications Server SNMP support to provide SNMP management data for OSA-Express features configured in QDIO mode. This support removes the prerequisite, Open Systems Adapter/Support Facility (OSA/SF), which is no longer required to manage SNMP data for OSA-Express features configured in QDIO mode running on a zSeries processor.

- **Purge ARP Cache:** This function provides a new command to purge all ARP cache entries for device types that maintain ARP caches. By having the ability to purge all ARP cache entries, entries that contain invalid ARP information can be purged and recreated dynamically at the next usage without waiting for ARP entry timeouts. This function can also be used to purge IPv6 neighbor cache entries.

- **OSA-Express QDIO Broadcast Support:** This function provides support for sending and receiving broadcast data through OSA-Express features when configured

in QDIO mode. This allows customers to configure their OSA-Express features in QDIO mode when using applications that require broadcast support, such as DHCP and routing applications using Routing Information Protocol (RIP) Version 1.

Security for Your e-business: Cryptographic Services-System SSL is updated to maintain currency for exploitation and interoperability. There are also updates to Security Server-LDAP and Security Server-Firewall Technologies.

Cryptographic Services- System SSL Enhancements

Improved SSL Performance: The System SSL code in V1.4 has been rewritten to improve performance. Current performance measurements with z/OS V1.4 suggest that on a Model 216 z900, the maximum rate attainable is up to 7000 SSL handshakes per second. The previous measurement on a Model 216 z/900 with z/OS V1.2 had a maximum rate of over 4300 SSL handshakes per second.

IPv6 Support for System SSL: This support allows System SSL to be used in an IPv6 network configuration. It also enables System SSL to support both IPv4 and IPv6 Internet protocol addresses.

CRL Caching: Today, SSL supports certificate revocation lists (CRLs) stored in an LDAP server. Each time a certificate needs to be validated, a request is made to the LDAP server to get the list of CRLs. CRL Caching enables applications to request that the retrieved list of CRLs be cached for a defined length of time. This improves performance and alleviates the need to contact the LDAP server each time validation has to be performed.

Support for the AES Symmetric Cipher for SSL V3 and TLS Connections: System SSL supports the Advanced Encryption Standard (AES), which provides data encryption using 128-bit or 256-bit keys for SSL V3.0 and TLS V1.0 connections.

Support for Digital Signature Standard (DSS) Certificates: System SSL has been enhanced to support Digital Signature Standard certificates defined by the Federal Information Processing Standard (FIPS) 186-1 Standard. These certificates are created through the gskkyman certificate management utility and can be used to authenticate the client application during the SSL handshake when client authentication is requested.

Enhanced Environment Close: System SSL now permits existing connections to remain active and run to completion after their SSL environment has been closed. This removes the requirement that the customer application must manage the SSL environment until all SSL connections have been closed.

Enhanced PKCS#12 Support: We have upgraded System SSL support of PKCS#12 files to new RFC levels. This upgrade enhances the ability of System SSL to interoperate with other certificate management products.

Sysplex Session ID Caching: The sysplex session cache support makes SSL V3.0 and Transport Layer Security (TLS) V1.0 server session information available across the sysplex. An SSL session established with a server on one system in the sysplex can be resumed using a server on another system in the sysplex. This can be performed as long as the SSL client presents the session identifier obtained for the first session when initiating the second session.

Externalization of CMS APIs: Allows you to write certificate management applications to interact with System SSL. Also allows System SSL applications to be

written to communicate with other applications using the PKCS#7 standard.

Serviceability: System SSL is being enhanced to support two flavors of debugging. It will continue to support the environment variable setting as well as debugging through a started task. The started task will allow for more dynamic component debug tracing. Debug tracing has also been enhanced to support different debug levels (Entry/Exit to dumps, and so forth). The enhanced debug capabilities provide a mechanism for customers to provide Service personnel with information about their failing scenarios. In addition, the started task provides applications that do not have control over environment variable settings to request tracing.

User ID Support of RACF Key Rings: This support allows SSL applications that are using a RACF (SAF) key ring to no longer be required to be the owner of the SAF key ring. With the appropriate SAF permissions, a user ID belonging to the executing application does not have to be the owner of the key ring. A non-owner is allowed to read certificates that do not have private keys. This allows for key rings to be shared among applications that do not need the certificate's private key. For applications that do not need to have certificates with private keys, this helps to simplify the administration of key rings.

System SSL of RSA Private Keys Stored in ICSF: In OS/390 V2.8, System SSL added support that allowed the RACDCERT command to be used to manage an SSL application's private keys and certificates. RACDCERT allows a certificate's private key to be stored either directly in the RACF database or in ICSF. However, the OS/390 V2.8 System SSL support was restricted to cases where a certificate's private key is stored in the RACF database. With z/OS V1.4, support is introduced that will allow a certificate's private key to reside in ICSF.

Fail-over LDAP: You can now specify a list of Security Server-LDAP servers to be used for storing certificate revocation lists (CRLs). When certificate validation is being performed, this list will be used to determine which LDAP server to connect to for the CRL information. Fail-over LDAP also provides greater availability by not being dependent on a single LDAP server.

Security Server LDAP Enhancements

Mandatory Authentication Methods: z/OS V1.4 provides all of the authentication methods that are defined as mandatory in IETF RFC 2829. The CRAM-MD5 and DIGEST-MD5 authentication methods are added. The methods avoid flowing the user's password over the connection to the server. The LDAP Server, the C/C++ APIs, and the utilities are updated with this support. Compliance with RFC 2829 allows you to use any of these authentication methods with z/OS LDAP. In addition, interoperability is improved for any applications that make use of these methods.

TLS: z/OS LDAP now provides support for Transport Layer Security (TLS) as defined in IETF RFC 2830. TLS support allows applications to make use of the TLS protocol. It also provides support, via an LDAP extended operation, that allows applications to selectively activate TLS for certain LDAP operations at the application's discretion. In addition, the availability of TLS support allows you the option of running either TLS or SSL.

Server Activity Log: This enhancement improves logging done by the LDAP Server. The activity log now shows the LDAP operations being requested and the requestor. Various options give flexibility in what is logged. In addition, this capability enhances reliability, availability, and serviceability of the LDAP Server. It also provides compatibility with some Netscape-provided logging.

Modify DN: Today the LDAP Server only supports modification of the most significant portion of a Distinguished Name (DN). z/OS has expanded this support to allow any portion of the DN to be changed. This essentially means that relocation of an entry, and possibly a subtree, to a different location in the directory information tree (DIT) is possible. The availability of this support further completes the LDAP Version 3 support defined in RFC 2251, and allows easier management of directory content by allowing movement within the DIT.

ACL Updates: Access control has been improved with the addition of “deny” support and “attribute level access control.” These enhancements allow finer-grained access control definitions to be established. These capabilities exist in the SecureWay® Directory products on other IBM platforms. With this support, interoperability and functional equity with other IBM-provided LDAP directory products are improved, and flexibility of the access control model is increased.

Entry UUID: This support adds a UUID to each entry, allowing unique identification of the entry in the DIT throughout its lifetime. Even if an entry’s Distinguished Name changes, its UUID will not. This identifier can be used by applications and middleware that need to ensure they are working with the same entry over time.

LDAP Message Support: With z/OS V1.4, LDAP adapts its message severities to those used by other z/OS products. Also, the programs shipped as part of the LDAP product have been updated to take advantage of new support which allows the program itself to determine whether any of its messages should be written to the system console.

Security Server-Firewall Technologies Enhancements

Enhance Security Server-Firewall Technologies to Provide Sysplex-wide Security Association Support: Virtual Private Network (VPN) support is added to detect when a Dynamic Virtual IP Address (DVIPA) in a sysplex environment is moved to, or from, a firewall stack within a sysplex. When a DVIPA is moved in this manner, an attempt is made to automatically re-establish the security associations (SAs) associated with that DVIPA on the target stack. The ISAKMP server on the system assuming control of the DVIPA will attempt to renegotiate new SAs to replace the ones that were on the system in the sysplex that previously owned the DVIPA. When used in conjunction with z/OS Communications Server’s TCP/IP DVIPA takeover/give-back support, this function provides customers with improved availability of IPSec security associations.

Application Flexibility

Support for Unicode Normalization Service: Programmers can now normalize (decompose or compose) characters that come from another code page and can apply normalization forms to have the same meaning.

REXX Functions: z/OS V1.4 extends the REXX language on z/OS when used in a UNIX System Services MVS REXX environment. It includes functions for standard REXX I/O. A number of I/O stream commands are provided to help control stream processing. Additional functions are also included to easily access some common file services and environments variables. Also included with this package is the ability to interrupt a running REXX program and enter an immediate REXX command such as TS to start interactive tracing. Overall, the availability of this code will provide greater interoperability of z/OS as compared to other platforms.

Distributed BRLM in a LFS Sysplex: With this release, z/OS implements the first phase of Moveable Byte Range Lock Manager (BRLM) in a sysplex. Moveable BRLM provides the capability of maintaining the byte range locking history of applications, even when a member of the sysplex dies. The first phase will focus on distributing the locking history across all members of the sysplex. As a result, many applications that lock files that are locally mounted will be unaffected when a remote sysplex member dies. Movement away from a centralized to a distributed BRLM will provide greater flexibility and reliability.

Shared HFS Dead System Recovery Enhancements: Currently, when a system goes down, dead system recovery moves file systems that have been defined as AUTOMOVE=YES to another system in the sysplex. This is done in a random way. z/OS now provides a method for customers to indicate where file systems should be placed when a system leaves the sysplex instead of being moved in an unpredictable fashion. The availability of this function will improve performance and workload balancing.

zFS and SMB Enhancements: The z/OS V1.4 Distributed File Service support includes zFS and SMB enhancements.

Functional, RAS, and performance enhancements to SMB include:

- Additional workstation domain user ID to MVS user ID mapping options that allow a single OMVS user ID to be mapped to all users in a specific Window domain
- Reduction of system event overhead associated with record file system (RFS) access through the SMB file server
- Improved directory read performance when accessing very large PDS or PDSE file systems through the SMB file server
- Improvements that facilitate problem identification when using the SMB server to access an RFS
- Enhancements in the SMB file server to exploit zFS performance

zFS or zFS-related administration, system management, performance, configuration support, and scalability enhancements include:

- Ability to reconfigure the file system configuration options without stopping and restarting the file system.
- Dynamic use of secondary allocation for a zFS aggregate (data set) or file system.
- Use of file systems in different zFS aggregates with the same name. This allows administrators to restore aggregate data to a new aggregate and simultaneously mount a file system from the new and original aggregate to recover file system data.
- Use of Static system symbol (&SYSxxxx) substitutions in the IOEFSPRM configuration file. This allows system-specific information to be specified and enables the configuration to be shared between systems in a sysplex.
- Improved messages for the file system format and salvage commands.
- Improvements in the UNIX System Services automount support for zFS.
- Addition of ISHELL support for zFS.

- zFS aggregate awareness in UNIX System Services. This allows the automove of zFS file systems in the same zFS aggregate (data set) to the same system in a sysplex when the owning system goes down.
- Ability to perform I/O operations in parallel for a zFS aggregate that spans multiple DASD volumes. This provides improved performance when using multi-DASD volume aggregates.
- Reduction of primary address space requirements by using a dataspace for the system log cache. This protects log file data from an inadvertent storage overlay.
- Support for 64-bit user virtual buffer addresses which includes DATOFF support for buffers with real rather than virtual addresses.

IBM SDK for z/OS, Java 2 Technology Version 1.4: IBM SDK for z/OS, Java 2 Technology Edition, V1.4 (5655-I56), includes enhancements which allow execution in a persistent reusable mode. These enhancements to the Java Virtual Machine technologies address the specific high-performance capabilities of short-lived, fast, transactional applications. The overhead in initializing and terminating these types of applications implemented in Java should be substantially reduced, storage management more efficiently implemented, and transactions physically isolated from one another.

For more information, refer to Software Announcement 202-187, dated August 13, 2002.

XML Toolkit Support for z/OS and OS/390: IBM XML Toolkit for z/OS and OS/390, V1.4 (5655-J51), is designed to provide a valuable infrastructure component to assist you in creating, integrating, and maintaining your business-to-business (B2B) solutions.

IBM XML Toolkit for z/OS and OS/390 (V1.4) provides the latest in eXtensible Markup Language (XML) parser and eXtensible Stylesheet Language Transformations (XSLT) processor support for both Java and C++.

For more information, refer to Software Announcement 202-185, dated August 13, 2002, or visit

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

Functions for zSeries Processors

IBM also provides additional functions for its zSeries servers, z800 and z900:

- Support of FICON™ Cascaded Directors for a two switch (single hop) configuration, which will be delivered in conjunction with IBM's remarketed INRANGE FC/9000 and McDATA Intrepid FICON Directors,
- Availability of 2 Gigabits per second (Gbps) link data rates for the zSeries FICON Express features, and
- Multiple Secondary Router Settings support to set multiple secondary routing partitions (only one Primary) for QDIO.
- Enhancements to Geographically Dispersed Parallel Sysplex™ (GDPS™) which include:
 - GDPS/Peer-to-Peer Remote Copy (PPRC) hyperswap function — Extends the Parallel Sysplex redundancy to disk subsystems
 - Peer-to-Peer Virtual Tape (VTS) support for a GDPS/Extended Remote Copy (XRC) configuration

- Enhanced HMC support for GDPS/PPRC and GDPS/XRC configurations

For more information, refer to Hardware Announcement 102-209, dated August 13, 2002.

e-care

Order z/OS through the Internet: ShopzSeries (formerly SHOPS390) 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. and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or Business Partner) to handle your order via the traditional IBM ordering process.

For more details and availability, visit the ShopzSeries Web site at:

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

z/OS Service Through the Internet: Effective March 29, 2002, IBM Service is now available through ShopzSeries as an Internet-based, strategic software tool. Through Service in ShopzSeries, customers can quickly and easily order and receive corrective or preventive service electronically over the Internet or by standard physical media. For preventive service, customers can order just critical service (HIPERs and PTFs that resolve PE PTFs), the latest recommended service (which includes all critical service), or all available service. Service in ShopzSeries reduces customers' research time and effort by using their uploaded SMP/E Consolidated Software Inventory (CSI) so that all applicable service, including reachahead service, for the installed FMIDs in the target zones is selected. ShopzSeries also uses the CSI information to limit the size of the service order, sending applicable service that has not already been processed by SMP/E. IBM Technical Support is available through RETAIN® for problems and Q&A.

For more details, visit the ShopzSeries Web site at:

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

ServerPac Enhancements

Improvements now available with ServerPac:

- Enhance the installation dialog to allow customers to select either JES2 or JES3 (or both) to be restored from the ServerPac tapes during installation. It also allows the customer to specify whether the SMP/E zones for the selected JES are to be merged with the SMP/E zones for the OS/390 or z/OS BCP. The installation jobs are then generated accordingly.
- Change the CustomPac Installation Dialog to use the LE Runtime Library, SCEERUN. This eliminates the PL/I Runtime modules formerly included with the dialog and makes it easier to use other LE-based ISPF applications at the same time.
- Support mixed and lower-case HFS service directory names by the variables option of the installation dialog.

- Provide unique default high-level qualifiers to be used for the CPAC data sets in subsystem orders, including CICS, DB2®, IMS™, NCP, and WAS-only. Also, unique middle-level qualifiers are used for SMP/E global CSI names and subsystem data sets. The availability of these unique high-level and middle-level qualifiers makes it easier for customers to install subsystem and operating systems ServerPacs for the same system.
- Provide support to enable z/OS Managed System Infrastructure for Operations (msys for Operations), which provides automation and ease-of-use functions for both z/OS system and sysplex resources.

In addition, ServerPac is enhanced to provide several installation improvements, such as:

1. The capability to print the “installation jobs” table display
2. New reports (REPORT CROSSZONE and REPORT SYSMODS) to help identify missing PTFs on the new target system and synchronize the service levels of different products when the products are installed in different zones
3. Removing the restriction that forces data sets to be cataloged in the master catalog

SystemPac for z/OS V1.4: SystemPac offers the capability to build a system with integrated subsystems in either full volume dump/restore format or dataset copy format. The full volume dump/restore format enables you to install z/OS without using the dialog. Installation is done via pack restore using DFSS or FDR (if the vendor product is selected in the order).

SystemPac includes the installation of IBM and selected third parties’ software vendor products in a single package. There are more than 34 vendors and more than 350 vendor products available today. The vendor products ordered within SystemPac will be verified by IBM to ensure that licenses with the offering vendors are in place before delivery is completed. For a list of the available vendor products offered with SystemPac, visit:

<http://www.ibm.com/services/uk/isv/vendors.html>

After the delivery of the SystemPac, selective follow-on service tapes (HIPER fixes and PTFs resolving PEs) can be shipped at specified intervals and frequencies based upon the customer’s selection at ordering time.

Additionally, SystemPac comes with the option of having z/OS Communications Server enabled. This feature, coupled with the enablement of z/OS UNIX System Services in full function mode, allows the customer to easily tailor the default setup provided to match their standard for Internet access after the system is restored and IPLed. For details, visit:

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

SystemPac is further enhanced with the default enablement of WLM Goal Mode, MVS System Logger, Resource Recovery Services, and the following products when they are ordered in a SystemPac.

- **CICS Transaction Server for z/OS & OS/390 V1.3 (5655-147) and V2.2 (5697-E93)**
 - CICS Log Manager
 - CICS Web Support
 - CICS 3270 Bridge
 - External CICS Interface
- **DB2 Universal Database® Server for OS/390 V6.1.0 (5645-DB2) and DB2 Universal Database Server for OS/390 and z/OS V7.1.0 (5675-DB2)**

- DB2 ODBC
- DB2 JDBC
- DB2 Net.Data®
- WLM-established Stored Procedures

- **IMS V7.0 (5655-B01)**

- **MQSeries® V5.2.0 for z/OS and OS/390 (5655-F10)**

- **WebSphere Application Server V4.0.1 for OS/390 and z/OS (5655-F31), including its prerequisites:**

- Selected products, elements, features, and functions of z/OS (such as z/OS UNIX System Services, Security Server (RACF), Communications Server, IBM HTTP Server, WLM Goal Mode, Resource Recovery Services)
- IBM Developer Kit for OS/390, Java 2 Technology Edition (5655-D35)
- DB2 V7.1.0 (5645-DB2)

With Full Volume Dump and the above enablements, you can now have a true load and go system for z/OS and the WebSphere Application Server ready on IPL. This unique capability is only available with SystemPac. The above enablements also allow installations to exploit features that come with the various subsystems and provide ease in migrating to e-business applications.

SystemPac is built according to a copy of your IODF. The IODF can be sent to selected worldwide production centers via the Internet. To get access to the Internet application, visit:

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

- Select your location or country
- Access the application “IODF/Dataset Shipment”

SystemPac is designed for those who have limited skill or time to install or upgrade z/OS but who want to install or upgrade to exploit z/OS functions in e-commerce or other areas.

You can find more information about SystemPac on the Web at:

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

Reliability, Availability, and Serviceability (RAS) Enhancements

- **Operator Messaging Architecture Enhancements:** In the 4th quarter of 2003, IBM @server zSeries will begin to deliver on our Consoles strategy to enhance the operator messaging architecture of z/OS. The first enhancements will focus on improving system availability by minimizing impacts related to WTO buffer shortages. These enhancements will be made available as a separately orderable feature on z/OS V1.4. Delivering the enhancements to Consoles as a z/OS feature gives new and existing z/OS V1.4 customers the ability to order and install the feature at the customer’s convenience. The new functions are enabled when the feature is installed, with no migration requirements.
- **Unauthorized CTRACE Writer:** For unauthorized users of CTRACE, z/OS now offers a writer process that will asynchronously copy trace records from in-storage trace buffers to an external data set. This is similar to the External Writer currently supported by CTRACE. This function is important to Java users. Now Java can build its JVM trace using CTRACE for non-CICS environments (for example, DB2, CB). Because Java trace records are typically written at a high rate, and

the JVM process could terminate as soon as it's done, it is necessary, via Unauthorized CTRACE writer, to "harden" the trace records to an external medium- a data set.

- **Message Time Ordering (Sysplex Timer® Connectivity to Coupling Facilities):** As processor and Coupling Facility link technologies have improved over the years, the synchronization tolerance between systems in a Parallel Sysplex has become more rigorous. In order that any exchanges of time-stamped information between systems in a sysplex involving the Coupling Facility observe the correct time ordering, time stamps are now included in the message-transfer protocol between the systems and the Coupling Facility.

For more information about this new capability and new Parallel Sysplex hardware configuration requirements, refer to Hardware Announcement 102-123, dated April 30, 2002.

- **JES2 and JES3 Enhancements:** JES2 and JES3 have made the following RAS improvements:
 - Redesigned interfaces between user address spaces and the JES2 address space remove WAIT/POST bottlenecks at End of Memory and End of Job, which results in improved processing of large dumps.
 - To reduce multisystem outages due to checkpointed data structure errors, z/OS has broadened the scope of the verification and detection code that is used in JES2 processing to detect and recover these kinds of errors.
 - Other improvements allow for JES3 startup despite errors that might prevent it from initializing and also allow the customer to fix the error with relative ease.
 - Further improvements to JES2 Resource Monitor enhance JES2's ability to identify and report situations to which customers can react and respond without having to resort to an IPL.
- **RAS Improvements in a Java Environment:** Enhanced Pthread Quiesce provides enhancements to pthread quiesce that reduce quiesce latency or overheads and improves reliability, availability, and serviceability in a Java environment. Pthread Quiesce also makes internal optimizations possible.
- **ECSA/CSA Storage Improvements:** DFSMSdfp™ now supports a new PDSE address space to relieve the ECSA usage. Error recovery has also been improved to address end-of-task and end-of-memory terminations for user task abends, operator initiated job cancelations, and forced address space terminations. These improvements are available through PTF UW99417 on OS/390 V2.10 through z/OS V1.2 and through PTF UW99418 on z/OS V1.3 and V1.4.

Euro Sign Support: z/OS V1.4 includes Euro Currency Symbol support for an additional set of countries and languages.

Important Web sites

- z/OS Web site:
<http://www.ibm.com/servers/eserver/zseries/zos/>
- General Q & A:

Product Positioning

IBM announces the fourth release of z/OS, the flagship operating system of the IBM @server mainframe. z/OS V1.4 and z/OS.e V1.4 will be generally available on September 27, 2002. V1.4 continues IBM's investment in z/OS as its strategic high-end operating system. z/OS, together with the zSeries servers, provides leading autonomic technologies such as the self-optimizing flexibility of Intelligent Resource Director, the automation of msys for Operations, and the fast virtual server networking of HiperSockets.

New features of z/OS V1.4 include extended TCP/IP network addressing with IPv6 protocols, more self-optimization of batch workloads across a sysplex cluster, more self-configuring with improvements to msys for Setup, and enhancements to LDAP security and authentication.

New Release Strategy for z/OS

IBM continues to address customer requirements with the introduction of a new release strategy for z/OS and z/OS.e. Customers should migrate to z/OS V1.4 and exploit the rich functions of z/OS, zSeries servers, and middleware. z/OS V1.4 will also be the base for exploiting future zSeries server enhancements.

IBM will no longer be delivering z/OS releases on a six-month schedule responding to customer feedback that the current release cycle is too short and complicates customer migration plans. The vast majority of OS/390 and z/OS customers migrate to new releases every 12 to 18 months. The new z/OS release plan will enable customers to take advantage of z/OS V1.4 as a staging release. Less frequent releases in the future will allow IBM to provide even more integration testing for z/OS and related IBM middleware.

New z/OS and z/OS.e functions will continue to be delivered between releases through the normal maintenance stream or as Web deliverables. In addition, significant new function may be delivered between releases as features of the product. For example, in 4Q2003, a new feature of z/OS V1.4 is planned to be available that provides enhancements to console availability.

The next z/OS and z/OS.e release, z/OS V1.5, is planned to be delivered in first quarter 2004. This release will not require a zSeries server; however, many functions of z/OS will not be available when running on older technology servers (G5/G6/MP3000). The next release after z/OS V1.5 is planned to be available in September 2004. Starting with the September 2004 release, it is IBM's intention to deliver z/OS and z/OS.e releases on an annual basis.

z/OS continues to be IBM's strategic high-end operating system, and will maintain its leading edge in mainframe characteristics, including scalability, availability, flexibility, and autonomic computing.

For the zSeries customer, z/OS, and not OS/390, is an intended base for future IBM Grid and Project eLiza enhancements, extending the zSeries platform's industry leading quality-of-service, availability, and security capabilities to distributed, heterogeneous infrastructures. zSeries with z/OS will be uniquely positioned as a key component in eUtility, Transactional, and Business Process Grids, and autonomic computing environments.

Statement of Direction

IBM plans to take the following actions in the future.

Refer to the corresponding **Statement of Direction** section in the Supplemental Pages for more detailed information.

- The next z/OS release, z/OS V1.5, is planned to be delivered in 1Q2004. The next release after z/OS V1.5 is planned to be available in September 2004. Starting with the September 2004 release, it is IBM's intention to deliver z/OS releases on an annual basis.
- IBM plans to remove OAM (Object Access Method) support for Filenet 9246 optical libraries, 9247 optical drives and 12-inch optical media in z/OS V1.5.
- IBM intends to position ShopzSeries as the primary ordering and delivery method for software service on the z/OS and OS/390 platforms.
- IBM plans to deliver 64-bit virtual storage addressing for the DB2 for z/OS product in a future release. The future release of DB2 for z/OS, with 64-bit virtual address support, will be able to execute on IBM zSeries 900 (z900) and IBM zSeries 800 (z800), or equivalent, running z/OS V1.3 or later, not z/OS V1.2, as stated previously.

These statements represent current intentions of IBM.

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

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

Hardware and Software Support Services

SmoothStart™ /Installation Services

IBM SmoothStart Services, onsite implementation and training startup service, is designed to accelerate your productive use of your IBM solution. This service is provided by IBM Global Services or your IBM Business Partner at an additional cost. For additional information, refer to Services Announcement 697-004, dated March 25, 1997, or contact your IBM representative and ask for SmoothStart Services for z/OS.

Reference Information

- Software Announcement 200-352, dated October 3, 2000
- Software Announcement 200-354, dated October 3, 2000
- Software Announcement 201-044, dated February 27, 2001
- Software Announcement 201-072, dated March 27, 2001
- Software Announcement 201-258, dated September 11, 2001
- Software Announcement 201-257, dated September 11, 2001
- Software Announcement 201-248, dated September 11, 2001
- Software Announcement 201-342, dated November 27, 2001

- Software Announcement 202-032, dated February 19, 2002
- Software Announcement 202-031, dated February 19, 2002
- Software Announcement 202-036, dated February 19, 2002
- Hardware Announcement 102-052, dated February 19, 2002
- Software Announcement 202-050, dated March 5, 2002
- Hardware Announcement 202-105, dated April 30, 2002
- Hardware Announcement 102-123, dated April 30, 2002
- Software Announcement 102-181, dated June 25, 2002
- Software Announcement 202-191, dated August 13, 2002
- Software Announcement 202-189, dated August 13, 2002
- Software Announcement 202-185, dated August 13, 2002
- Software Announcement 202-187, dated August 13, 2002
- Hardware Announcement 102-209, dated August 13, 2002

Trademarks

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IBM US Announcement Supplemental Information

August 13, 2002

Preview: z/OS™ V1.5

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

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

Ease-of-Use through IBM Project eLiza Technologies

Enhancements to Data Access and Storage Management: In z/OS V1.5, new DFSMS functions will focus on improving business continuance by adding features that reduce the occurrence of system outages and enhance disaster recovery capabilities. The new functions will also improve your business efficiency by providing better system performance and throughput and by providing usability enhancements that increase storage administrator productivity. Security will be enhanced by optionally hiding names of data sets from unauthorized users and by allowing DFSMSHsm™ commands to be controlled by RACF® facility class. In addition, some new functions that will be standard with z/OS V1.5 DFSMS that did not require extensive integrated system testing were made available in 2002 for earlier releases of DFSMS. The enabling PTF and APAR information for these functions is contained below in the appropriate sections.

DFSMS plans to improve business continuance with the following:

- **VTOC Index Rebuild:** This function will allow you to rebuild a VTOC Index when a volume is online to other systems. You will not need to vary a volume offline to sharing systems to perform the rebuild. This function will also be made available on OS/390® V2.10 through z/OS V1.4, with maintenance. The function requires a yet to be announced new release of ICKDSF (5655-257). This level of ICKDSF will have to be installed on lower-level systems that share DASD. You will be able to automate this process by recognizing the IEC604I message to the console when an index gets disabled and when scheduling a ICKDSF job to rebuild the index.
- **Enhanced Integrity of Physical Sequential Data Sets:** This function will address data loss by inadvertent use of sharing specifications on concurrent output by multiple users.
- **Prevent Generation Data Set Overlay:** An installation will be able to choose to not automatically reclaim and overlay a newly created (+1) generation of a GDG in deferred roll-in state when failures prevent cataloging the generation by one job while another job that creates a +1 generation is being started.

- **Enhanced Data Integrity of VSAM Data Sets with AIXes:** If insufficient buffers are available to complete upgrade processing, attempts to back out can fail when you use Local Shared Resources (LSR) and upgrade processing with many alternate indexes (AIXes). This can be avoided by increasing the number of LSR buffers. VSAM processing will be enhanced to determine the number of strings necessary before processing. If insufficient buffers have been specified, the application will be notified with an option to retry the request.
- **VSAM Message Enhancements:** Several VSAM messages will be enhanced. VSAM multiple single line messages will be converted to single multi-line messages that can help customers scan message logs. VSAM OPEN message IEC161I 052(sfi)-xxx will be enhanced to provide the name of the first job causing a SHAREOPTION violation. The VSAM EOVS messages IEC070I 032(sfi)-xxx and IEC070I 034(sfi)-xxx will be enhanced to provide sfi information where appropriate for improved diagnostics.
- **VSAM Extent Reduction:** The number of extents allowed with VSAM is 255 per data set. VSAM End of Volume processing will be enhanced to attempt to enlarge adjacent extents when extending on the same volume. The enhancement will reduce the total number of extents, and thus reduce the requirement to defrag volumes with VSAM data.
- **SYMREC Records Created for Diagnostics:** With this enhancement, Catalog will create SYMREC records for certain return and reason codes to improve Catalog diagnostic capabilities. This enhancement can eliminate the need for SVC or SLIP dumps.
- **Service Task in Recall Termination:** Catalog allows the termination of a service task that is waiting for a service in another address space (recall). At times, tasks may become hung waiting on recalls to other address spaces that will never complete. This enhancement will terminate the hung task.
- **Operator Warning on Catalog Usage Threshold:** An operator warning message will be added and will display when a Catalog approaches a user selectable threshold for the number of Catalog extents. A Catalog is limited to 123 extents. This support will also be available in z/OS V1.3 with APAR OW54162.
- **Relief for Striped Sequential Data Sets:** With this function, you will be able to stripe on physical sequential data sets up to 59 volumes. This is intended to relieve the restriction that these striped data sets cannot be extended on additional volumes. Prior releases of DFSMS that support striping will be able to access these data sets but will not be able to create striped data sets with more than 16 volumes.

DFSMS plans to improve business efficiency with the following:

- **DFSMSHsm Secondary Space Management Multitasking:** This function will allow installations to

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>.

reduce the time it takes to perform the secondary space management functions of migration cleanup and ML1 to ML2 migration.

- **DFSMSshm Support for Larger CDSes:** With this support, you will be able to make HSM control data sets larger than 4 GB in size (VSAM extended addressability) under both the CDSQ and CDSR serialization environments. Extended Addressability for these control data sets was previously restricted to accesses in the VSAM RLS mode.
- **Multi-Tiered Storage Groups:** The “tiering” concept will allow you to utilize the most-preferred storage group first and move down to lower tiers to the less-preferred storage groups only when allocation cannot be satisfied in the higher tiers.
- **Improved Management of SMS Error Messages:** In the z/OS V1.3 release of DFSMS, SMS data set allocation failure messages could be written to hardcopy console log to allow automation products to take corrective action. z/OS V1.5 will extend this to failures during data set extensions to new volumes.
- **Improved Management of Storage Group Allocation Threshold:** SMS will now write a new message to the hardcopy console log when it detects that a storage group exceeds the allocation threshold. You will be able to use automation products to kick off HSM space management or add new volumes to the storage group to address increased workloads.
- **Save ACDS as SCDS:** With this function, a storage administrator will be able to save an ACDS as an SCDS in case you lose your SCDS or when you want to save the changes made to the active configuration through operator commands and use the configuration as a Source Control Data Set.
- **VSCR for CICS® and IMS™:** In z/OS V1.3 DFSMS, the DSAB system control block was allowed to reside above the 16 MB line for DB2® and IMS Fast Path dynamically allocated data sets accessed using the Media Manager Services interface. With V1.5, this will be allowed for all VSAM data sets and IMS OSAM data sets accessed by IMS DL/1. The VSCR relief will be 96 bytes per DSAB or nearly a million bytes for 10,000 data sets allocated in an address space. This function will require changes to CICS and IMS for exploitation.
- **Reading z/OS UNIX® System Services Files with BPAM:** This function will allow you to specify a USS directory with the PATH parameter on the DD statement when reading with BPAM. BPAM will regard each z/OS UNIX directory like a PDS or PDSE directory and will regard each file as a member. Library concatenations of PDS and PDSEs will be able to include HFS or zFS directories. You will no longer need to copy HFS or zFS files into partitioned data sets to include them in your programs. This function will not include support for executables.
- **JOB/CAT/STEP/CAT Selectable Support:** Many installations no longer use JOBCATs or STEPCATs because they cannot be used with SMS. There are significant performance considerations that need to be addressed to support JOBCATs or STEPCATs even when an installation does not use them. Catalog code will be enhanced to make the use of JOBCATs and STEPCATs optional and avoid the performance considerations if they are not used.
- **VLF Cache Purge Reduction:** Catalog VLF cache processing will be improved to remove entries that are not used. The improvement may be able to reduce the

number of times the VLF cache must be purged and, as a result, will improve caching performance.

- **Automatic AUTOADD for First ECS Connector:** Currently, AUTOADD for Extended Catalog Sharing (ECS) using the Coupling Facility must be manually issued. In z/OS V1.5 DFSMS, a parameter will be added to issue AUTOADD at IPL for the first connecting system.
- **DFSMSdfp™ OAM Object-Improved Volume Management:** Volume management will be improved for optical and tape volumes owned by OAM object access. These include:
 - Automatic expiration of OAM tape volumes
 - Automatic expiration of optical and tape volumes containing OAM backup data
 - New RECYCLE and DELETE options on MOVEVOL command
 - New DELETE option on RECOVER command

DFSMS plans to improve tape management as follows:

- **Utilizing Large-Capacity Tape Cartridges for File Stacking:** File stacking will be enhanced to allow a program to create and access up to 65,535 files per volume or per aggregate of volumes. This function will be available for input access for all programs if the stacked files are cataloged.
- **DFSMSrmm™ Backup Improvements:** You can run backup of the RMM CDS and journal at any time, even during inventory management. This enhancement will enable you to backup and clear just the journal data set so as to minimize the time required. When you backup the journal without the CDS, the backup is non-intrusive, and this enables CDS updates to continue throughout the backup.
- **DFSMSrmm Duplicate Volume Support:** DFSMSrmm will support multiple, physical volumes with the same internal volume serial number. A duplicate volume will be defined to RMM using a unique volume serial number together with the VOL1 label volser. To use this support, a duplicate volume must be a physical non-scratch standard label volume that can be used for input and output requests. On return to scratch, the volume will be relabeled to be a non-duplicate volume.
- **DFSMSrmm OAM Object Support:** With this support, DFSMSrmm will be able to automatically handle the release and return to scratch of OAM object tapes that are returned to the system scratch pool.
- **DFSMSrmm Control Information:** The DFSMSrmm LISTCONTROL command will be updated to display the CDS percentage used and journal status. The operator “QUERY ACTIVE” command will be updated with the journal status information. When the status of the journal changes a new message will be issued to notify the operator.
- **DFSMSrmm Command Authorization:** DFSMSrmm will optionally support the use of security profiles in the RACF DATASET class as a way to authorize the use of certain RMM TSO subcommands against data set and volume information defined in the CDS. This support will be enforced when SAF/RACF naming hiding is in use, but will be capable of being enabled at other times, as well. You will also be able to use it instead of using volume ownership for authorization.
- **DFSMSrmm Ignore Support Extended:** With this support, you will be able to choose the resource names

used to authorize requests for RMM to ignore volumes. By defining security profiles that over-ride the "default RMM ignore profiles", you will be able to base authorization on whether the volume is defined to RMM or not. RMM will compare the mounted volume with the same volume defined in the CDS using volser and the tape HDR1 label dsname. In addition, you will be able to decide whether RMM should use the mounted volume or the requested volume in the authorization check. (This support was provided in an earlier release via APAR OW53763.)

- **DFSMSrmm Tape Labeling:** EDGINERS will be enhanced to update the volume media type and recording format when you erase or relabel the volume. Support will be limited to tape drives that provide this information to the system on request. (This support was provided in an earlier release via APAR OW53989.)
- **DFSMSrmm Command Enhancements:** With these enhancements, you will be able to change and remove the SMS constructs assigned to tape data sets. (This support was provided in an earlier release via APAR OW54057.)

New DFSMS functions are planned to improve security as follows:

- **Authorized Access to Data Set Names:** With this function, when the SAF/RACF name hiding capability is active, you will be able to retrieve names of data sets only if you have read access to the data set.
- **DFSMSshm Command Authorization Control:** RACF Facility Class support will be supported for all storage administrator and end-user commands. This will provide security administrators with a finer granularity in controlling access to DFSMSshm commands.
- **Member-Level Security with z/OS UNIX Files:** With this function, the BPAM read-only support for z/OS UNIX files (described above) will be able to honor the security separately for each file.

e-business enabling

Multilevel Security: IBM plans to provide a Trusted Computing Base (MAC/DAC support using labelled resources) in z/OS (which is expected to include TCP/IP, Security Server, and UNIX System Services). This is collectively called "Multilevel Security" and is planned to be delivered with function staged in several releases.

A multilevel secure system has two primary goals: first, the controls are intended to prevent unauthorized individuals from accessing information at a higher classification than their authorization. Second, the controls are intended to prevent individuals from declassifying information.

In z/OS V1.5, Multilevel Security will extend the labelled security protection of z/OS to include TCP/IP and UNIX System Services, and provide enhancements to Security Server, JES2, SDSF, and others.

Multilevel Security function will allow customers more stringent access control to resources than is provided by user permissions. For example, a system administrator will be able to classify users and resources into compartments that are represented by security labels. This labelled security allows sharing of resources with mixed levels of security in a single image.

Customers will continue to find value in integrating critical internal information systems to suppliers, employees, and customers through the Internet. These customers will find

even partial implementation of Multilevel Security facilities on z/OS systems to be instrumental in protecting these systems and controlling their use.

Security for Your e-business Enterprise Identity Mapping (EIM): z/OS V1.5 delivers on IBM's commitment to provide self-managing solutions through the industry-leading implementation of EIM, an IBM Project eLiza initiative. Project eLiza is IBM's approach to creating a self-managing, autonomic computing environment. EIM will be designed to give you and your business partners a technology that maps a user identity on one system to the user's identity on another system. Applications that use EIM's C/C++ programming interface will be able to equate jsmith on iSeries to janesmith on zSeries. EIM will be an LDAP-based application that uses the LDAP database as a central repository of user mapping information. EIM is planned to lead to better tools for managing user IDs belonging to an individual within your enterprise, and simplify applications that run on multiple platforms because the application doesn't need to invent yet another way to identify a user and can exploit platform-specific authorization mechanisms. EIM is planned to be made available on all IBM @server platforms.

Statement of Direction

These statements represent current intentions of IBM. IBM development plans are subject to change or withdrawal without further notice.

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

IBM plans to take the following actions in the future.

- The next z/OS release, z/OS V1.5, is planned to be delivered in first quarter 2004. The next release after z/OS V1.5 is planned to be available in September 2004. Starting with the September 2004 release, it is IBM's intention to deliver z/OS releases on an annual basis.
- IBM plans to remove Object Access Method (OAM) support for FileNet 9246 optical libraries, 9247 optical drives, and 12-inch optical media in z/OS 1.5. If optical is a requirement, these filenet devices and media can be replaced with IBM 3995 optical devices and media. If optical is not required, the data can be transitioned to any z/OS-supported tape media or to DB2 tables on standard disk devices.
- IBM's strategy is to provide entitled service ordering and service delivery capabilities for the z/OS and OS/390 platform products electronically using the Internet. IBM intends to position ShopzSeries as the primary ordering and delivery method for software service on these platforms. The S/390® Service Update Facility (SUF) is being stabilized and additional requirements will be addressed via ShopzSeries. Existing worldwide fee services offerings that deliver z/OS and OS/390 software service will continue to provide delivery via physical and electronic media.
- IBM plans to deliver 64-bit virtual storage addressing for the DB2 for z/OS product in a future release. The future release of DB2 for z/OS, with 64-bit virtual address support, will be able to execute only on IBM zSeries 900 (z900) and IBM zSeries 800 (z800), or equivalent, running z/OS V1.3 or later, not z/OS V1.2, as previously stated in Software Announcement 201-248, dated September 11, 2001. DB2 V6

(5645-DB2) and V7 (95675-DB2) already support 64-bit real storage addressing for data space buffers.

z/OS V1.4 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), which is available by visiting:

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

Replacing Base Elements: You have the ability to replace a z/OS base function with a commercially available product that provides a similar function. Contact an IBM representative for qualification and pricing information. All z/OS integrated testing results and performance claims are voided with such replacement.

Export Considerations: The following z/OS functions have export considerations.

- **Base Elements**

- Communications Server — SNA/APPN® Services (includes VTAM®) (limited DES)
- Communications Server — TCP/IP Services (includes TCP/IP for MVS™) (Firewall CDMF DES 40 bit, SNMPv3 DES 56 bit, IP Sec DES 56 bit)
- Cryptographic Services — Open Cryptographic Services Facility (RC2/RC4/RC5 40-56 bit, DES 56 bit)
- Cryptographic Services — System SSL (RC2/RC4, DES through 56 bit)
- 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)
- Language Environment® (limited DES)

- **Optional Features**

- Communications Server Security Level 3 (TDES)
- IBM HTTP Server NA Secure (uses System SSL)
- Security Server Network Authentication Service Level 3 (TDES)
- Open Cryptographic Services Facility Security Level 3 (TDES, DES, RC2/RC4/RC5)
- Security Server — DCE Security Server at OSF DCE level 1.2.2 (limited DES)
- Security Server — Firewall Technologies (DES)
- Security Server — LDAP Server (uses System SSL, OCSF, and ICSF)
- Security Server — Network Authentication Service (DES)
- Security Server — PKI Services (uses RACF, OCSF and ICSF)
- Security Server — RACF (limited DES and CDM, RC2 40 bit)
- System SSL Security Level 3 (RC2/RC4, TDES, AES)

Enabling Optional Priced Features: z/OS optionally priced features use a z/OS product registration service, together with product policy statements, to determine whether 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 you subsequently enable any of the optional priced features, those features also become subject to the payment terms of your 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.

Service Policy

IBM plans to provide service support for each release of z/OS for three years following its general availability date. IBM, at its discretion, may choose to leave a release supported for more than three years.

At least 12 months' written notice prior to the withdrawal of service for a version or release will be given for z/OS.

Existing coexistence and migration rules continue to apply and should be taken into account in planning future migrations. Refer to **General Coexistence, Release Migrations, and Fallback** for additional information.

Effective immediately, z/OS no longer supports service for client operating systems whose service is withdrawn by the operating system manufacturer. As an example of the actual implementation of this policy, we will no longer support service for clients running Windows® 95.

Recommended Service Upgrade

IBM has redefined the Recommended Service Upgrade (RSU) for the z/OS platform based on additional Consolidated Service Testing (CST). Testing of service for the following subsystems and products is now being done in a customer-like sysplex environment, using industry-representative workloads:

- z/OS
- OS/390
- IMS
- DB2
- CICS
- MQSeries®

Service will be tested in this consolidated service test environment on a quarterly basis. The resulting RSU is the new recommended level of service. Additionally, testing will be done on HIPERs, PE fixes, and other fixes as warranted, on a monthly basis. These monthly RSUs are recommended as we have found a correlation between availability and maintenance currency. As always, customers should review HIPERs and PE fixes on a regular basis and install those that apply to their environment.

For more information about CST, and how to order and install the redefined recommended service, refer to:

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

Note: These service recommendations are based on IBM's test environment and workloads. Customer environments and workloads are likely to differ. Therefore, these service recommendations are provided without warranties of any kind. Customers must consider their environment, maintenance philosophy, and production needs in making the final decision as to what maintenance to apply.

Note: These statements represent IBM's current intentions. IBM development plans are subject to change or withdrawal without further notice.

Education Support

The following worldwide courses are available for classroom delivery:

- Introduction to z/OS and OS/390 Environment (ES05)
- Fundamental System Skills for z/OS and OS/390 (ES10)
- z/OS and OS/390 Facilities (ES15)
- z/Architecture for zSeries (OZ09)
- z/OS and OS/390 Operations (ES27)
- z/OS Update (OZ30)

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

Technical Information

Specified Operating Environment

Hardware Requirements

z/OS V1.4 runs on the following IBM servers:

- IBM @server zSeries z900 or a comparable server
- IBM @server zSeries z800 or a comparable server
- S/390 Parallel Enterprise Servers — G5 and G6 models or comparable servers

Note: Driver 26 (licensed internal code version 1.6.2) or later is required on a G5 or G6 server to support architectural enhancements required by z/OS.

- All models of the Multiprise® 3000 Enterprise Server or comparable servers

z/OS V1.5 is planned to run on the same IBM Servers as listed for z/OS V1.4.

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

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

General Coexistence, Release Migrations, and Fallback

z/OS continues to give you compatibility and flexibility as you migrate systems in a multisystem configuration by

allowing several releases of z/OS, OS/390, and z/OS.e to coexist. This includes non-Parallel Sysplex® and Parallel Sysplex multisystem configurations.

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

As previously described in Software Announcement 200-352, dated October 3, 2000, OS/390 V2.10, z/OS V1.1, z/OS V1.2, and z/OS V1.3 are coexistence-supported with z/OS V1.4. This takes into account the special combined treatment of OS/390 V2.10 and z/OS V1.1. In addition, z/OS.e V1.3 and z/OS.e V1.4 are also coexistence supported with z/OS V1.4.

IBM has converged on a consistent migration and coexistence policy. This consistent migration and coexistence policy is based on the current coexistence policy. Migration forward as well as backward should be made within the same releases supported by the coexistence policy. Four releases is the general migration and coexistence policy that should be assumed, except where special provisions have been provided.

This consistent coexistence, migration, and fallback policy applies to release migrations for:

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

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

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

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

For migrations inside the IBM migration and coexistence policy, IBM Global Services (IGS) has fee-based offerings that provide a PTF on demand service for toleration and coexistence maintenance based upon your system modification program/extended (SMP/E) Consolidated Software Inventory (CSI). With these offerings, you specify the release of z/OS, z/OS.e, or OS/390, the subsystems (DB2, CICS, IMS, NCP), or the hardware (for example, 2064) to which you are migrating, and all configured toleration/coexistence maintenance for your current system (as specified by your CSI) will be delivered to you as a customized package in electronic or physical format.

This is provided through the S/390 SoftwareXcel offering, via the Service Request and Delivery (SRD) function.

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

JES Coexistence, Release Migrations and Fallback: It is recommended you migrate to the JES2 or JES3 that comes comprehensively tested with z/OS 1.4 at the same

time you migrate to the rest of z/OS 1.4, or as soon as possible thereafter. In this way, you benefit directly from the new function provided by the most current JES and enable other elements and features to benefit from this level.

Because such a migration is not always practical, certain prior JES levels are supported. The JES levels supported by a given z/OS release (that is, the allowable JES-BCP combinations) are the same as the JES levels that may coexist in the same multi-access spool (MAS) or multisystem complex with the JES delivered in that z/OS release. That is, the JES levels that may run on the latest z/OS release (when run on either a single system or on individual systems participating in a multisystem configuration) are the four most recent JES levels.

For additional information on JES coexistence and release migration information, including the allowable JES-BCP combinations and the JES coexistence levels that are supported, refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504). at:

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

Installation and Customization Enhancements

For z/OS V1.4, ServerPac now supports the ability to selectively install either JES2 or JES3. This eliminates subsequent tasks to merge zones or to delete the unused JES. ServerPac also provides support to enable z/OS Managed System Infrastructure for Operations (msys for Operations), which provides automation and ease-of-use functions for both z/OS system and sysplex resources. For z/OS V1.4, ServerPac also addressed multiple customer and user group requirements.

For more information about enhancements to ServerPac, refer to "E-Care" in the **Description** section of this announcement.

The level V1.1 customized Offering Driver (5665-343) no longer supports single-density DASD. This reduces the number of tapes that you need to handle. Now, the minimum level of DASD devices supported are 3380-2 and 3390-2.

The media on which the Driver can be ordered are the following:

- 3590
- 3480 for 3390 double-density DASD
- 3590, 3480, and 4mm for 3380 double-density DASD or higher

z/OS V1.4 customization has also been made easier with enhancements to both z/OS Managed System Infrastructure for Setup (msys for Setup) and the z/OS wizards.

msys for Setup has been enhanced to provide additional element plug-ins, support for multiple user logon, improved user interface, and Japanese NLS support.

Availability of the z/OS Intelligent Resource Director (IRD) Planning wizard is planned for 2002. The IBM @server Security Planner wizard is currently available.

For more information about enhancements to msys and the z/OS wizards, refer to the section, **Ease-of-Use through IBM Project eLiza Technologies**

Performance Considerations: Additional information on z/OS V1.4 performance will be available at general

availability. You should consult your IBM representative at or after general availability.

User Group Requirements: z/OS V1.4 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

Direct Customer Support: Direct customer support is provided by IBM Operational Support Services — Support Line. This fee service can enhance your productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services — Support Line 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 800-IBM-4YOU (426-4968).

Packaging: When you order z/OS, IBM recommends that you also order all the unpriced optional (**export controlled**) features that you may need in the future. That is because these features may not still be orderable later when you decide you need them. For example, to obtain encryption support (security) for IBM HTTP Server for z/OS, you **must** specify the security feature **IBM HTTP Server North America Secure**.

For specific details on feature numbers, refer to the **Ordering Information** section.

System Integrity

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

Security, Auditability, and Control

Data security and auditability in the z/OS environment are enhanced by the functions available in the optional Security Server for z/OS feature. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Ordering Information

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

Key Dates

- **August 13, 2002:** z/OS V1.4 CFSW configurator support for stand-alone path (5694-A01) and price proposal support.

- **September 3, 2002:** Recommended date for submitting z/OS V1.3 orders for ServerPac, SystemPac®, CBPDO. This date will allow for adequate order processing time.
- **September 12, 2002:** Last date for ordering z/OS V1.3 ServerPac, SystemPac, CBPDO.
- **September 13, 2002:** First date for ordering z/OS V1.4 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 z/OS Customized Offerings (ServerPac, SystemPac, and CBPDO).
- **September 27, 2002:** z/OS V1.4 planned general availability.
- **December 17, 2002:** Last date for ordering OS/390 V2.10 (5647-A01).
- **December 17, 2002:** Last date for Web download of the OS/390 V2.8, V2.9, and V2.10, and z/OS V1.1 support for Unicode.
- **March 31, 2003:** Last date for Web download of the OS/390 V2.8/9 SecureWay® Security Server Network Authentication and Privacy Service.

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

For additional information, refer to *z/OS and z/OS.e Planning for Installation* (GA22-7504), Chapter 5 “Ensuring coexistence and fallback” at:

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

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

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

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

The stand-alone product IBM Debug Tool for z/OS and OS/390 V1.3 (5698-198), or later, is functionally richer than the debug tool function in the z/OS C/C++ with Debug Tool feature. You can take advantage of the many new functions in the stand-alone product by dynamically disabling the z/OS C/C++ with Debug Tool feature, dynamically enabling the z/OS C/C++ without Debug Tool feature, and installing the stand-alone product. Order the latest level of the above product to obtain latest function.

Order z/OS through the Internet

ShopzSeries (formerly SHOPS390) 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. and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or

Business Partner) to handle your order via the traditional IBM ordering process.

For more details and availability, visit the ShopzSeries Web site at:

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

Current licensees of z/OS V1

z/OS V1 customers can migrate to z/OS V1.4 by ordering the release through the Customized Offerings (ServerPac, SystemPac, CBPDO) as done in the past. z/OS V1.4 will not be offering the following optional feature, as this function is now included in the z/OS V1.4 base.

- Communications Server Network Print Facility

For more details, refer to the **New Licensees** section under **Ordering Information**.

New Licensees

New Licensees of z/OS V1.4: The z/OS product ships its executable code via Customized Offerings (CBPDO, ServerPac, SystemPac). Noncustomized items (for example, CD-ROMs, Memos, 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 or 5647-A01) must be retained to determine the z/OS version and release level most recently ordered.

Production of z/OS V1.4 orders will begin on the planned general availability date, **September 27, 2002**. 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/AAS.

Basic License

To order a basic license, specify the z/OS V1.4 program number 5694-A01 and feature number 9001 for asset registration. Proceed to select the feature numbers listed, which are required, and then select any optional feature numbers.

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

Basic Machine-Readable Material

The following no-charge features are added to z/OS V1.4 and can be ordered effective **August 13, 2002**. These features have pricing/billing features associated with them. Refer to notes below for details on past announcements for this information.

**z/OS V1.4
Feature Description**

**z/OS V1.4
Feature Number**

Base 6260

Notes:

- 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
- This product ships its executable code via Customized Offerings (CBPDO, ServerPac, SystemPac). Noncustomized items (for example, CD-ROMs, Memos, 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

A memo, program directory, and one copy of the following publications are supplied automatically with the basic machine-readable material:

Basic/Unlicensed Hardcopy Publications

Title	Order Number
z/OS V1.4 Hot Topics Newsletter	GA22-7501
z/OS and z/OS.e V1.4 Planning for Installation	GA22-7504
z/OS Planning for Workload License Charges	SA22-7506

Basic/Unlicensed Softcopy Publications

Title	Order Number
z/OS V1.4 Collection	SK3T-4269

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

For a fee, you can order additional copies of these documents or any other z/OS V1.4 hardcopy document or softcopy collection using the IBM Publications Center on the Web at:

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

For customers in 23 countries the IBM Publications Center now offers the option to order hardcopy publications or softcopy collections by customer number. Check to see if this option is available in your country.

For other publications ordering options, visit:

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

z/OS V1.4 Collection (BookManager® and PDF): The z/OS V1.4 Collection contains the z/OS V1.4 product books in both BookManager and PDF softcopy formats on CD-ROM. If this collection is refreshed three months after

general availability, an updated collection will be automatically sent to z/OS V1.4 licensees.

By general availability, all of the z/OS V1.4 unlicensed books will be available at:

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

If you want to upload BookManager softcopy and create softcopy repositories, the SoftCopy Librarian is our strategic tool for uploading and managing BookManager files on a z/OS or OS/390 host or server, and on LANs and workstations. SoftCopy Librarian, a free program that is provided on the softcopy tools disc of the CD-ROM collections, outperforms the previous Softcopy Receiver Tool for uploading books and also provides you with management functions for your bookshelves and document files. Since the Softcopy Receiver Tool is no longer supported, you should migrate to the SoftCopy Librarian now.

SoftCopy Librarian runs on Windows workstations. The latest versions of the SoftCopy Librarian can be downloaded from the following site:

<ftp://ftp.software.ibm.com/ps/products/ibmreader/tools/>

Optional Machine-Readable Material

Optional Unpriced Features: The following optional features, offered at no additional charge, are added to z/OS V1.4 and can be ordered effective **August 13, 2002**.

z/OS V1.4 Feature Description	z/OS V1.4 Feature Number
Communications Server Security Level 3	6311
IBM HTTP Server NA Secure	6310
OCSF Security Level 3	6284
System SSL Security Level 3	6301
Security Server Network Authentication Service Level 3	6258

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.
4. If ordering IBM HTTP Server NA Secure, System SSL Security Level 3 should also be ordered to obtain additional security function over what is provided in the Base.
5. The Kerberos function is obtainable by ordering Security Server Network Authentication Service Level 3.
6. The above feature descriptions are offered at no additional charge.
7. The feature descriptions listed above are the same as those offered in z/OS V1.3, except that Communications Server Network Print Facility is no longer offered as a separate unpriced feature. This function is now included in the Communications Server base element.

Optional Priced Features: The following optional no-charge features are added to z/OS V1.4 and can be ordered effective **August 13, 2002**. These features have pricing/billing features associated with them. Refer to notes below for details on past announcements for this information.

z/OS V1.4 Feature Description	z/OS V1.4 Feature Number
BDT FTF	6314
BDT SNA NJE	6283
BookManager Build	6244
C/C++ with Debug	6263
C/C++ without Debug	6315
DFSMS dss,hsm	6270
DFSMS rmm	6286
DFSMS dss	6267
DFSORT™	6276
GDDM® -PGF	6243
GDDM-REXX	6295
HCM	6325
HLASM Toolkit	6275
Infoprint® Server	6278
JES3	6324
RMF™	6305
SDSF	6304
Security Server	6281

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.
- This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO). The media type is chosen during the customized offering ordering procedure.
- If you subsequently enable any of the optional priced features, those features also become subject to the payment terms of your existing z/OS license as described in *z/OS Licensed Program Specifications (GA22-7503)*. You must notify IBM when you enable an optional feature 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.
- The following components of priced optional features are now licensed as part of the z/OS base and can be used without enabling the optional feature.
 - C/C++ IBM Open Class™ Library
 - LDAP Server component of Security Server
 - Network Authentication Service component of Security Server
 - Firewall Technologies (IKE and GUI only) component of Security Server
 - PKI Services component of the Security Server
 - Open Cryptographic Enhanced Plug-ins (OCEP) component of the Security Server

- DFSMSdss™ cannot be ordered with DFSMSdsshsm and vice versa.
- C/C++ optional features are mutually exclusive; only one can be ordered.
- The feature descriptions listed above are the same as those offered in z/OS V1.3.

**Optional Unpriced National Language
Version (NLV) Features**

The z/OS V1.4 NLV support features will become generally available on the same date the release code becomes available.

z/OS V1.4 provides support in the languages listed below. However, not all elements within z/OS V1.4 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 V1.4 and can be ordered effective **August 13, 2002**.

The NLV features for z/OS V1.4 are:

NLV Features

z/OS V1.4 NLV Feature Description	z/OS V1.4 Feature Number
Brazilian Portuguese Base (PTB)	6255
Brazilian Portuguese BookMgr Build	6312
Canadian French Base (FRC)	6302
Canadian French BookMgr Build	6287
Danish Base (DAN)	6250
Dutch Base (NLD)	6292
French Base (FRA)	6316
French BookMgr Build	6264
German Base (DEU)	6266
German BookMgr Build	6323
Italian Base (ITA)	6300
JPN Base	6279
JPN C++ With Debug	6272
JPN C++ Without Debug	6268
JPN DFSORT	6271
JPN Infoprint Server	6261
JPN RMF	6318
JPN SDSF	6288
JPN Security Server	6269
Upper Case English Base (ENP)	6299
Korean Base (KOR)	6259
Norwegian Base (NOR)	6296
Spanish Base (ESP)	6246
Spanish BookMgr Build	6294
Swedish Base (SVE)	6297
Swiss German Base (DES)	6252
Simplified Chinese Base (CHS)	6289
Traditional Chinese Base (CHT)	6322

Notes:

- The above feature descriptions are offered at no additional charge.
- This product ships its executable code via Customized Offerings (ServerPac, SystemPac, CBPDO).
- The media type is chosen during the customized offering ordering procedure.

- The feature descriptions listed above are the same offered in z/OS V1.3.

Optional Unpriced Source Media

The following optional features, offered at no additional charge, are added to z/OS V1.4 and can be ordered effective **August 13, 2002**.

Optional Source Feature Description	z/OS V1.4	
	Feature Number 3480	4mm Cartridge DAT
Source Base (1)	6242	6291
Source Base JPN (2)	6321	6307
Source Security Server —RACF (3)	6308	6251

Notes:

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

Optional Unlicensed Publications

Optional Unlicensed Softcopy Publications: The following optional one-time charge features are added to z/OS V1.4 and can be ordered effective **August 13, 2002**.

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

Title	Order Number	Feature Number	Price
z/OS Software Products Collection	SK3T-4270	8011	\$275
IBM eServer zSeries Redbooks™ Collection	SK3T-7876	8012	150
z/OS Security Server RACF Collection	SK3T-4272	8013	150
z/OS Version 1 Release 4 and Software Products DVD Collection	SK3T-4271	8014	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 two weeks after the release general availability to licensees of the z/OS Security Server optional feature.

The update for z/OS V1.4 is planned to be available October 11, 2002.

- The feature descriptions listed above are the same offered in z/OS V1.3.
- When the above softcopy collections are ordered as features of z/OS V1.4, the special subscription price includes automatic shipment of all updates made while the product version can be ordered.

The *z/OS Software Products Collection* includes over 1,485 unlicensed online documents for more than 285 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 @server 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, as well as softcopy tools. Using this collection, you have 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 4 and Software Products DVD Collection* includes softcopy tools, libraries for z/OS Version 1 Release 4 (the element and feature libraries), the libraries for multiple releases of z/OS software products, and selected IBM @server 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 V1.4 Collection* (SK3T-4269) and the *z/OS Software Products Collection* (SK3T-4270) combined with selected IBM Redbooks from the *IBM @server zSeries Redbooks Collection* (SK3T-7876) and delivered on the higher-density DVD technology. The contents of the popular zFavorites for zSeries mini-CD is also included on the DVD collection.

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

Licensed users can obtain the licensed documents for z/OS by purchasing the z/OS Licensed Product Library collection (LK3T-4307) using the normal IBM publications ordering methods. Users can also access the licensed documents free of charge on the Internet using the IBM Resource Link™ Web site. Access to these documents on IBM Resource Link requires a key code and an IBM

Resource Link Web user ID and password. Your z/OS order includes a memo that contains the keycode. Information about ordering the licensed softcopy collection and accessing IBM Resource Link is provided on the following Web site:

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

z/OS V1.3 Features Withdrawn

The following z/OS V1.3 features are withdrawn from marketing, effective September 12, 2002.

Feature Number	Feature Description
6189	z/OS V1.3 Base
6218	z/OS V1.3 BDT FTF
6167	z/OS V1.3 BDT SNA NJE
6206	z/OS V1.3 BookManager Build
6215	z/OS V1.3 C/C++ with Debug
6181	z/OS V1.3 C/C++ without Debug
6217	z/OS V1.3 DFSMS dss,hsm
6212	z/OS V1.3 DFSMS rmm
6214	z/OS V1.3 DFSMS dss
6179	z/OS V1.3 DFSORT
6171	z/OS V1.3 GDDM-PGF
6186	z/OS V1.3 GDDM-REXX
6188	z/OS V1.3 HCM
6213	z/OS V1.3 HLASM Toolkit
6159	z/OS V1.3 Infoprint Server
6162	z/OS V1.3 JES3
6176	z/OS V1.3 RMF
6169	z/OS V1.3 SDSF
6219	z/OS V1.3 Security Server
6221	z/OS V1.3 Communications Server Security Level 3
6222	z/OS V1.3 Communications Server Network Print Facility
6158	z/OS V1.3 IBM HTTP Server NA Secure
6168	z/OS V1.3 OCSF Security Level 3
6187	z/OS V1.3 System SSL Security Level 3
6223	z/OS V1.3 Security Server Network Authentication Service Level 3
6163	z/OS V1.3 Base Source Code — 3480
6164	z/OS V1.3 Base Source Code — 4MM
6165	z/OS V1.3 Base Source Code — JPN — 3480
6166	z/OS V1.3 Base Source Code — JPN — 4MM
6184	z/OS V1.3 Security Server Source Code — 3480
6185	z/OS V1.3 Security Server Source Code — 4MM
8008	z/OS V1.3 SK3T-4272 z/OS Security Server RACF Collection
8007	z/OS V1.3 SK3T-4270 z/OS Software Products Collection
8009	z/OS V1.3 SK3T-7876 IBM eServer zSeries Redbooks Collection
8010	z/OS V1.3 SK3T-4271 z/OS V1.3 and Software Products DVD Collection
6190	z/OS V1.3 Braz Port Base (PTB)
6211	z/OS V1.3 Braz Port BookMgr Build
6191	z/OS V1.3 Can Fren Base (FRC)
6207	z/OS V1.3 Can Fren BookMgr Build
6202	z/OS V1.3 Danish Base (DAN)
6200	z/OS V1.3 Dutch Base (NLD)
6199	z/OS V1.3 French Base (FRA)
6208	z/OS V1.3 French BookMgr Build
6195	z/OS V1.3 Germ Base (DEU)
6209	z/OS V1.3 Germ BookMgr Build

Feature Number	Feature Description
6197	z/OS V1.3 Ital Base (ITA)
6203	z/OS V1.3 JPN Base
6216	z/OS V1.3 JPN C++ With Debug
6182	z/OS V1.3 JPN C++ Without Debug
6180	z/OS V1.3 JPN DFSORT
6161	z/OS V1.3 JPN Infoprint Server
6177	z/OS V1.3 JPN RMF
6170	z/OS V1.3 JPN SDSF
6220	z/OS V1.3 JPN Security Server
6193	z/OS V1.3 Upper Case English Base (ENP)
6192	z/OS V1.3 Kor Base (KOR)
6194	z/OS V1.3 Norw Base (NOR)
6201	z/OS V1.3 Span Base (ESP)
6210	z/OS V1.3 Span BookMgr Build
6204	z/OS V1.3 Swed Base (SVE)
6205	z/OS V1.3 Swiss Germ Base(DES)
6196	z/OS V1.3 Simp Chin Base (CHS)
6198	z/OS V1.3 Trad Chin Base (CHT)

Customized Offerings

Most product media is shipped only via Customized Offerings (that is, CBPDO, ServerPac, SystemPac). Non-customized items (CDs, diskettes, source media, media kits) will continue to be shipped via the stand-alone product.

Terms and Conditions

The terms and conditions of z/OS V1.4 (5694-A01) are unaffected by this announcement. For more information, 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

Terms and Conditions: z/OS V1R2/3/4 Bimodal Migration Accommodation

The z/OS Bimodal Migration Accommodation software ("Accommodation") is intended to provide fallback support to 31-bit mode in the event that it is required during migration to z/OS in z/Architecture mode (64-bit).

Program-Unique Terms: The following additional terms supplement and amend the IBM International License Agreement for Non-Warranted Programs ("ILA") and your downloading, installation or any other use of the Accommodation indicates your acceptance of these additional terms:

The Accommodation is available for each z/OS license for six months only ("Accommodation Period"). The Accommodation Period begins when z/OS (5694-A01) is licensed to a zSeries server (z800 or z900) or equivalent ("Server"). The Accommodation may only be used for a single six month period on each Server where the Accommodation is licensed. At the end of the Accommodation Period, z/OS will be supported in 64-bit mode only, and your authorization to use the Accommodation on that Server will no longer be valid and may not be renewed. Workload License Charges (WLC) are not a supported option for pricing and licensing of IBM software on the Server on which the Accommodation is

installed. If you have signed the Attachment for zSeries Workload License Charges — Pre-ILM (z125-6516), the terms of such attachment are suspended for the Server on which the Accommodation is installed during the term of such license. If you elect WLC pricing for software on a Server on which the Accommodation is installed, your license to use the Accommodation on that Server shall automatically terminate and may not be renewed. The Accommodation may not be used in conjunction with z/OS.e (5655-G52).

IBM reserves the right to withdraw the Accommodation at any time.

There is no change to service support whether the Server is in 31-bit or 64-bit mode during the Accommodation Period.

z/OS remains under the terms of the IBM Customer Agreement ("ICA").

U.S. Government Users Restricted Rights — Use, duplication or disclosure restricted by the GSA ADP Schedule Contract with the IBM Corporation.

Prices

The charges for z/OS V1.4 (5694-A01) are unaffected by this announcement. For more information, 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

IBM Operational Support Services — Support Line: Yes. Current charges are unaffected by this announcement.

Order Now

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You can also contact your local IBM Business Partner or IBM representative. To identify them, call 800-IBM-4YOU.

Note: Shipments will begin after the planned availability date.

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