Preview: z/OS V1.8 and z/OS.e V1.8 extend system limits and continue to support application workload growth

Overview

With z/OS® and z/OS.e V1.8, IBM plans to extend the value of the flagship mainframe operating system with improvements in core z/OS competencies, including scale, availability, and resource optimization. Increased focus on simplifying z/OS for the new generation of IT professionals has resulted in many advances in ease of use.

Availability enhancements are planned to include more-granular options for fast replication of data and improved recoverability options in a sysplex. Resource optimization advances will include improved I/O priority options for tape devices and additional Workload Manager (WLM) processing options for zAAP workloads. In z/OS V1.8, several important functions intended to deliver further application integration support and support for industry and de facto standards are also planned.

By extending the value of z/OS to the enterprise, this new release is planned to provide an optimized z/OS LDAP directory server designed to allow greater consolidation of LDAP directories on z/OS. This can enable you to collapse user registries typically used by distributed applications on z/OS, which can help simplify enterprise management and disaster recovery.

Enterprise-wide resource management will be improved with plans for more integration and cooperation between z/OS WLM and Enterprise Workload Manager (EWLM).

Key prerequisites

z/OS V1.8 is planned to run on the following IBM System z™ servers:
- z9-109
- z900
- z990
- z800
- z890

z/OS.e V1.8 is planned to run on the following IBM zSeries® servers:
- z800
- z890

For a complete description of z/OS and z/OS.e V1.8 software prerequisites, refer to z/OS and z/OS.e Planning for Installation (GA22-7504), when available.

Planned availability

September 2006

At a glance

z/OS and z/OS.e are planned to offer:
- Availability enhancements including more options for fast data replication and improved recoverability in a sysplex
- Increased focus on simplifying z/OS for the new generation of IT professionals with many advances in ease of use
- Further application integration support and support for industry and de facto standards
- Simplified enterprise-wide management with improved resource management and advances to allow greater consolidation of distributed LDAP directories on z/OS
Description

Scalability

z/OS V1.8 is planned to extend system limits and continue to support application workload growth. Support is planned for up to 4 TB of real memory on a single z/OS image. This is expected to allow the use of up to 512 GB of real memory on a single z/OS image on IBM System z9™ servers and up to 256 GB on z990 servers. Also planned are improved support for large-format sequential data sets, increased system-wide and intra-address space limits for Global Resource Serialization (GRS), and improved high-level language support for VSAM data sets with extended addressability.

Specifically, z/OS V1.8 is planned to include:

- Support for up to 4 TB (4,398,046,511,104 bytes) of real memory on a single z/OS image, an increase from the prior maximum of 128 GB. This is planned to support up to 512 GB on IBM System z9 servers and up to 256 GB on IBM zSeries z990 servers, an increase from the prior maximum of 128 GB.
- Language Environment® enhancements that provide full z/OS XL C/C++ run-time library support for large-format sequential data sets opened using QSAM (noseek in C/F++) support for 65535 tracks per volume for sequential data sets.
- A new programming interface for GRS that is designed to allow authorized programs to set their own concurrent enqueue (ENQ) limits within their address spaces.
- Movement of selected GRS control blocks above the 2-GB bar.
- Support for VSAM data sets with extended addressability in the Language Environment run-time library support for z/OS XL C/C++.
- Extended DFSMSrmm™ support for managing removable media across the enterprise. In addition, DFSMSrmm support is planned to use common time and provide support for displaying and setting dates and times in any chosen time zone.
- Support for DASDMS/CVAF Rapid Index Rebuild.

For more information about z/OS V1.8 scalability improvements, refer to the Scalability topic in the Additional information section.

Application integration

In z/OS V1.8, several important functions intended to deliver further application integration support and support for industry and de facto standards are planned:

- A new system component of z/OS, z/OS XML System Services (z/OS XML), which will be designed to deliver an optimized set of services for parsing XML documents.
- IBM intends to deliver a new LDAP for z/OS designed to improve performance, scalability, auditability, availability, and ease of use; and to provide stronger affinity to z/OS platform features like Parallel Sysplex®.
- Unicode support for new collation tables needed by middleware applications, with names based on the Unicode Collation Algorithm (UCA), which conforms to the Unicode 4.0 standard.
- BPXBATCH program enhancements allowing STDOUT and STDERR DD statements to specify SYSOUT, partitioned, partitioned data set extended (PDSE), and sequential data sets. This function is also available for z/OS V1.5 and higher with APAR OA11699.
- A new version of the CIM. This includes the upgrade of the CIM Server Runtime Environment to version 2.5.1 of OpenPegasus from the Open Group, the upgrade of the CIM Schema to 2.9, and additional resource instrumentation.
- RMF™ eServer® OS Monitoring Stage 2 for z/OS, including a WBEM profile based on the IETF SLP protocol, supporting CIM indications designed to enable exploiters using standard CIM client applications to subscribe to asynchronous events, and exposing some additional existing RMF metrics to CIM.
- A new capability to allow you to trace XPLINK/non-XPLINK transitions.
- Support for a /etc/inittab file, used to start and restart daemons.
- dbx debugger support for the complex and packed decimal data types used by applications that demand a higher degree of mathematical precision.
- Additional locale support for the Euro currency symbol for countries that have recently joined the European Union. This function is also available with APAR PQ99282 for z/OS V1.4 and higher.
- Enhancements to the Software Configuration and Library Manager (SCLM) component of ISPF.

For more information about the application integration extensions and improvements in z/OS V1.8, refer to the Application integration topic in the Additional information section.

Security

In z/OS V1.8, z/OS continues to deliver industry leadership for security. Improvements that are all intended to help deliver the kind of security-rich environment that has made z/OS an industry leader include:

- Support for RACF® pass phrases from 14 to 100 characters in length
- Significant improvements to Identrus-certified support for digital certificates, including SCEP and multiple certificate authority (multiple-CA) support
- Improvements for tape data set protection using RACF or another external security manager
• Support for the Advanced Encryption Standard (AES) for IPSec

z/OS V1.8 is planned to include:
• Support for defining Intrusion Detection Services (IDS) policies in a policy agent configuration file as well as an LDAP server. This solution provides an IDS policy solution that is consistent with other policy types for those installations that do not have an LDAP infrastructure in place or that prefer using configuration files instead of LDAP.
• RACF support for pass phrases from 14 to 100 characters in length, in addition to the current support for passwords. Pass phrases allow for an exponentially greater number of possible combinations of characters and numbers than do passwords.
• Public Key Infrastructure (PKI) Services support for multiple certificate authorities (CA), including the ability to establish multiple certificate authorities on a single image; and Simple Certificate Enrollment Protocol (SCEP) support.
• New options for securing tape data sets using the System Authorization Facility (SAF), to allow you to define profiles to protect data sets on tape using the DATASET class without the need to activate the TAPEDSN option or the TAPEVOL class, to allow you to specify that all data sets on a tape volume should have common authorization, and to allow you to specify whether users are authorized to overwrite existing files on a tape volume.
• Support for the AES algorithm for IP Security with a 128-bit key length.
• Support for SAF Identity Tokens.
• RACF support for virtual key rings.

For more information about z/OS V1.8 security improvements, refer to the Security topic in the Additional information section.

Availability

z/OS, in conjunction with IBM System z servers, continues to address requirements for high availability. z/OS V1.8 is planned to extend DFSMS fast replication to the data set level on 2105 (Enterprise Storage Server℠) and later storage controllers; offer improved recoverability for the z/OS UNIX System Services (z/OS UNIX) byte range lock manager (BRLM) when a system failure occurs in a sysplex; improve the Coupling Facility Resource Manager (CFRM); provide further improvements to Consoles processing and System Logger; and make significant improvements in GDPS™ HyperSwap™ and CF duplexing recovery. In z/OS V1.8, enhancements are planned to include:
• Extended DFSMSHsm™ fast replication support to allow for dumping fast replication backup copies to tape and for recovering fast replication backup versions from dump tapes, in addition to the current support for recovering backup versions from DASD target volumes.
• Enhancements to DFSMS fast replication to support data set recovery on 2105 (Enterprise Storage Server) and later disk storage devices.
• New function for the z/OS UNIX BRLM, which will be designed to allow applications that use byte-range locking to stay active when a system within the sysplex fails.
• CFRM performance enhancements intended to significantly reduce I/O contention for CFRM couple data sets (CDS) when rebuilding Coupling Facility structures, during Coupling Facility Duplexing establishment and failover, and during connect/disconnect processing.
• System Logger support for renaming existing log streams, and additional support designed to allow you to separate logger activity for test and production log streams.
• GDPS and Peer-to-Peer Remote Copy (PPRC) enhancements designed to help reduce the length and variability of failover recovery times by improving the consistency between secondary copies of data at the recovery site and duplexed structures in the Coupling Facility.
• A new HyperSwap trigger source type, I/O Timeout, designed to act on I/O timeouts detected by the Missing Interrupt Handler (MIH).
• Improved z/OS UNIX System Services latch contention detection.
• Consoles enhancements intended to deliver additional improvements in message processing and thus help improve Parallel Sysplex availability. These enhancements will be designed to focus on improving availability for sysplex configurations by reducing the amount of console configuration data that is passed around the sysplex under serialization and increasing the maximum number of multiple console support (MCS) and SNA multiple console support (SMCS) consoles that can be defined. These console enhancements are planned to be available for Early Support Programs (ESP) in the second quarter 2007, and to be generally available in the third quarter 2007.

For more information about z/OS V1.8 availability improvements, refer to the Availability topic in the Additional information section.

Self-optimization capabilities

In z/OS V1.8, Communications Server is planned to offer additional network and workload balancing improvements by favoring local servers, when possible, to reduce inter-CEO network traffic. Also planned are enhanced Workload Manager (WLM) processing for zAAP workloads, improved I/O priority for tape devices, and more integration between WLM and Enterprise Workload Manager (EWLM). These functions are intended to help optimize workloads within an image and across a sysplex:
• A new option will be designed to allow the z/OS Systplex Distributor to favor local system target servers where possible, while avoiding servers that are no longer active or are overloaded.
• WLM improvements for zAAPs will be designed to manage workloads based on zAAP delay in addition to CP delay and improve IFAHONORPRIORITY processing.
• System Resource Manager (SRM) will be designed to calculate a new static I/O priority for all address spaces and enclaves for tape devices, to be used when no dynamic I/O priority has been assigned.
• Global Resource Serialization (GRS) will be enhanced to enable you to specify the contention notifying system (CNS) for GRS Star. This new function is planned to be made available also on z/OS V1.7 with APAR OA11382.
• EWLM support is planned to be added to z/OS WLM, to accept the classification of work from EWLM, introduce a high-performance EWLM instrumentation option via WLM Enclave Services, map WLM execution delay monitoring services to appropriate Application Response Measurement (ARM) services, and provide a consistent management of process entitlements on both the z/OS-centric world and the heterogeneous world controlled by EWLM by introducing new WLM system service classes.

• WLM will be designed to include zAAP data in the CPU using and delay samples as well as in the CPU service times reported to EWLM for processes using zAAPs.

• Support for the Object Access Method (OAM) DB2® Binary Large Object Support is planned to enable objects larger than 32 KB to be stored using DB2's large object (LOB) support and the binary large object (BLOB) data type. Coexistence support is planned for earlier release levels to coexist in an OAMplex with z/OS V1.8.

• OAM Object Tape Enhancements will add automatic selection of RECYCLE-eligible tape volumes to the existing MOVEVOL with RECYCLE function, and provide support for an immediate backup copy to be created for an object at the time the object is originally stored.

• The z/OS UNIX System Services asynchronous socket read and write operations (the aio_read() and aio_write() callable services) will be designed to use fast-path processing, and performance will be improved for Service Request Block (SRB)-mode, fast path syscalls.

• SCLM design changes will be made to improve the performance of the SCLM Library utility (option 3.1).

• VARY processing will be redesigned to bring multiple devices online in parallel, in addition to the parallel vary offline processing introduced in z/OS V1.7.

• JES2 will be designed to help balance workload in a multi-access spool configuration within a sysplex by controlling the number of WLM-managed initiators in use on each system.

For more information about z/OS V1.8 self-optimization improvements, refer to the Self-optimization capabilities topic in the Additional information section.

Networking

In z/OS V1.8, significant improvements are planned for networking and communications, including the ability to specify subplexes for TCP/IP communications and improved sysplex autonomic functions, improvements in networking security, and support for Windows™ Terminal Server (WTS). These functions are planned to include:

• The ability to specify a subdivision of a sysplex into multiple “subplex” scopes from a sysplex networking function perspective. For example, some VTAM® and TCP/IP instances in a sysplex might belong to one subplex, while other VTAM or TCP/IP instances in the same sysplex might belong to other subplexes.

• A sysplex autonomics function designed to provide monitoring of critical network interfaces so that sysplex autonemics recovery can be triggered when failures occur at an interface.

• A new application that allows for dynamic registration and deregistration of Domain Name Server (DNS) records for z/OS hosts, host groups, servers, and server groups and their associated zones based on their current availability.

• New facilities and configuration options to support IP filtering, IPSec, and Internet Key Exchange (IKE) for IPv6.

• New and extended z/OS Communications Server callable APIs to enable TCP connections or UDP endpoints to be dropped, allow wildcards to be specified on HPR connection requests, provide better management of TN3270 connections, and improve SMF accounting for TN3270.

• z/OS SMB server support for WTS clients.

• z/OS SMB server support for Linux™ Samba clients.

• A new REXX interface designed to be used to invoke the FTP client programmatically, and a sample REXX program.

• Telnet enhancements designed to allow you to specify that a TN3270 server should automatically clean up hung SNA Telnet sessions when a new TN3270 connection is initiated, system symbol support within Telnet unformatted system services messages (USMSG) processing, and USS table assignment from the LU exit.

• Support for JES3 NJE communications using TCP/IP, planned to be available on z/OS V1.8 in the first half 2007.

• A new TCP/IP configuration parameter that allows users to designate the source IP address to be used for outbound TCP connections based on the destination IP addresses or networks.

• In z/OS V1.8, the Firewall Technologies component of the Integrated Security Services element is planned to be removed. Many Firewall Technologies functions have been stabilized for some time and can be replaced using comparable or better functions provided by Communications Server, notably, IPSecurity. In addition, a functionally rich downloadable tool replaces the IPSecurity and IP Filtering configuration GUI support.

For more information, refer to the publication z/OS V1R7.0 Migration.

For more information about z/OS V1.8 networking improvements, refer to the Networking topic in the Additional information section.

Ease of use

Ease of use is a continued focus area in z/OS V1.8. Significant improvements are planned to be delivered in the Health Checker Framework and also additional checks, a number of Hardware Configuration Manager (HCM) and ISPF enhancements, and usability extensions to InfoPrint® Server’s Web-based print management interface. These and other usability improvements are planned:

• The enhanced Health Checker Framework, intended to make it easier to write checks, and to provide improved parmlib, parsing, and display support for checks. In addition, a number of new checks are planned for Communications Server, GRS, storage management (ASM and VSM), DFSMS, and Resource Recovery Services (RRS).

• A significant number of Hardware Configuration Manager (HCM) enhancements.
• ISPF improvements intended to support SuperC Compare and Search-For functions on the Data Set List Actions panel, help make it easier to search for members, auto-discover the workstation IP address when establishing a Workstation Agent session, improve the way aliases are processed, and provide tape data set support.
• Enhancements to Infoprint Server’s Infoprint Central Web-based print management GUI that are designed to help improve operations and diagnosis.
• RMF postprocessor and Monitor III improvements.
• System Display and Search Facility (SDSF) display support for zAAP utilization.
• An RRS SHUTDOWN command, and the inclusion of RRS status information in MVS™ DISPLAY commands.

The z/OS NSCA® GUI, introduced in z/OS V1.7, is planned to be extended to include support for QoS³ and IDS⁴ policy configuration.

For more information about z/OS V1.8 ease-of-use improvements, refer to the Ease of use topic in the Additional information section.

Statement of general direction

IBM plans to take the following actions effective with the general availability of z/OS V1.8:

• IBM intends to stabilize the prelinker. The prelinker was designed to process long names and support constructed reentrancy in earlier versions of the C compiler on the MVS and OS/390® operating systems. The prelinker, shipped with the z/OS C/C++ run-time library, provides output that is compatible with the linkage editor, shipped with the binder.

The binder is designed to include the function of the prelinker, the linkage editor, the loader, and a number of APIs to manipulate the program object. Its functionality delivers a high level of compatibility with the prelinker and linkage editor, but provides additional functionality in some areas. For more information on the compatibility between the binder and the linker and prelinker, refer to z/OS MVS Program Management: User’s Guide and Reference.

Further enhancements will not be made to the prelinker utility. Enhancements will be made only to the binder, the strategic tool for program object manipulation.

• z/OS V1.8 is planned to be the last release that supports host communication between HCM and Hardware Configuration Definition (HCD) elements via Advanced Program to Program Communication (APPC). Currently, for host communication either TCP/IP or APPC are supported. Starting with the z/OS release available in 2007, the host communication will be done exclusively via TCP/IP.

• z/OS V1.8 is planned to be the last release to include the C/C++ IBM Open Class® (IOC) Dynamic Link Libraries (DLLs). Application development support for the C/C++ IOC Library was withdrawn in z/OS V1.5. The run-time support (DLLs) for applications that use the IOC Library is planned to be removed in the z/OS release available in 2007. Applications that are dependent on the IOC Library will not run starting with the z/OS release available in 2007.

IBM has previously recommended that customers with application code that uses the IOC Library migrate to the Standard C++ Library. The publication IBM Open Class Library Transition Guide was published with z/OS V1.2 C/C++ as a reference for customers migrating their code from the IBM Open Class Library to the Standard C++ Library. You can get this guide by visiting


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

• z/OS V1.6 Communications Server and subsequent releases include a stand-alone TN3270 Server. This stand-alone TN3270 Server is expected to provide increased flexibility, improved reliability, and simplified problem diagnosis as compared to the in-stack version of the TN3270 Server.

In a future release of z/OS Communications Server, support for the in-stack version of the TN3270 Server is planned to be discontinued. In preparation for that change, customers should consider implementing the stand-alone TN3270 Server. For more information, refer to


• IBM plans to replace the RMF LDAP backend in a future release of the operating system. The RMF LDAP interface currently allows access to RMF performance data from application programs. This functionality is planned to be replaced with a Common Information Model (CIM) Monitoring interface that is now part of z/OS V1.7.

IBM plans to enhance the IBM Encryption Facility for z/OS (5655-P97) Encryption Services feature to use the OpenPGP standard, RFC 2440. This support will be designed to allow you to exchange an encrypted, compressed, and/or digitally signed file between your internal data centers using the Encryption Services feature in conjunction with your external partners and vendors who have an installed RFC 2440-compliant client running on z/OS and other operating systems. IBM plans to give additional details on the specific OpenPGP functions at a later date.

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

Reference information

Software Announcement 205-167, dated July 26, 2005 (IBM z/OS V1.7 delivers advances in business resiliency and security)

Business Partner information

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

BP Attachment for Announcement Letter 206-039

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New and enhanced z/OS V1.8 function:

- Support is planned for up to 4 TB (4,398,046,511,104 bytes) of real memory on a single z/OS image on IBM System z9 servers and up to 256 GB on IBM zSeries z990 servers, an increase from the prior maximum of 128 GB. This is expected to enable programs that use large amounts of real memory to avoid paging and swapping overheads, and to help enable workload growth.

- GRS is planned to offer a new programming interface designed to allow authorized programs to set their own concurrent enqueue (ENQ) limits within their address spaces. Some subsystems, such as DB2®, often need to open a large number of data sets concurrently. Others, such as CICS®, can manage many different units of work within a single address space. This new support is intended to allow such programs to increase their ENQ limits beyond the system’s default limit. Also, this support will be designed to allow system programmers to dynamically alter the system-wide limits.

- GRS design is planned to be changed to move selected GRS control blocks above the 2-GB bar. This is expected to help avoid GRS storage constraints as the storage size, processor capacity, and workloads running on large z/OS images grow.

- Language Environment® is planned to deliver enhancements to the C run-time library functions fgetpos(), fsetpos(), and fseek(). This is intended to improve the performance of repositioning operations within multivolume data sets.

- Language Environment is planned to provide full z/OS XL C/C++ run-time library support for large-format sequential data sets opened using QSAM (noseek in C/C++). This support will remove the constraint of 65535 tracks per volume for sequential data sets.

- Language Environment is planned to provide z/OS XL C/C++ run-time library support for VSAM data sets with extended addressability. This support is planned for key-sequenced (KSDS), entry-sequenced (ESDS), and relative-record data sets (RRDS).

- DFSMSrmm™ is planned to extend support for managing removable media across the enterprise. The DFSMSrmm CIM agent is planned to support the creation, change, and deletion of volumes and data sets. This will be in addition to the query and display capabilities provided in z/OS V1.7.

- Support for DASDMS/CVAF Rapid Index Rebuild in z/OS V1.8 will be designed to help speed DADSM VTOC conversions from Indexed to operating system format.

### Application integration

In z/OS V1.8, several important functions intended to deliver further application integration support and support for industry and de facto standards are planned:

- A new system component of z/OS, z/OS XML System Services
- Improvements in Unicode support
- BPXBATCH support for output data sets
- CIM Server and schema upgrades
- The ability to trace transitions in and out of XPLINK in z/OS UNIX® System Services (z/OS UNIX) programs

- Other improvements that are all intended to add new capabilities and help extend and tune your applications

New and enhanced z/OS V1.8 function is planned to include:

- IBM intends to deliver a new LDAP server for z/OS designed to improve performance, scalability, auditability, availability, and ease of use. Also, IBM intends to deliver stronger affinity to z/OS platform features like Parallel Sysplex®. Among the planned enhancements are:
  - A new backend for small- and medium-sized directories designed to cache all directory entries in memory for better performance and use a z/OS UNIX System Services file as its backing store. This is planned to be made available in addition to the existing DB2-based backend. This enhancement is expected to help simplify setup and operation for small- and medium-sized directories.
  - Automatic Restart Management (ARM) and TCP/IP restart support designed to help improve availability.
- Parallel Sysplex support designed to enhance synchronization of LDAP servers within a sysplex and allow a sysplex group to replicate with other LDAP servers.
- The creation of SMF records designed to improve LDAP auditable.

- IBM plans to introduce a new system component of z/OS, z/OS XML System Services (z/OS XML), which will be designed to deliver an optimized set of services for parsing XML documents. It is expected to be of use to IBM, Independent Software Vendors (ISVs), and customer middleware and applications having high performance or unique environmental XML non-validating parsing requirements, such as the ability to run in cross-memory and service request block (SRB) modes.

- Initial support is planned to deliver an assembler language interface. This new function will be intended to satisfy a statement of direction made in Software Announcement 205-167, dated July 26, 2005, and will be available on z/OS V1.7. In a future release, IBM plans to add C/C++ high-level language support.

- Unicode support is vital to enterprises with globalization imperatives; that is, to those for which storing data from different languages in a common format is important. z/OS V1.8 is planned to offer new collation tables needed by middleware applications. Their names will be based on the Unicode Collation Algorithm (UCA), which conforms to the Unicode 4.0 standard. Using the new keywords can allow collation sequences for various locales to be used so that data stored in Unicode can be sorted using the appropriate collating sequence for each supported language.

- The BPXBATCH program is planned to be enhanced to allow STDOUT and STDERR DD statements to specify STDOUT and STDERR DD statements to specify SYSOUT data sets and partitioned, PDSE, and sequential data sets. This can help provide more options for storing the output of programs run using BPXBATCH. This function is also available for z/OS V1.5 and higher with APAR OA11699.

- z/OS V1.8 is planned to include a new version of the Common Information Model (CIM). This includes the upgrade of the CIM Server Runtime Environment to V2.5.1 of OpenPegasus from the Open Group, an upgrade of the CIM Schema to 2.9, and additional resource instrumentation. Key features of the new CIM Server for z/OS are the support for Embedded Objects, Events (CIM Indications), HTTP Chunking, and the capability to run CIM providers in a separate address space. In addition, a command line interface is planned to be provided to execute CIM Client requests against the CIM Server. Improvements are planned to be implemented in the areas of security, reliability, and scalability of the CIM Server.

- RMF™ is planned to implement eServer® OS monitoring Stage 2 for z/OS. Stage 2 includes:
  - A WBEM profile based on the IETF SLP protocol will be intended to make self-discovery of the CIM-based monitoring service easier.
  - Support for CIM indications is designed to enable exploiters using standard CIM client applications to subscribe to asynchronous events.
  - Some additional existing RMF metrics are exposed to CIM.

- A new capability is planned for tracing XPLINK/non-XPLINK transitions. It will be intended to help benefit customers porting UNIX applications to z/OS. This tracing capability will be designed to be turned on or off, and to trace the transitions between upward (non-XPLINK) and downward (XPLINK) growing stacks. This is expected to help application programmers more easily diagnose the performance bottlenecks that might exist in mixed XPLINK/non-XPLINK applications.

- Support is planned for the /etc/inittab file that is used on other UNIX systems to start and restart daemons. This will be intended to allow you to identify system processes to be started during system initialization that should receive additional system management by z/OS UNIX System Services.

- The dbx debugger will be designed to support complex and packed decimal data types used by applications that demand a higher degree of mathematical precision.

- ISPF Edit informational messages are planned to be made available to ISPF Edit macros. Currently, in ISPF Edit interactive mode, the message identifier, short message text, and long message text are displayed on the screen. This change will make the same information available to non-interactive macros in order to help allow them to handle more conditions.

- Additional locale support for the Euro currency symbol is planned to be provided for countries that have recently joined the European Union: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia. As it does for other locales, this support is planned to allow the Euro currency symbol to be displayed and printed as the national currency symbol in these countries. This function is also available with APAR PQ99282 for z/OS V1.4 and higher.

- RMF Spreadsheet macros will be extended to analyze zAAP usage.

- The Software Configuration and Library Manager (SCLM) component of ISPF is planned to include the following enhancements:
  - The ability to specify a language description when using the SPROF (SCLM Edit Profile) command and the SCLMINFO service to define an SCLM language environment.
  - Additional information about return codes in error messages generated by the COBOL parser (FMLPCBL)

- JES3 is planned to be enhanced to allow applications using the SYSOUT Application Programming Interface (SAPI) to retrieve SYSOUT data sets with READ access to the appropriate profile in the JESSPOOL class. Currently, UPDATE access is always required.

**Security**

In z/OS V1.8, z/OS continues to deliver industry leadership for security. Improvements that are all intended to help deliver the kind of security-rich environment that has made z/OS an industry leader include:

- Support for RACF® pass phrases from 14 to 100 characters in length
- Significant improvements to Identrus-certified support for digital certificates, including SCEP and multiple-CA support
- Improvements for tape data set protection using RACF or another external security manager
• Support for the AES for IPSec

z/OS V1.8 is planned to include:

• Support for defining Intrusion Detection Services (IDS) policies in a policy agent configuration file as well as an LDAP server. This solution provides an IDS policy solution that is consistent with other policy types for those installations that do not have an LDAP infrastructure in place or that prefer using configuration files instead of LDAP.

• RACF is planned to support the use of passwords longer than eight characters, often called pass phrases. A pass phrase is a character string that can comprise mixed-case letters, numbers, and special characters including blanks, from 14 to 100 characters in length. Pass phrases allow for an exponentially greater number of possible combinations of characters and numbers than do passwords. A user ID can have both a password and a pass phrase. The same user ID can be used both for existing applications that accept an eight-character password and those that take advantage of the pass phrase infrastructure. This support is intended to help to improve system security and usability.

• Public Key Infrastructure (PKI) Services improvements:
  - Multiple certificate authority (CA) support will be designed to allow more than one instance of the PKI Services daemon to run on a z/OS system. Also, new support is intended to allow you to establish multiple certificate authorities on a single image. Both new functions are expected to help improve the scale and availability of PKI Services management and fulfillment services on z/OS.
  - Simple Certificate Enrollment Protocol (SCEP) support is planned for PKI Services. SCEP support, which is also offered by other industry certificate authority (CA) software, can allow SCEP-enabled clients, such as Cisco routers, to request certificates by sending messages to a CA using the HTTP protocol. The addition of SCEP support will be designed to allow PKI Services to respond to SCEP messages and support both manual and automatic enrollment.

• DFSMS support is planned to introduce new options for securing tape data sets using System Authorization Facility (SAF). These are planned to allow you to define profiles to protect data sets on tape using the DATASETS class without the need to activate the TAPEDSN option or the TAPEVOL class. This will be designed to enable you to use generic profiles for both tape and disk data sets. DFSMS is also planned to provide options you can use to specify that all data sets on a tape volume should have common authorization and that users are authorized to overwrite existing files on a tape volume.

• Support is planned to be provided for the AES algorithm for IP Security with a 128-bit key length. This algorithm replaces DES as the standard encryption algorithm.

• Support for SAF Identity Tokens is planned to provide exploiters with increased user accountability and auditability of resources by providing end-to-end auditing that tracks identities used for initial authentication and those used on the current platform.

• RACF support is planned for virtual key rings. This support is intended to treat the collection of all the certificates owned by one user ID, including the SITE and CERTAUTH reserved user IDs, as an independent key ring. The use of the CERTAUTH virtual key ring will be intended to help eliminate the need to manually create multiple real key rings for SSL-enabled z/OS client applications such as FTP.

Availability

z/OS, in conjunction with IBM System z™ servers, continues to address requirements for high availability. z/OS V1.8 is planned to extend DFSMS fast replication to the data set level on 2105 (Enterprise Storage Server™) and later storage controllers; offer improved recoverability for the z/OS UNIX System Services (z/OS UNIX) byte range lock manager (BRLM) when a system failure occurs in a sysplex; improve the Coupling Facility Resource Manager (CFRM); provide further improvements to Consoles processing and System Logger; and make significant improvements in GDPS™ HyperSwap™ and CF duplexing recovery. These include:

• In z/OS V1.8, DFSMSshm™ fast replication support is planned to extend the full-volume dump function to allow dumping of fast replication backup copies to tape. The dump copies can be created by command or by automatic dump. Fast replication backup versions can be recovered from DASD target volumes (as in previous releases) or from dump tapes.

• In z/OS V1.8, DFSMS fast replication is planned to be enhanced to support data set recovery on 2105 (Enterprise Storage Server) and later disk storage devices. This support is intended to allow recovery of an individual data set from a copy pool backup version using the FRRECOV command, whose syntax will be enhanced to allow one or more fully or partially qualified data set names to be specified.

The backup version being recovered can reside on disk or tape. When the backup version is recovered from disk, the recovery can be performed using fast replication or previously available copy methods.

• In z/OS V1.8, the z/OS UNIX System Services (z/OS UNIX) BRLM is planned to be enhanced. It will be designed to allow applications that use byte-range locking to stay active when a system within the sysplex fails. This is expected to improve availability for those applications.

• Performance improvements are planned for CFRM. These enhancements will be intended to enhance sysplex availability by significantly reducing I/O contention for CFRM couple data sets (CDS). This is expected to improve the performance of sysplex processes that use the CFRM couple data set. These processes include rebuilding Coupling Facility structures, Coupling Facility Duplexing establishment and failover, and connect/disconnect processing. When sysplex partitioning actions are taken, and when a Coupling Facility fails, Parallel Sysplex configurations are expected to recover significantly faster, improving sysplex availability.

• In z/OS V1.8, the single master console is eliminated, and therefore it no longer can act as a single point of failure. The functions associated with the master console, including master command authority and the ability to receive messages delivered via the INTERNAL or INSTREAM message attribute, will be able to be applied to any console, including Extended Multiple Console Support (EMCS) consoles, in the configuration. In addition, the function of console switch will be removed, because you will be able to...
define and use many more consoles that can be used should a primary console fail.

- Console enhancements are intended to deliver additional improvements in message processing and thus help improve Parallel Sysplex availability. These enhancements will be designed to focus on improving availability for sysplex configurations by:
  - Reducing the amount of console configuration data that is passed around the sysplex under serialization. This change is expected to improve overall sysplex recovery time and reduce serialization delays during system startup and planned system shutdown activities.
  - Increasing the maximum number of MCS and SMCS consoles that can be defined in a configuration from 99 per sysplex to 99 per system in the sysplex.
These console enhancements are planned to be available for Early Support Programs (ESP) in the second quarter 2007, and to be generally available in the third quarter 2007.

- System Logger enhancements are planned to include:
  - Support for renaming an existing log stream. This will allow you to maintain the current data under a new name and enable new work to begin after defining a new instance of the log stream, and is expected to help reduce the impact of a damaged log stream by not requiring that the original data be deleted.
  - Support for specifying different groups of log streams in the LOGR CDS. This function will be intended to allow you to separate logger activity for test and production log streams. This can allow them to run in the same sysplex with less interference between them.

- GDPS Enhanced Recovery: GDPS and Peer-to-Peer Remote Copy (PPRC) enhancements will be designed to help reduce the length and variability of failover recovery times by improving the consistency between secondary copies of data at the recovery site and duplexed structures in the Coupling Facility. New interfaces between the Cross-System Communications Facility (XCF) and GDPS will enable “break duplexing” decisions for duplexed Coupling Facility structures to be made in a way that parallels the DASD “break PPRC mirroring” decision.
This enhancement is intended to preserve a usable copy of the duplexed Coupling Facility structures for recovery. It is expected to help improve GDPS recovery time, enable consistent application restart times, and reduce the need for log-based recovery. The XCF support for this function is available for z/OS V1.5 and above with the PTFs for APAR OA11719.

- Improved z/OS UNIX System Services latch contention detection is planned for z/OS V1.8. The output of the DISPLAY OMVS,Waiters operator command is planned to be enhanced to include a table of waiting threads and show file system latches held. These additional display capabilities are expected to help operators better identify the tasks that are waiting and the resources they are waiting for.

**Self-optimization capabilities**

In z/OS V1.8, Communications Server is planned to offer additional network and workload balancing improvements by favoring local servers when possible to reduce inter-CEC network traffic. Also planned are enhanced Workload Manager (WLM) processing for zAAP workloads, improved I/O priority for tape devices, and more integration between WLM and Enterprise Workload Manager (EWLM). These functions are intended to help optimize workloads within an image and across a sysplex:

- A new option will be designed to allow the z/OS Sysplex Distributor to favor local system target servers where possible, while avoiding servers that are no longer active or are overloaded. If the Sysplex Distributor chooses a target on the same system as the client, this new design will be intended to optimize the connection in the following manner:
  - Traffic for the target connection will no longer be routed to the sysplex distributor routing stack.
  - The connections will be eligible for the “fast local sockets” optimized path.
  - Sysplex Sockets will report these sockets as being on the same system.

- In z/OS V1.8, Workload Manager (WLM) improvements are planned to:
  - Manage workloads based on zAAP delay in addition to CP delay. This will be designed to manage workloads based on both zAAP and CP utilization.
  - Change the way the IFAHONORPRIORITY=YES parameter in IEAOPTxx parmlib members is processed. This change is intended to help limit the amount of work that is scheduled on CPUs when sufficient zAAP capacity is available to run work that is eligible to run on zAAPs.
  - This new function will be designed to enable zAAPs to obtain help from CPUs when there is more zAAP eligible work than zAAP capacity. This function is also available with APARs OA14131 and OA13953 for z/OS and z/OS.e V1.6; and z/OS and z/OS.e V1.7.

- System Resource Manager (SRM) is planned to calculate a new static I/O priority for all address spaces and enclaves. The new I/O priority will be derived from the importance of the service class the unit of work is classified to, and will be designed to be used by IOS when no dynamic I/O priority is provided by WLM or SRM. This function will be supported for tape I/O only.

- Global Resource Serialization (GRS) enhancements are planned to enable GRS Star users to specify which system will be the contention notifying system (CNS). In a GRS Star environment, global contention is reported by a single image acting as the CNS. Allowing you to specify the placement of CNS work can help you better balance workload in a sysplex.
All systems in a sysplex must support this function to enable its use. In addition to z/OS V1.8, this new function is planned to be included on z/OS V1.7 with APAR OA11382.

- EWLM support is planned to be added to z/OS WLM:
  - WLM will be designed to accept the classification of work from EWLM. It is planned that EWLM transaction classes can be correlated to WLM service classes via classification rules in the WLM Service Definition. If such a correlation has been defined, WLM will assign the specified WLM service class to the end-to-end work in the EWLM transaction class rather than classify it.

  A performance administrator on the EWLM control center will then be able to see integrated information about end-to-end work within the same transaction class for reporting and management. This is expected to help improve cross-platform workload management.

  - With z/OS V1.8, a high-performance EWLM instrumentation option via WLM Enclave Services is planned to be introduced that is designed to help reduce the instrumentation overhead significantly. The high-performance EWLM instrumentation option is suitable for applications that implement a sequential transaction processing flow without sub-transactions.

  - WLM execution delay monitoring services are planned to be mapped to appropriate Application Response Measurement (ARM) services. This is expected to simplify the EWLM instrumentation of subsystems that are already instrumented with WLM execution delay monitoring services, such as CICS and IMS.

  - The WLM functions are planned to be enhanced to provide a consistent management of process entitlements on both the z/OS-centric world and the heterogeneous world controlled by EWLM. Five new WLM system service classes, SYSSTC1-5, will be introduced. These are associated with fixed dispatching priorities as well as an enhanced resource group concept that allows capacity limits to be defined based on the LPAR capacity or the capacity of a single processor.

  - Currently only CP data is reported to EWLM. With z/OS V1.8, zAAP data is planned to be included in the CPU using and delay samples as well as in the CPU service times reported to EWLM for processes using zAAPs.

- Support for the Object Access Method (OAM) DB2 Binary Large Object Support is planned to enable objects larger than 32 KB to be stored using DB2’s large object (LOB) support and the binary large object (BLOB) data type. A new keyword is planned to be supported on the OAM1 statement of the IEFSSNxx parmlib member to indicate that DB2’s LOB support should be used.

  Coexistence support is planned for earlier release levels to coexist in an OAMplex with z/OS V1.8. Storing in LOB storage structures is expected to improve performance when working with large objects. A 256-MB object, for example, can be stored in a single row in a LOB storage structure, but would require 8000+ rows in a conventional 32-KB table.

- OAM Object Tape Enhancements will add automatic selection of RECYCLE-eligible tape volumes to the existing MOVEVOL with RECYCLE function, and provide support for an immediate backup copy to be created for an object at the time the object is originally stored.

- The z/OS UNIX System Services asynchronous socket read and write operations (the aio_read() and aio_write() callable services) are planned to be converted to use fast-path processing. In addition, performance will be improved for all fast-path syscalls that are called in SRB mode. This is expected to improve performance for applications that use asynchronous I/O or that run in SRB mode.

- SCLM design changes to reduce the number of ISPF service calls and cache certain data, intended to improve the performance of the SCLM Library utility (option 3.1), are planned.

- VARY processing will be redesigned to bring multiple devices online in parallel. This is expected to provide a significant improvement in the elapsed time required to vary a large number of devices online.

- JES2 will be designed to help balance workload in a multi-access spool configuration within a sysplex. This new design will be intended to use approximately the same percentage of active WLM-managed initiators in each service class on each system. Depending on the characteristics of your workloads and their arrival patterns, this can help balance batch workloads across a MAS configuration within a sysplex.

**Networking**

In z/OS V1.8, significant improvements are planned for networking and communications, including the ability to specify subplexes for TCP/IP communications and improved sysplex autonomic functions, support for JES3 NJE connections via TCP/IP, improvements in networking security, and support for Windows™ Terminal Server (WTS).

- The following enhancements are planned for Sysplex environments:
  - The ability to specify a subdivision of a sysplex into multiple ‘subplex’ scopes from a sysplex networking function perspective will be delivered. For example, some VTAM® and TCP/IP instances in a sysplex might belong to one subplex, while other VTAM or TCP/IP instances in the same sysplex might belong to other subplexes. This function can be useful in scenarios where different LPARs within the same sysplex need to be isolated into different security zones, with isolation between those zones.

  - The sysplex autonomies function will be enhanced to deliver monitoring of critical network interfaces so that sysplex autonomies recovery can be triggered when a failure occurs at the interface.

  - A new application is planned to allow dynamic registration and deregistration of Domain Name Server (DNS) records for z/OS hosts, host groups, servers, and server groups and their associated zones based on their current availability. This function is intended to provide an improved alternative to the dynamic registration and deregistration of DNS hostnames currently available with the z/OS BIND DNS 4.9.3 server.

  - Support for JES3 NJE communications using TCP/IP will be available in z/OS V1.8. This function will include support for IPv6, secure sockets (SSL/TLS), and all the NJE constructs (ENDNODE, SUBNET, SUBS, etc.).
Store-and-Forward) supported by the owning JES. This new support will be in addition to the SNA and BSC protocols currently supported by JES3. In order to use the NJE/TCP support, both sides of the connection will be required to support NJE/TCP. This function is expected to be available during the first half 2007.

- Functions to support IP filtering, IPsec, and Internet Key Exchange (IKE) for IPv6 are planned to be provided:
  - The Policy Agent, to help configure IP filters, manual tunnels, and dynamic tunnels for IPv6
  - The TCP/IP profile, to allow configuration of default IP filters for IPv6 when the policy-based IP filters are not active
  - The z/OS Communications Server IKE daemon, to negotiate dynamic tunnels for IPv6
  - The z/OS Network Security Configuration Assistant GUI, to help configure IPsec for IPv6 in the Policy Agent and the IKE daemon
  - The ipsec command, to display and modify installed IP filter information, manual tunnel information, and dynamic tunnel information for IPv6
  - The Traffic Regulation Management daemon (TRMD), to support logging of IP Security events, such as IP filter permits and denies, for IPv6

- z/OS Communications Server delivers a rich set of callable APIs that can be used by network management applications. In z/OS V1.8, a number of additions and improvements will be made to this set of APIs:
  - An API is planned for dropping multiple TCP connections or UDP endpoints.
  - The existing Enterprise Extender network management interface will be enhanced to allow the specification of wildcard characters in the IP name on HPR connection requests. For applications using this interface to gather HPR connection data, using a wildcard value can reduce the number of NMI requests issued to obtain all of the data, and this is expected to improve application performance.
  - The ability to manage TN3270 connections is planned to be improved with:
    - The provision of a new API designed to allow for the retrieval of performance data for TN3270 server sessions
    - The addition of the TCP connection ID to the TN3270 SMF records

- WTS support: Currently, the z/OS SMB server can handle a single user session over a single communications session from a Windows PC. The WTS will be able to act as a client to the z/OS SMB server. The WTS allows many Windows clients to connect to it. The server will, in turn, act as a client to the z/OS SMB server and send many user sessions over a single communications session.

- Linux™ Samba client support: The z/OS SMB server is also planned to support Linux Samba clients.

- The following changes are planned for SNA and Enterprise Extender (EE):
  - An EE connectivity test command is planned to be provided to assist in debugging various network problems. This new test command is intended to be used to test an existing EE connection, or to assist in determining why an EE connection cannot be established.
  - A number of miscellaneous usability, serviceability, and problem determination improvements are planned to be made to SNA, and in particular EE.

- FTP enhancement: z/OS V1.8 Communications Server is planned to provide a new REXX interface designed to be used to invoke the FTP client programatically. This API support will extend the existing FTP Client API to support the REXX programming language. A sample REXX program is also planned to be delivered.

- Telnet enhancements include:
  - Enhancements are planned to allow you to specify that a TN3270 server should automatically clean up hung SNA Telnet sessions when a new TN3270 connection is initiated. This will be designed to help reduce the number of reconnect failures caused when Telnet still has a SNA session for the original connection.
  - Support for the resolution of system symbols is planned for Telnet unformatted system services message (USMSMG) processing. System-specific symbols such as the system name are planned to be displayed to help you diagnose problems.
  - The USS table assignment from the LU exit will be designed to provide more flexibility in assigning a USS table based on client criteria.

- AnyNet® is planned to be removed from z/OS Communications Server. AnyNet has not been enhanced in many years, and has been supplanted by EE, which has superior function and performance.

- The ability to define parallel EE Transmission Groups (TGs) using multiple SAPs is planned to be removed in z/OS V1.8. Parallel TGs defined in such a manner provide no benefit over single EE logical links.

- A new TCP/IP configuration parameter is planned that allows users to designate the source IP address to be used for outbound TCP connections based on the destination IP addresses or networks. In scenarios where outbound TCP connections from z/OS need to traverse multiple distinct networks, this enhancement can help make firewall administration easier, as users can permit traffic from a single, predictable IP address to traverse the firewall.

- In z/OS V1.8, the Firewall Technologies component of the Integrated Security Services element is planned to be removed. Many Firewall Technologies functions have been stabilized for some time and can be replaced using comparable or better functions provided by Communications Server, notably, IPSecurity. In addition, a functionally rich downloadable tool replaces the IPSecurity and IP Filtering configuration GUI support. For more information, refer to z/OS V1R7.0 Migration.

**Ease of use**

Ease of use is a continued focus area in z/OS V1.8. Significant improvements are planned to be delivered in the Health Checker Framework and also additional checks, a number of Hardware Configuration Manager (HCM) and ISPF enhancements, and usability extensions to Infoprint® Server’s Web-based print management interface. These and other usability improvements are planned:
The z/OS NSCA\textsuperscript{2} GUI, introduced in z/OS V1.7, is planned to be extended to include support for QoS\textsuperscript{3} and IDS\textsuperscript{3} policy configuration. This support is planned to allow an administrator to configure IPSec, Application Transparent TLS, QoS, and IDS policy using a consistent user interface. QoS and IDS are currently configured with separate GUIs. These changes are expected to simplify the QoS/IDS configuration tasks by applying the NSCA concepts to QoS and IDS. Also, the NSCA will be designed to generate the policy agent configuration file for IDS policy, as described in the Security topic.

In z/OS V1.8, significant improvements are planned for health checking. The enhanced Health Checker Framework is intended to make it easier to write checks, and to provide improved parmib, parsing, and display support for checks. In addition, a number of new checks are planned for Communications Server, GRS, storage management (ASM and VSM), DFSMS, and Resource Recovery Services (RRS).

These HCM enhancements are planned:
- A new function will be designed to export and import I/O definition files (IODFs). This is expected to improve processing time and help make it easier to send IODFs to IBM for problem determination.
- A new function will be designed to save the layout of a controller in a physical description file (PDF) so it can be used as a model for new controllers.
- Another new function is planned to allow you to locate objects that contain specific values in user fields, filter via wildcards, and select multiple objects for deletion in the Edit dialog.
- Support for the Copy, Add like, and Repeat functions that are provided by Hardware Configuration Definition (HCD) is planned. This support is intended to enable you to define complex objects more quickly and eliminate the need to switch back to HCD to use the function.
- A new function will be intended to allow you to compare HCM configuration files and get HCD IODF Compare Reports via an HCM dialog, and provide an additional means to check whether the changes that have been made were those intended.
- The automatic generation of entries in the activity log file of an IODF is intended to enhance the usability of the activity log file.
- The generation of cable labels is planned to include PCHID information for channel paths. Switch port names are planned to be defaulted to the connection data for each port. These functions will be intended to reduce the need for manual changes.
- The ability to hide connections in the HCM diagram is planned to help allow you to tailor a cropped configuration view for documentation purposes.
- Hardware Configuration Manager (HCM) is planned to provide performance data integration with a Web interface of the RMF Distributed Data Server (DDS) for selected objects of the HCM diagram. The displayed RMF Monitor III online performance data will enable you to detect performance bottlenecks and provide faster problem resolution.

These ISPF improvements are planned:
- Support for SuperC Compare and Search-For functions on the Data Set List Actions panel.

- Enhancements that help make it easier to search for members:
  - A new member list primary command, FILTER, will be designed so you can filter member lists using member attributes. The command will be designed to allow you to use it repeatedly to refine the member list.
  - A new option on the SRCHFOR command will enable you to specify that member list filtering display only those members containing a search string.
- The ISPF workstation connect program WSCON will be designed to auto-discover the IP address of the connected TN3270 workstation and use this address to establish a session with the Workstation Agent. This is expected to improve usability, because you will no longer need to be aware of your IP address or enter it on the Initiate Workstation Connection panel to establish a session.
- ISPF client/server code will be converted to use the IBM C/C++ run-time libraries, which can help reduce the number of C run-time libraries in use on your system. Also, some performance improvement is expected.
- ISPF will be designed to help ensure that, when a member having one or more aliases is renamed or deleted, aliases are updated to point to the new name or deleted. This will be intended to prevent the inadvertent creation of “orphaned” alias entries.
- Data Set List line commands support for tape data sets is planned to be enabled. DFSMSrmm supports this by enabling fast path directly into the relevant part of the DFSMSrmm dialog.

Enhancements to Infoprint Server’s Infoprint Central Web-based print management GUI will be designed to:
- Display additional printer status information, such as paper levels in bins
- Turn printers online and offline and reset them directly from Infoprint Central
- Provide the ability to stop an IP PrintWay\textsuperscript{\textregistered} print job without canceling it
- Allow selection of log messages by hour and also by day
- Provide an audit trail for GUI actions into job and printer logs
- Force error messages to open when an action is performed on the Summary table
- Expand the ping action to include the TRACEROUTE command

RMF enhancements planned to support ease of use include:
- The RMF postprocessor will be designed to honor duration intervals for overview processing in the same way as for standard intervals. This support will be intended to allow you to generate meaningful postprocessor trend reports over long periods and use the spreadsheet macros to plot charts for multiple days and even weeks.
- RMF Monitor III is planned to display LRU status VSAM RLS activity reports, which is expected to enable you to distinguish between buffers below and above the 2-GB bar.
• System Display and Search Facility (SDSF) will display zAAP utilization in addition to system CP utilization on the DA screen.

• Recoverable Resource Services (RRS) enhancements are planned:
  - MVS™ DISPLAY commands are planned to include RRS status information. This is expected to make it easier to implement automatic alerts and capture information in syslog.
  - A new SHUTDOWN command will be designed to allow you to end RRS instead of doing a CANCEL. This is intended to help avoid unnecessary abnormal termination and provide clearer shutdown messages.

2 Network Security Configuration Assistant
3 Quality of Service
4 Intrusion Detection Services

Related information

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

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

One of these new functions is Improved FICON™ error recovery: Some fabric problems can cause FICON links to fail and recover many times in a short period. This can cause system recovery actions to be repeatedly driven while substantially reducing throughput for those links.

z9-109 functions combined with z/OS V1.7 I/O recovery processing improvements are designed to make it possible for the system to detect these conditions and keep an affected path offline until operator action is taken. This is expected to help limit the performance impacts of these failures. This function is expected to be available in the first half of 2006. It will also be available on z/OS V1.4 and higher with APAR OA13644.

IBM System z9 Integrated Information Processor (IBM zIIP): In a press release on January 24, 2006, IBM previewed a new specialty engine called the IBM System z9 Integrated Information Processor (IBM zIIP) for the z9-109, planned for 2006. The IBM zIIP is the latest customer-inspired specialty engine planned for the IBM System z9 mainframe. Following on the success of the widely accepted Integrated Facility for Linux (IFL) and System z9 Application Assist Processors (zAAP), the zIIP is designed to help improve resource optimization and lower the cost of eligible workloads, enhancing the role of the System z9 mainframe as the data hub of the enterprise.

When available, the zIIP’s execution environment will accept eligible work from z/OS V1.6, or higher. z/OS will manage and direct the work between the z9-109 general-purpose processor and the zIIP.

The zIIP is designed so that a program can work with z/OS to have all or a portion of its SRB dispatched work directed to the zIIP. The z/OS operating system, acting on the direction of the program that created the SRB, controls the distribution of the SRB’s work between the general-purpose processors and the zIIPs.

DB2 for z/OS V8 (5625-DB2) will exploit the zIIP capability for eligible work. Types of eligible DB2 workloads executing in SRB mode, portions of which can be directed to the zIIP, are:

• Workloads that leverage existing multi-tiered DB2 applications that via SQL calls use DRDA® over a TCP/IP connection to access the DB2 database server from the application

• Workloads that offer new opportunities to deploy data warehousing and BI solutions that utilize star schema parallel queries on the System z9 servers

• Select internal DB2 for z/OS V8 utility functions (Load, Reorg, Rebuild Index) written in SRB mode, that are used to maintain index maintenance structures

For more information, visit
http://www.ibm.com/systems/z/feature012406/

Installation and customization

3592 media support: Software delivery on 3592 tape media will be supported for the Customized Offerings with the availability of z/OS V1.8, planned for September 2006:

• CBPDO (5751-CS3)
• ServerPac (5751-CS9)
• RefreshPac (5751-CS7)
• ProductPac® (5751-CS5)
• SystemPac® (5751-CS4)

The Customized Offerings Driver (5655-M12) is planned to be updated to include 3592 ordering support with the availability of z/OS V1.8, planned for September 2006.

Customized Fee offerings

CustomPac enhancements: SystemPac and ProductPac are now orderable on ShopzSeries. When you order SystemPac, you can browse the product catalog (including Independent Software Vendor (ISV) products), select the appropriate products to configure your order, and reconcile technical requisites. You can also upload your installed inventory report to determine which upgrades are available for the IBM and ISV products currently installed on your system, and to pre-populate your SystemPac order with the appropriate products. If your order contains products from multiple system releases (SRELS), you have the option to include all products in a single order or split your order into a separate order for each SREL. Full-volume dump and dump by data set are available as delivery methods.

For more information on these offerings, visit
http://www.ibm.com/services/custompac

SubsystemPac now customized in DFDSS logical volume dump format: Currently, SubsystemPacs are available in a copy-by-dataset (IEBCOPY) format only. Concurrent with z/OS V1.8 general availability, an ordering option is planned to be added for z/OS SubsystemPac for delivery in DFSMSdss™ logical dump format. This new option is expected to allow you to restore your subsystem order’s data sets to a volume you choose. You must license one of the optional features of z/OS that includes DFSMSdss to use the new DFSMSdss logical dump format for installing SubsystemPacs.
Important Web sites

- z/OS Web site
  http://www.ibm.com/servers/eserver/zseries/zos/
- z/OS.e Web site
  http://www.ibm.com/servers/eserver/zseries/zose/
- z/OS V1R8.0 Introduction and Release Guide
  http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2A117
- General Q & A
  http://www.ibm.com/servers/eserver/zseries/faq/
- Previously announced statements of direction
- z/OS Internet Library
- Descriptions of courses worldwide
  http://www.ibm.com/services/learning
- z/OS downloads
- CustomPac
  http://www.ibm.com/ca/custompac
- ShopzSeries
  http://www.ibm.com/software/shopzseries
- z/OS Communications Server
- IBM Open Class® Library Transition Guide

Reference information

Software Announcement 205-167, dated July 26, 2005
(IBM z/OS V1.7 delivers advances in business resiliency and security)

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