Preview: IBM z/OS V1.9 advanced infrastructure solutions for your business needs

At a glance

z/OS V1.9 is planned to offer:

- Advancements in ease of use for both new and existing IT professionals coming to z/OS

- Centralized policy-based tailoring for application networking and security

- Centralized encryption key management for Web-based applications

- Autonomic policy-based application performance management

Overview

With z/OS® V1.9, IBM plans to extend the value of the flagship mainframe operating system with improvements in all of its core competencies, including scalability, availability, and resource optimization. With increased focus on simplifying z/OS for IT professionals, plans for z/OS V1.9 include improvements to the IBM Health Checker for z/OS, the IBM Configuration Assistant for z/OS Communications Server, DFSMSrmm™, ISPF, Hardware Configuration Manager (HCM), and Coupling Facility services, as well as a new dbx GUI. Additional enhancements to z/OS are planned to make the operating system more powerful in applying centralized policy-based rules for defining and controlling how your applications behave.

Advancements in the z/OS Communications Server will help put the mainframe in a leadership position in terms of providing network solutions. With the planned ability to provide centralized policy services and policy-based routing (along with ability to apply security, intrusion detection/defense, qualities of service, as well as other features) z/OS can help you customize the network to suit the needs of your applications — doing this in a simplified, centralized, manageable, and auditable manner that is anticipated to be transparent to the application.

The z/OS Integrated Cryptographic Service Facility (ICSF) is planned to be enhanced to include the PKCS#11 standard. ICSF is the fundamental base of z/OS mainframe encryption which enables you to encrypt and decrypt data, generate and manage cryptographic keys, and perform other cryptographic functions dealing with data integrity and digital signatures. With adoption of the PKCS#11 standard, the strength of mainframe encryption and secure centralized key management can be brought to and used by Web-based application and networking environments more easily.

The z/OS Workload Manager (WLM) is planned to be enhanced with improved performance routing, priority settings, and cancel functionality, further improving on the mainframe's leadership position in workload management capabilities. With z/OS WLM, you can define business and performance goals customized for your applications. The z/OS system decides how much resource, such as CPU and storage, should be given

to applications that serve the workload to meet the goal. WLM constantly monitors the system and adapts resource applications to meet application goals, taking into account not only server resources, but network traffic, router bottlenecks, application health, and transaction prioritization as well, thus providing autonomic, policy-based z/OS performance management that can be tuned to meet your applications' needs.

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

Key prerequisites

z/OS V1.9 is planned to run on the following IBM System z™ servers:

- z9 BC
- z9 EC
- z990
- z890
- z900
- z800

For a complete description of z/OS V1.9 software prerequisites, refer to z/OS Planning for Installation (GA22-7504), when available.

Planned availability date

September 2007

Description

Scalability

IBM intends to design z/OS V1.9 to help provide constraint relief and improve overall performance and/or scalability of the following, in addition to other items: Coupling Facility (CF) Duplexing, CF performance monitoring, GRS management of ENQs, XCF Couple Data Set, and Language Environment® heap pool.

- Starting with z/OS V1.6, up to 32 processors are supported in a single logical partition on IBM System z9™ EC and z990 servers. With z/OS V1.9, IBM plans to provide support for z/OS to run up to 54 processors in a single logical partition on z9 EC servers.

  Note: The total number of processors defined in a z/OS logical partition is the sum of general purpose processors (CPs), System z9 Application Assist Processors (zAAPs), and System z9 Integrated Information Processors (zIIPs).

- IBM plans to enhance SMF data management. SMF may be configured to use System Logger to write data to a log stream. This is expected to allow the system to support far higher data write rates than can be supported when using SYS1.MAN data sets when the Coupling Facility (CF) is used. The use of DASDONLY log streams will also be supported. Also, this design will allow you to specify that different SMF record types be written to separate log streams, for which different retention periods can be specified. This can help improve both scalability and SMF data management.

- The Coupling Facility to Coupling Facility (CF) synchronization protocols for CF Duplexing are planned to be streamlined, resulting in improved performance (service time) and throughput for duplexed requests that can take advantage of this enhancement. This enhancement can help reduce the overhead of CF Duplexing, and may help make duplexing a more viable alternative for use in providing high availability for CF structure data. A future CF level will be required, which is planned to be supported on System z9 servers.

- GRS will be designed to further exploit 64-bit addressing. This is expected to dramatically increase the number of concurrent enqueues that can be supported on a z/OS system.

- z/OS V1.9 includes support for improved parallelism in XCF Couple Data Set access channel programs for all supported types of Couple Data Sets. By more granularly expressing whether or not a particular channel program intends to update any data, channel programs that could

not have run in parallel previously will now be able to do so, resulting in improved I/O performance and throughput. This enhancement was originally made available for z/OS V1.4 and higher with APAR OA15409.

- Language Environment will be designed to help improve the performance of applications using heap pools in the following manner:
  - Allow for the heap pool control data and individual cells to be aligned to better optimize use of the processor cache
  - Eliminate stack transitions in an XPLINK environment
  - Design heap pools cells to always align cells on a 16-byte boundary under AMODE 64

- Language Environment plans to eliminate stack transitions during long division and long multiplication in an XPLINK environment.

- In z/OS V1.9, IOS will be designed to provide 31-bit virtual constraint relief by relocating configuration data tables (CDTs). To reduce the amount of common storage required, most CDT blocks will be moved to a common area data space (CADS).

- In order to free up private storage below the 16 MB line, the z/OS BCP is planned to move Allocation's dynamic storage areas above 16 MB.

- In z/OS V1.7, DFSMS provided support for DSNTYPE=LARGE data sets which can contain more than 65,535 tracks. In z/OS V1.9, these TSO/E functions are planned to be updated in order to utilize this support:
  - LISTDSI, used in REXX execs and CLISTs
  - PRINTDS command
  - TRANSMIT and RECEIVE commands

For more information about z/OS V1.9 scalability improvements, refer to the Scalability topic in the **Supplemental information** section.

Application integration

IBM continues to embrace open and industry standards to support your requirements for application portability. z/OS V1.9 is planned to have several important functions intended to extend existing applications, integrate new applications, and support industry and de facto standards: adopting the PKCS#11 standard allows mainframe encryption and centralized key management to be used by Web-based applications and networking environments; improvements to LDAP enable application registries to be more easily centralized, managed, and recovered; improvements to z/OS UNIX® System Services help enable porting of UNIX applications to z/OS; and Language Environment has enhancements to language, currency, multicast source filtering, and XPLINK support, in addition to other items.

- These enhancements are planned for the Program Management Binder:
  - A C front end to binder APIs is designed to simplify using both the regular binder APIs and fastdata APIs for C and C++ programmers.
  - A new binder module map is designed to provide debuggers with a mapping of the symbols that make up the program.
  - Definition Side-Files in z/OS UNIX archives are intended to allow programmers to package their Dynamic Link Library (DLL) side-decks in UNIX archive files produced by the ar utility.
  - The fastdata API rewrite is designed to provide improved reliability for fastdata APIs.
  - Improvements to AMBLIST XREF are intended to provide improved execution time and capability when processing cross-reference information of large programs.
  - RECFM=U verification is designed to provide the same protection against writing programs into non-program PDS libraries as is provided for PDSE libraries.
  - A new binder INFO option will list all installed PTFs in the binder SYSPRINT output.
  - The introduction of the -IMMED option on the CHANGE and REPLACE control statements provides batch functionality previously available only when using the API.

For more information about binder enhancements in z/OS V1.9, refer to the Application integration topic in the **Supplemental information** section.

- IBM plans to provide z/OS dbx support for WebSphere® Developer Debugger for System z

V7.0 (5724-N06) and WebSphere Developer for System z V7.0 (5724-L44). The z/OS dbx enhancements are planned to provide an Eclipse-based graphical user interface (GUI) for interactive, source-level debugging capabilities for compiled System z applications. Running under z/OS UNIX System Services, dbx is designed to enable developers to examine, monitor, and control the running of z/OS UNIX System Services application programs written in C, C++, and High Level Assembler on a z/OS system.

The z/OS dbx support for WebSphere Developer Debugger for System z V7.0 and WebSphere Developer for System z V7.0 is planned to be supported on z/OS V1.8 in the second quarter of 2007. This capability is planned to be integrated into z/OS V1.9. Also refer to Software Announcement 206-320, dated December 5, 2006, IBM WebSphere Developer for System z V7.0, and to Software Announcement 206-324, dated December 5, 2006, IBM WebSphere Developer Debugger for System z V7.0.

- IBM WebSphere Developer for System z V7.0 (5724-L44) includes new support for XL C/C++ mainframe development. The support is available for z/OS V1.8 XL C/C++ whose function can be ordered in the z/OS V1.8 C/C++ Without Debug feature. Core features include:

  – XL C/C++ support for development, editing, content assist, enhanced code navigation, and remote syntax checking

  – XL C/C++ builds on MVS™ or z/OS UNIX System Services

  – Integrated client debugging via Debug Tool

  – Debugging via z/OS dbx

  – Access to z/OS and z/OS UNIX file system resources

  For more information, refer to Software Announcement 206-320, dated December 5, 2006, IBM WebSphere Developer for System z V7.0.

- z/OS V1.9 is planned to provide support for the PKCS#11 standard. PKCS (Public Key Cryptography Standards) is offered by RSA Laboratories of RSA Security Inc. PKCS #11, also known as Cryptoki, is the cryptographic token interface standard. It specifies an application programming interface (API) to devices, referred to as tokens. The PKCS #11 API is an industry-accepted standard commonly used by cryptographic applications. PKCS #11 applications developed for other platforms can be recompiled and run on z/OS.

  Integrated Cryptographic Services Facility (ICSF) plans to support PKCS #11, providing an alternative to IBM's Common Cryptographic Architecture (CCA) and broadening the scope of cryptographic applications that can make use of zSeries® cryptography. RACF® is planned to provide PKCS#11 support. The RACF RACDCERT command will provide token management of certificate, public key, and private key objects.

- Enhancements are planned to some z/OS UNIX commands. These changes are intended to help enable the porting of UNIX applications and shell scripts to the z/OS platform and the development of portable applications. The enhancements include changes to the commands awk, bc, ed, file, mailx, od, sed, tr, uuencode, and uudecode.

- With z/OS V1.9, multiple functions are planned to be provided which are intended to better align with SUSv3:

  – The Language Environment C/C++ Run-Time Library is planned to be updated to better align with SUSv3 with respect to the Threads option (pthread functions).

  – The Language Environment C/C++ Run-Time Library is planned to be updated to implement miscellaneous missing headers and functions in order to better align with SUSv3, specifically the X/Open System Interface Extension (XSI).

  – The Language Environment C/C++ Run-Time Library plans to implement a new environment variable that controls errno values returned from certain functions in order to better align with SUSv3.

- The Language Environment C/C++ Run-Time Library will be designed to provide multicast source filtering APIs as documented in RFC3678.

- Language Environment is planned to satisfy a number of customer requests. For more information refer to the Application integration topic in the **Supplemental information** section.

- Language Environment is also planned to provide support for XPLINK applications running as IMS™ transactions. Support will be added for IMS regions running with or without Language Environment Library Routine Retention (LRR) active.

- IBM intends to improve the availability date of the optimized LDAP directory server, called IBM Tivoli® Directory Server for z/OS as originally planned and announced in Software

Announcement 206-190, dated August 8, 2006, from first half of 2007 to March 30, 2007. This new server is planned to enable you to collapse user registries typically used by distributed applications on z/OS, which can help simplify enterprise management and disaster recovery. The existing Integrated Security Services — LDAP Server will continue be available in V1.8 in addition to the new IBM Tivoli Directory Server for z/OS. You must apply the enabling PTF for OA19286, when available, and all of its prerequisite APARs to use this function.

- Language Environment plans a set of improvements to the CEEDUMP and the LEDATA VERBEXIT.

- Language Environment plans improvements to DLL diagnostics in order to help with DLL failure resolution: DLL error messages are planned to be improved and an option is planned to enable DLL error messages to automatically be written to stderr when the error is detected. In addition, it is planned to record details of up to the last 10 DLL failures, accessible through the CEECAA.

- Language Environment plans to add a trace for the CEEPIPI environment. The trace information is planned to be able to be formatted using the LEDATA VERBEXIT.

For more information about the application integration extensions and improvements in z/OS V1.9, refer to the Application integration topic in the **Supplemental information** section.

Security

IBM intends to design z/OS V1.9 to help improve and extend the world-class security capabilities of the platform in the following: enhancements to PKI Services, RACF, and SAF help improve the creation, authentication, renewal, and management of digital certificates; z/OS System SSL and Application Transparent-TLS are opened up to more application exploiters; RACF has added infrastructure for password phrase support and AES cryptography; and the z/OS Communication Server has introduced many functions for centralized security and policy-based management, in addition to other items.

- z/OS Communications Server is planning a new Network Security Services function to provide centralized certificate services, monitoring and management for IPSec security across z/OS systems within and across sysplexes. Network Security Services will allow IPSec certificates to be kept in a single location, rather than having them reside on each z/OS node. The z/OS Communications Server IKE daemon is planned to be enhanced so that it can be configured to act as a Network Security client. Configuration is on a per-stack basis, such that each NSS-enabled stack will appear to the Network Security Server as an independent client. For TCP/IP stacks that are not configured to use Network Security Services, the IKE daemon will continue to manage certificates out of a local key ring.

- In z/OS V1.9, RACF plans to provide a Java™ interface to administer or query users and groups in RACF. This is intended to increase the accessibility and usability of RACF by allowing programmatic access to RACF from Java programs.

- The FTP server, FTP client, and TN3270 server are planned to use Application Transparent TLS (AT®-TLS) to manage TLS security. AT-TLS supports several security functions that the FTP server, FTP client, and TN3270 servers do not.

- In addition, AT-TLS plans to provide improvements over TLS implemented by the FTP server and client intended to improve performance. Security defined in the TN3270 server profile and FTP.DATA continues to be available.

- Within z/OS V1.9 a number of enhancements to PKI Services and RACF digital certificate are planned. For more information, refer to the Security topic in the **Supplemental information** section.

- In V1.9 of z/OS System SSL, several API enhancements are planned to be implemented to meet some key functional requirements from application exploiters.

  - Tuning capabilities for CRL checking.

  - Callback rehandshake notification — Two callback functions are planned to be added to allow applications to know when the connection is being renegotiated, and when it is again ready for normal secure communications.

  - Hostname validation granularity — A new API gsk_validate_hostname is planned to be introduced.

  - Availability — Hardware to Software notification — Enhancements are planned intended to provide information about when an application has switched from using hardware to software for encryption.

- In z/OS V1.9 an extension is planned to be added to the Password Phrase support first available in z/OS V1.8. The minimum length of a password phrase has been lowered from 14 characters to 9. Password phrases from 9 to 13 characters in length can be used in conjunction with a new password phrase exit (ICHPWX11) you can write to determine whether to accept them. A sample exit is provided, which uses the new System REXX facility to call a REXX exec in which you can code password phrase quality rules. A sample REXX exec is provided. Also, password change logging and enveloping functions are extended to include RACF password phrases.

- The z/OS Network Authentication Service is planned to be enhanced to support the AES cryptographic algorithm. This support will enhance interoperability with other Kerberos implementations by extending the z/OS's cipher suite. Because RACF can act as the registry for the z/OS Network Authentication Service, RACF provides the management interfaces for cryptographic keys. RACF commands are planned to be extended to allow the specification of AES as a supported cipher.

  These functions are designed to support these RFCs:

  – RFC3962 — Advanced Encryption Standard (AES) Encryption for Kerberos 5

  – RFC2025 — The Simple Public-Key GSS-API Mechanism (SPKM)

  – RFC2253 — UTF-8 String Representation of Distinguished names

  – RFC2459 — X.509 Public Key Infrastructure

  – RFC2847 — LIPKEY — A Low Infrastructure Public Key Mechanism Using SPKM

For more information about z/OS V1.9 security improvements, refer to the Security topic in the **Supplemental information** section.

Availability

z/OS V1.9, running on System z servers, is planned to continue to help address requirements for uninterrupted application availability. In z/OS V1.9, support is provided that can improve the availability of the following: Consoles component, System Logger, z/OS UNIX System Services and z/OS UNIX File System, Sysplex Failure Management function, and other functions.

- In z/OS V1.9, the Consoles component is planning to integrate the Message Flood Automation function that was made available via APAR OA17514 for z/OS V1.6 and higher.

  Message Flood Automation provides specialized, policy-driven automation for dealing with high volumes of messages occurring at very high message rates. The policy can be set in a PARMLIB member and examined and modified through operator commands.

- System Logger will be designed to improve availability by providing support for log stream data set asynchronous recalls that will allow for multiple, concurrent, migrated data set recall requests to be processed by System Logger.

- In z/OS V1.9, enhancements are planned for z/OS UNIX System Services to improve management of automount file systems that are managing a directory located in an automove (unmount) file system. The automount file system will now inherit the automove (unmount) attribute rather than mounting as automove (yes). Note that IBM Health Checker for z/OS flags this inconsistency when automount is mounted as automove (yes).

- Enhancements are also planned for z/OS UNIX File System to make the following reliability, availability, and serviceability improvements:

  – Record UNIX file and directory deletion with a new subtype of the SMF type 92 records.

  – In a Shared File System configuration, provide more consistent (and predictable) file system shutdown/recovery behavior based on the file system AUTOMOVE setting. In prior releases, the AUTOMOVE specification is not honored if the file system is mounted in a mode which the Physical File System (PFS) provides "sysplex-aware" capability.

  – F BPXOINIT,FILESYS=FIX Enhancements — Add support to allow FIX to detect and correct CDS Serialization state information when MEMBER GONE (failed system recovery) processing is in progress. Do not attempt to perform file system specific recovery.

  – Extend F BPXOINIT, RECOVER=LATCHES to take multi-address space, multi-system dumps for file system problems — Add logic in file system mainline paths to detect when PFS operations are outstanding; provide multi-address space and multi-system dump utility that RECOVER=LATCHES will invoke to capture file system SVC dumps.

– Reduce use of the Mount Latch and enhance RECOVER=LATCHES to terminate system tasks in some circumstances.

- RRS design is planned to be changed to allow resource manager unregistered requests to be reset. This design is intended to allow you to avoid RRS restart.

- WLM design will be changed to increase the priority of canceled address spaces. This is expected to help them to be terminated more quickly. This can eliminate the need to reset the priority of a canceled job, task, or user to speed address space termination when resolving resource contention issues.

- WLM plans to add a new parameter on the IWMSLIM service, which allows the server region to tell WLM that a number of minimum server regions should be started in parallel. The new parameter can allow applications to control whether WLM should start server regions in parallel or sequentially.

- z/OS V1.9, BCP plans to increase the maximum specifiable size of the MVS System Trace from the current value of 999K per CPU. The practical maximum will be in the order of many MBs per CPU. It will vary depending on the size of the LPAR and the applications that contend for real storage.

- The Sysplex Failure Management (SFM) function in z/OS is being enhanced to support a new policy specification for how long a system should be allowed to remain in the sysplex when it appears unresponsive because it is not updating its system status on the Sysplex Couple Data Set, yet it is still sending XCF signals to other systems in the sysplex. A system that is in this state is definitely not completely inoperable (since it is sending XCF signals), and yet it may not be fully functional either, so it may be causing sysplex sympathy sickness problems for other active systems in the sysplex.

  The new SFM policy externally provides a way for installations to limit their exposure to problems caused by such systems, by automatically removing them from the sysplex after a specified period of time.

- The Sysplex Failure Management (SFM) function in z/OS is being enhanced to support a new policy specification to indicate that, after a specified period of time, the system may automatically terminate XCF members which have been identified as stalled and who also appear to be causing sympathy sickness problems. If allowed to persist, these stalled members can lead to sysplex-wide hangs or other problems, not only within their own XCF group, but also for any other system or application functions that depend on the impacted function. Automatically terminating these members is intended to provide improved application availability within the sysplex.

For more information about z/OS V1.9 availability improvements, refer to the Availability topic in the **Supplemental information** section.

Optimization and management capabilities

z/OS V1.9 is planned to continue offering outstanding overall resource utilization capabilities and policy-based workload management: the z/OS WLM (Workload Manager) is enhanced with improved performance routing, priority settings, and cancel functionality; z/OS supports the latest Common Information Model (CIM) standard to help z/OS to integrate with more industry tools; EWLM is enhanced to include open Group's ARM 4.1 (Application Response Manager) extensions for z/OS.

- WLM is enhanced for discretionary work. During periods of 100% CPU utilization, it is possible that discretionary workloads (workloads defined by your installation to have lower dispatch priority) will not be dispatched for execution. These discretionary workloads may obtain and hold serially reusable resources required by other workloads, which may block the progress of higher dispatch priority workloads. In z/OS V1.9, you will be able to specify that any address spaces and enclaves that have work that is ready to run but do not get CPU service within a certain time interval can be temporarily promoted to a higher dispatch priority. RMF™ supports this function by reporting relevant measurements.

- EWLM's Application Response Measurement (ARM) V4.1 support implements the ARM 4.1 extensions to provide z/OS support for monitoring applications based on an asynchronous messaging model. ARM V4.1 is currently a draft standard and is expected to be published by the OpenGroup. Additional extensions for asynchronous messaging are provided for applications running under CICS® using the WLM Delay Monitoring Services.

- WLM's routing services are enhanced to recognize the zAAP and the zIIP capacity of a System z server.

- In z/OS V1.9 CIM cross-platform support is planned to be updated to a new version of the CIM Schema and the OpenPegasus CIM Server. Along with these updates the CIM Server was enhanced to register with z/OS Automatic Restart Manager and to allow clients to be authenticated through SSL certificates. CIM provides an industry-standard way to externalize information about computing systems so that it can be processed by common tools.

- The serialization used by DFSMSrmm for its CDS is planned to be changed to use a new resource name that includes the CDS ID. This will avoid conflicts when multiple RMMplexes run in the same sysplex.

- DFSMSrmm interaction with system managed volumes in an IBM system managed library is planned to be improved through multiple changes that are expected, especially in larger VTS installations, to result in shorter elapsed time and more flexibility during inventory management.

- DFSMSrmm is planned to be enhanced so that you can now control long-running local subsystem requests. These requests can be ended, held, and released. This enhancement will enable better management when required either by system automation or by the operator because of operational priorities.

- DFSMSrmm CIM provider code is planned to be updated to support OpenPegasus CIM Server with 2.5.1 and the subclasses supported are planned to be extended to cover all DFSMSrmm managed resources.

For more information about z/OS V1.9 optimization and management improvements, refer to the Optimization and management capabilities topic in the **Supplemental information** section.

Networking

Communications Server for z/OS V1.9 is planned to enter into a new era of z/OS middleware enablement by enhancing the security and control of Network communications. Security capabilities are planned for in enhancements with expanded application-transparent security for TN3270 and FTP. Control enhancements are planned in the areas of network traffic and Sysplex operations. Additional enhancements planned include:

- z/OS Communications Server is planned to be enhanced to include a new function, policy-based routing. Policy-based routing enables the TCP/IP stack to make routing decisions that take into account criteria other than just the destination IP address/subnet (as is done with both static and dynamic routing). The additional criteria can include the job name, source port, destination port, protocol type (TCP or UDP), source IP address, NetAccess security zone, and security label. With policy-based routing, you can define policy to select the network that will be used for outbound traffic based on the application originating the traffic. The IBM Configuration Assistant for z/OS Communications Server is planned to be enhanced to support policy-based routing.

- z/OS Communications Server is planned to enhance its multicast support to allow an application to filter the datagrams it receives based on the source address. An extension to the original Any-Source Multicast (ASM) model is planned to be developed called Source-Filtered Multicast (SFM).

- z/OS Communications Server is planned to support the following:
  - Support new APIs to allow applications to specify source filter lists. This allows the local system to filter on source addresses even if the system is not attached to a multicast router, which supports source address filtering.
  - Host support for IGMPv3 and MLDv2. The system responds to queries from multicast routers and reports the source filter state of each interface.

  Note: z/OS Communications Server does not support any multicast routing protocols and therefore does not support any multicast routing functions of IGMPv3 or MLDv2.

- FTP is planned to add support for more Unicode code pages for file storage and file transfer. For file transfer, FTP is planned to add support for code pages UTF-16, UTF-16LE, and UTF-16BE. For file storage, FTP is planned to support code page UTF-16. FTP always stores Unicode files in big endian format.

- Prior to z/OS V1.6, the TN3270E Telnet server runs as a subtask of the TCPIP address space. In z/OS V1.6 through z/OS V1.8, users can run the TN3270E Telnet server as a separately started address space from TCPIP, or continue to run the TN3270E Telnet server as a subtask of the TCPIP address space. In z/OS V1.9, the TN3270E Telnet server is planned to be supported only when run in its own address space.

For more information about z/OS V1.9 security improvements, refer to the Networking topic in the **Supplemental information** section.

Ease of use

With increased focus on simplifying z/OS for IT professionals, z/OS V1.9 is planned to provide improvements to the IBM Health Checker for z/OS, the Configuration Assistant for the z/OS Communications Server, DFSMSrmm, ISPF, Hardware Configuration Manager (HCM), Coupling Facility configuration, and CF performance monitoring, and also provide a new dbx GUI. These improvements can help simplify systems management, improve system programmer and operator productivity, and make the functions easier to understand and use.

These enhancements include:

- The IBM Configuration Assistant for z/OS Communications Server is planned to be extended to include support for PBR (policy-based routing) and NSS (Network Security Services) configuration. This support allows an administrator to configure IPSec, Application Transparent TLS, QoS, IDS, and PBR policy using a consistent user interface. Other new function in the IBM Configuration Assistant for z/OS Communications Server is planned to allow the configuration information for all of these technologies to be managed collectively, providing health check operations designed to insure consistent configuration across the supported technologies. The configuration information can be saved and accessed on a z/OS system or on a Windows™-based file system. The Configuration Assistant for z/OS Communications Server is a separate download. For more information refer to

  http://www.ibm.com/support/docview.wss?rs=852&uid=swg24013160

- SDSF is being enhanced to add the capability to provide access to SDSF functions through REXX variables. The variables will be loaded with data from the SDSF panels, enabling scripts to access the data programmatically. The data can also be changed; this provides a capability similar to action characters and overtyping.

- In z/OS V1.9, enhancements are planned for the D XCF, COUPLE, TYPE=BPXMCDS command to include the current defined values for MAXSYSTEMS, MOUNTS and AMTRULES for the TYPE(BPXMCDS) couple dataset. As these values can be updated dynamically, it will be easier to keep track of changes that could impact the Shared FS configuration.

- System REXX (SYSREXX) — This component makes possible execution of REXX routines in an authorized environment. SYSREXX execs can be used to automate complex operator commands and other system functions. SYSREXX execs can be invoked by a program interface, and by operator command. IBM also plans to make this available for z/OS V1.8 via a Web deliverable.

- IBM Health Checker for z/OS will support checks that are written in REXX using the SYSREXX function. Also, health checks are planned for z/OS UNIX, TSO/E, the Virtual Storage Manager component of the z/OS BCP, and z/OS Communications Server.

- The HCM report printing function is planned to include the ability to print the processor, channel path, CTC, and ESCON® link info based on selected processors and switches. For more information, refer to the Ease of use topic in the **Supplemental information** section.

- Enhancements are planned for the Language Environment CEEBLDTX utility which will be designed to run in a UNIX shell command. This utility will be made available as a shell command.

- System symbol support is planned for DFSMSrmm parmlib members. This enhancement is designed to allow you to share DFSMSrmm parmlib members more easily. Additionally, you can use indirection to point to another parmlib member which might contain system-specific options.

- DFSMSrmm SEARCH subcommands with CLIST are planned to be enhanced so that you can optionally append to an existing CLIST data set. Almost any format of CLIST data set is supported and the subcommands support a way to break the results into chunks for easier results management.

- DFSMSrmm is planned to be enhanced to support almost any unqualified data set name up to 44 characters. The product version can be alphanumeric and volumes and data sets can be de-classified.

- In z/OS V1.9 ISPF plans to:

  – Enhance ISPF to share profile variables across multiple systems in a Parallel Sysplex. This

can eliminate the need for multiple profile datasets in a sysplex.

– Provide support to use system symbols within data set names when entered in ISPF panels.

– Improve ISPT Edit Undo processing. Even after the ISPF Edit save command has issued and the data being edited has been saved, Edit undo buffers will be retained by ISPF. This is intended to allow you to remove changes from edited data even after a save command.

– Provide support for editing and browsing z/OS UNIX and ASCII files.

– Enhance DSLIST, command table support, and REXX variables processing.

- z/OS V1.9 includes support for a number of usability enhancements to the CF structure REALLOCATE process (the SETXCF START, REALLOCATE system command). These enhancements were originally made available for z/OS V1.4 and higher via APAR OA08688.

  The REALLOCATE process itself provides a simple, easy to use mechanism for dynamically optimizing the placement of CF structures among the CFs in a Parallel Sysplex. It determines the "most preferred" CF locations for the CF structure instances based on the CFRM policy and current conditions, and serially moves the structures to those most preferred CFs in a nondisruptive fashion.

  The new enhancements planned to REALLOCATE include:

  – A structure-level CFRM policy control to allow selected structures to be bypassed by REALLOCATE processing, if necessary.

  – Support to automatically initiate duplexing for CF structures that should be duplexed.

  – The capability to complete a pending policy change for structures without rebuilding the structure, whenever possible.

  – Improved processing of structures which make use of the exclusion list (EXCLLIST) option in the CFRM policy.

- z/OS V1.9 includes support for placing coupling facilities into a new state, called "maintenance mode." When a CF is in maintenance mode, it is logically ineligible for CF structure allocation purposes, as if it had been removed from the CFRM policy entirely (although no CFRM policy updates are required to accomplish this). Subsequent rebuild or REALLOCATE processing will also tend to remove any CF structure instances that were already allocated in that CF at the time it was placed into maintenance mode.

  In conjunction with the REALLOCATE command, the new maintenance mode support can greatly simplify operational procedures related to taking a CF down for maintenance or upgrade in a Parallel Sysplex®. In particular, the need to laboriously update or maintain several alternate copies of the CFRM policy that omit a particular CF which is to be removed for maintenance, is avoided.

- RMF is planned to provide information about the CF processor resources consumed by each Coupling Facility (CF) structure. This information will be provided by both Postprocessor and Monitor III. These enhancements are intended to allow better CF performance monitoring and problem determination by tracking utilization at a CF structure level. A future CF level will be required, which is planned to be supported on System z9 servers.

- The z/OS Communications Server Policy Agent is planned to be enhanced to take on additional roles that support the goal of centralized policy management. Policy Agent will be able to be configured to act as a policy server. In this role it can not only read and install local policies for a set of TCP/IP stacks, but can also load policies on demand for policy clients. This will allow all policies for a set of systems to be administered on a single system. Policy Agent will also be able to be configured to act as a policy client. In this role it can connect to the policy server and retrieve remote policies that are then installed in the local TCP/IP stacks. The choice of local or remote policies may be made for each policy type (AT-TLS, IDS, IPSec, QoS) and for each TCP/IP stack.

- In z/OS V1.9, RRS is planned to create a batch interface that has commands and parameters to gather the same information that the online interface provides. This will allow you to collect RRS information when needed and use this information for problem determination if any failure should occur later.

- IBM plans to reduce the amount of storage that DFSMShsm™ uses below 16 MB in an effort to address storage-related abends (878, 80A, and so on). IBM also plans to add additional fields to the DFSMShsm function statistics records (FSRs) to improve the data available for statistical analysis of the DFSMShsm environment.

- DFSMSdfp™ OAM (Object Access Method) introduces two new sublevels into the tape level of the OAM storage hierarchy. This effectively expands OAM's storage hierarchy into four levels: disk, optical, tape sublevel 1 (TSL1), and tape sublevel 2 (TSL2). In addition to enabling the ability to write and read object data directly to and from a given sublevel, this support provides the ability to transition object data within the tape family (for example: from VTS to native tape) during an OSMC storage group cycle. Prior to this support, data movement within the tape family could only be accomplished manually via the MOVEVOL or RECYCLE commands.

- z/OS V1.9 plans to enhance Access Method Services to allow data set name masking on delete requests.

For more information about z/OS V1.9 ease of use improvements, refer to the Ease of use topic in the **Supplemental information** section.

Statements of general direction

z/OS.e V1.8 (5655-G52) is planned to be the last release of z/OS.e. Marketing, ordering, support, and service for z/OS (5694-A01) remain unaffected.

z/OS.e V1.8 remains orderable until its planned withdrawal from marketing in October 2007. In accordance with the z/OS (5694-A01) and z/OS.e service policy (to provide service support for each release for three years following its general availability date), IBM intends to withdraw service for z/OS.e V1.8 in September 2009. For information about other z/OS.e releases, refer to the Related information section for withdrawal from service dates.

IBM plans to provide a new pricing alternative for z/OS, System z New Application License Charges (zNALC). zNALC will replace New Application License Charges (NALC) and z/OS.e, and is intended to be IBM's strategic z/OS offering for new workloads. zNALC is planned to be available March 16, 2007. Refer to Software Announcement 207-006, dated January 9, 2007, for additional information.

IBM plans to take this action during the first quarter of 2007:

- IBM intends to improve the availability date for the support of JES3 NJE communications using TCP/IP which is planned to be made available in z/OS V1.8. as originally planned and announced in the Software Announcement 206-190, dated August 8, 2006, from first half of 2007 to March 30, 2007. This function includes support for IPv6, secure sockets (SSL/TLS), and all the NJE constructs (ENDNODE, SUBNET, Store-and-Forward) supported by the owning JES. This new support is 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 are required to support NJE/TCP. In order to enable JES3 NJE over TCP/IP in z/OS V1.8, you must install the PTF for APAR OA16527 and its prerequisites.

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

- IBM plans that z/OS V1.9 will be last release to support English and Japanese ISPF panels in DFSORT™. There will be no replacement for this limited interactive facility. Support for JCL to sort, copy, or merge will continue to be available.

- z/OS V1.9 is planned to be the last release of z/OS Communications Server which will support the configuration of Traffic Regulation (TR) policy as part of the Quality of Service discipline. The TR configuration function remains supported, but IBM recommends that you implement it as part of the Intrusion Detection Services (IDS) policy configuration made available in z/OS V1.8. This change is only for the TR policy configuration. The TR policy functions themselves remain unaffected. For more information, refer to z/OS V1.8 Communications Server's IP Configuration Guide, chapter 16, "Intrusion Detection Services", and IP Configuration Reference, chapter 23, "Intrusion Detection Services policy".

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

Reference information

- Software Announcement 206-190, dated August 8, 2006 (IBM z/OS V1.8 — Extending the enterprise-wide role)

- Software Announcement 206-191, dated August 8, 2006 (IBM z/OS.e V1.8 — Affordability for mainframe enterprise and Web-based applications)

- Software Announcement 207-008, dated January 16, 2007 (Encryption Facility for z/OS, V1.2 (5655-P97) — Encryption Facility for z/OS, V1.2 offers more flexibility for security-rich exchange of data with business partners)

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 207-018

   https://www.ibm.com/partnerworld/mem/sla.jsp?num=207-018

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Scalability

IBM intends to design z/OS® V1.9 to help provide constraint relief and improve overall performance and/or scalability of the following, in addition to other items: Coupling Facility (CF) Duplexing, CF performance monitoring, GRS management of ENQs, XCF Couple Data Set, and Language Environment® heap pool.

- Starting with z/OS V1.6, up to 32 processors are supported in a single logical partition on IBM System z9™ EC and z990 servers. With z/OS V1.9, IBM plans to provide support for z/OS to run up to 54 processors in a single logical partition on z9 EC servers.

   Note: The total number of processors defined in a z/OS logical partition is the sum of general purpose processors (CPs), System z9 Application Assist Processors (zAAPs), and System z9 Integrated Information Processors (zIIPs).

- IBM plans to enhance SMF data management. SMF may be configured to use System Logger to write data to a log stream. This is expected to allow the system to support far higher data write rates than can be supported when using SYS1.MAN data sets when the Coupling Facility (CF) is used. The use of DASDONLY log streams will also be supported. Also, this design will allow you to specify that different SMF record types be written to separate log streams, for which different retention periods can be specified. This can help improve both scalability and SMF data management.

- The Coupling Facility to Coupling Facility (CF) synchronization protocols for CF Duplexing are planned to be streamlined, resulting in improved performance (service time) and throughput for duplexed requests that can take advantage of this enhancement. This enhancement can help reduce the overhead of CF Duplexing, and may help make duplexing a more viable alternative for use in providing high availability for CF structure data. A future CF level will be required, which is planned to be supported on System z9 servers.

- GRS will be designed to further exploit 64-bit addressing. This is expected to dramatically increase the number of concurrent enqueues that can be supported on a z/OS system. This new function extends GRS's existing 64-bit support for Star-mode control blocks. In z/OS

V1.9, the majority of GRS enqueue-related control blocks reside in storage above the 2 GB bar. This support will be provided for all three GRS modes of None, Ring, and Star.

- z/OS V1.9 includes support for improved parallelism in XCF Couple Data Set access channel programs for all supported types of Couple Data Sets. By more granularly expressing whether or not a particular channel program intends to update any data, channel programs that could not have run in parallel previously will now be able to do so, resulting in improved I/O performance and throughput. This enhancement was originally made available for z/OS V1.4 and higher with APAR OA15409.

- Language Environment will be designed to help improve the performance of applications using heap pools in the following manner:

  - Allow for the heap pool control data and individual cells to be aligned to better optimize use of the processor cache

  - Eliminate stack transitions in an XPLINK environment

  - Design heap pools cells to always align cells on a 16-byte boundary under AMODE 64

- Language Environment plans to eliminate stack transitions during long division and long multiplication in an XPLINK environment.

- In z/OS V1.9, IOS will be designed to provide 31-bit virtual constraint relief by relocating configuration data tables (CDTs). To reduce the amount of common storage required, most CDT blocks will be moved to a common area data space (CADS).

- In order to free up private storage below the 16 MB line, the z/OS BCP is planned to move Allocation's dynamic storage areas above 16 MB.

- In z/OS V1.7, DFSMS provided support for DSNTYPE=LARGE data sets which can contain more than 65,535 tracks. In z/OS V1.9, these TSO/E functions are planned to be updated in order to utilize this support:

  - LISTDSI, used in REXX execs and CLISTs

  - PRINTDS command

  - TRANSMIT and RECEIVE commands

Application integration

IBM continues to embrace open and industry standards to support your requirements for application portability. z/OS V1.9 is planned to have several important functions intended to extend existing applications, integrate new applications, and support industry and de facto standards: adopting the PKCS#11 standard allows mainframe encryption and centralized key management to be used by Web-based applications and networking environments; improvements to LDAP enable application registries to be more easily centralized, managed, and recovered; improvements to z/OS UNIX® System Services help enable porting of UNIX applications to z/OS; and Language Environment has enhancements to language, currency, multicast source filtering, and XPLINK support, in addition to other items.

- These enhancements are planned for the Program Management Binder:

  - A C front end to binder APIs is designed to simplify using both the regular binder APIs and fastdata APIs for C and C++ programmers. The APIs are intended to automatically manage the loading and deleting of binder modules, and obtaining and releasing of buffer storage. Additional utility interfaces are also provided.

  - A new binder module map is designed to provide debuggers with a mapping of the symbols that make up the program. Various important pieces of information about each symbol are planned to be stored in the mapping, which is designed to be quickly read and processed. This is intended to provide an alternative to using the binder APIs for cases where processing time is critical.

  - Definition Side-Files in z/OS UNIX archives are intended to allow programmers to package their Dynamic Link Library (DLL) side-decks in UNIX archive files produced by the ar utility. This offers the archive library provider a transparent mechanism for switching their users from statically linked objects in archives libraries to dynamically linked libraries.

  - The fastdata API rewrite is designed to provide improved reliability for fastdata APIs. In addition, storage constraints are expected to be relieved below 2 GB, because these APIs are now designed to exploit above-the-bar storage.

  - Improvements to AMBLIST XREF are intended to provide improved execution time and

capability when processing cross-reference information of large programs.

  – RECFM=U verification is designed to provide the same protection against writing programs into non-program PDS libraries as is provided for PDSE libraries. The binder is now designed to write programs only into libraries having an undefined record format (RECFM=U), to help prevent changing the DCB attributes of other libraries, unless you specify that it should do so (for example, by specifying RECFM=U on a DD statement).

  – A new binder INFO option will list all installed PTFs in the binder SYSPRINT output. This is intended to allow you to simply and quickly determine the service level of the binder program you are using.

  – The introduction of the -IMMED option on the CHANGE and REPLACE control statements provides batch functionality previously available only when using the API. With it, you can specify that CHANGE, REPLACE or DELETE symbols in the module built thus far by inputs preceding the control statement, rather than (as is the default) affecting the input module following the control statement. This is expected to be useful in situations where the next input file defines multiple modules but the need is to affect other than the first module in that file.

- IBM plans to provide z/OS dbx support for WebSphere® Developer Debugger for System z™ V7.0 (5724-N06) and WebSphere Developer for System z V7.0 (5724-L44). The z/OS dbx enhancements are planned to provide an Eclipse-based graphical user interface (GUI) for interactive, source-level debugging capabilities for compiled System z applications. Running under z/OS UNIX System Services, dbx is designed to enable developers to examine, monitor, and control the running of z/OS UNIX System Services application programs written in C, C++, and High Level Assembler on a z/OS system.

  The z/OS dbx support for WebSphere Developer Debugger for System z V7.0 and WebSphere Developer for System z V7.0 is planned to be supported on z/OS V1.8 in the second quarter of 2007. This capability is planned to be integrated into z/OS V1.9. Also refer to Software Announcement 206-320, dated December 5, 2006, IBM WebSphere Developer for System z V7.0, and to Software Announcement 206-324, dated December 5, 2006, IBM WebSphere Developer Debugger for System z V7.0.

- IBM WebSphere Developer for System z V7.0 (5724-L44) includes new support for XL C/C++ mainframe development. The support is available for z/OS V1.8 XL C/C++ whose function can be ordered in the z/OS V1.8 C/C++ Without Debug feature. Core features include:

  – XL C/C++ support for development, editing, content assist, enhanced code navigation, and remote syntax checking

  – XL C/C++ builds on MVS™ or z/OS UNIX System Services

  – Integrated client debugging via Debug Tool

  – Debugging via z/OS dbx

  – Access to z/OS and z/OS UNIX file system resources

  For more information, refer to Software Announcement 206-320, dated December 5, 2006, IBM WebSphere Developer for System z V7.0.

- z/OS V1.9 is planned to provide support for the PKCS#11 standard. PKCS (Public Key Cryptography Standards) is offered by RSA Laboratories of RSA Security Inc. PKCS #11, also known as Cryptoki, is the cryptographic token interface standard. It specifies an application programming interface (API) to devices, referred to as tokens. The PKCS #11 API is an industry-accepted standard commonly used by cryptographic applications. PKCS #11 applications developed for other platforms can be recompiled and run on z/OS.

  Integrated Cryptographic Services Facility (ICSF) plans to support PKCS #11, providing an alternative to IBM's Common Cryptographic Architecture (CCA) and broadening the scope of cryptographic applications that can make use of zSeries® cryptography. RACF® is planned to provide PKCS#11 support. The RACF RACDCERT command will provide token management of certificate, public key, and private key objects.

- Enhancements are planned to some z/OS UNIX commands. These changes are intended to help enable the porting of UNIX applications and shell scripts to the z/OS platform and the development of portable applications. The enhancements include changes to the commands awk, bc, ed, file, mailx, od, sed, tr, uuencode, and uudecode. Plans include:

  – Options for the **file command** for user-specified sequencing of tests, and alternate "magic files"

  – uuencode and uudecode support of the MIME Base64 algorithm

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- Enhancements are planned for z/OS UNIX File System application programming capability for asynchronous socket communications by allowing I/O completion notification to be delivered to a message queue. This allows sockets and even specific asynchronous requests to be partitioned in such a way that the I/O completions are delivered to specific queues.

- With z/OS V1.9, multiple functions are planned to be provided which are intended to better align with SUSv3:

  - The Language Environment C/C++ Run-Time Library is planned to be updated to better align with SUSv3 with respect to the Threads option (pthread functions).

  - The Language Environment C/C++ Run-Time Library is planned to be updated to implement miscellaneous missing headers and functions in order to better align with SUSv3, specifically the X/Open System Interface Extension (XSI).

  - The Language Environment C/C++ Run-Time Library plans to implement a new environment variable that controls errno values returned from certain functions in order to better align with SUSv3.

- The Language Environment C/C++ Run-Time Library will be designed to provide multicast source filtering APIs as documented in RFC3678.

- Language Environment is planned to satisfy the following customer requirements:

  - Reducing usage of lower-case English characters in the Options Report, Storage Report, and CEEDUMP is planned when NATLANG is UEN or JPN. A new callable service, CEE3MC2, is planned that will return both the national and international currency symbols.

  - Enhancements to the CICS® CLER transaction are planned.

  - A pair of new callable services are planned, CEE3DLY and CEEDLYM, that will be designed to enable Language Environment-conforming applications to suspend execution. These new services are intended to allow you to migrate COBOL applications away from ILBOWAT0.

  - Language Environment plans to provide AMODE 64 functions that assist in tracing the call chain backwards and allow a "goto" capability to a known location in the program call stack. These functions are similar to the AMODE 31 services CEETBCK and CEEGOTO.

- Language Environment is also planned to provide support for XPLINK applications running as IMS™ transactions. Support will be added for IMS regions running with or without Language Environment Library Routine Retention (LRR) active.

- IBM intends to improve the availability date of the optimized LDAP directory server, called IBM Tivoli® Directory Server for z/OS, as originally planned and announced in Software Announcement 206-190, dated August 8, 2006, from first half of 2007 to March 30, 2007. This new server is planned to enable you to collapse user registries typically used by distributed applications on z/OS, which can help simplify enterprise management and disaster recovery. The existing Integrated Security Services — LDAP Server will continue be available in V1.8 in addition to the new IBM Tivoli Directory Server for z/OS. You must apply the enabling PTF for OA19286, when available, and all of its prerequisite APARs to use this function.

- Language Environment plans a set of improvements to the CEEDUMP and the LEDATA VERBEXIT.

- Language Environment plans improvements to DLL diagnostics in order to help with DLL failure resolution: DLL error messages are planned to be improved and an option is planned to enable DLL error messages to automatically be written to stderr when the error is detected. In addition, it is planned to record details of up to the last 10 DLL failures, accessible through the CEECAA.

- Language Environment plans to add a trace for the CEEPIPI environment. The trace information is planned to be able to be formatted using the LEDATA VERBEXIT.

Security

IBM intends to design z/OS V1.9 to help improve and extend the world-class security capabilities of the platform in the following: enhancements to PKI Services, RACF, and SAF help improve the creation, authentication, renewal, and management of digital certificates; z/OS System SSL and Application Transparent-TLS are opened up to more application exploiters; RACF has added infrastructure for password phrase support and AES cryptography; and the z/OS Communication Server has introduced many functions for centralized security and policy-based management, in addition to other items.

- z/OS Communications Server is planning a new Network Security Services function to provide centralized certificate services, monitoring, and management for IPSec security across z/OS systems within and across sysplexes. Network Security Services will allow IPSec certificates to be kept in a single location, rather than having them reside on each z/OS node. The z/OS Communications Server IKE daemon is planned to be enhanced so that it can be configured to act as a Network Security client. Configuration is on a per-stack basis, such that each NSS-enabled stack will appear to the Network Security Server as an independent client. For TCP/IP stacks that are not configured to use Network Security Services, the IKE daemon will continue to manage certificates out of a local key ring.

- In z/OS V1.9, RACF plans to provide a Java™ interface to administer or query users and groups in RACF. This is intended to increase the accessibility and usability of RACF by allowing programmatic access to RACF from Java programs.

- The FTP server, FTP client, and TN3270 server are planned to use Application Transparent TLS (AT®-TLS) to manage TLS security. AT-TLS supports several security functions that the FTP server, FTP client, and TN3270 servers do not. For example, AT-TLS is designed to allow you to:

  - Specify the label of the certificate to be used for authentication instead of using the Default certificate

  - Use an LDAP server to validate certificates

  - Support SSL Session Key Refresh

  - Support SSL Sysplex Session ID Caching

  - Support new or multiple key rings

  - Under security administrator control, optionally trace decrypted SSL data in a data trace

  - Receive more detailed diagnostic messages in syslogd

- In addition, AT-TLS plans to provide improvements over TLS implemented by the FTP server and client intended to improve performance. Security defined in the TN3270 server profile and FTP.DATA continues to be available.

- Within z/OS V1.9 the following enhancements to PKI Services and RACF digital certificate are planned:

  - Writeable SAF Key rings are intended to enable z/OS applications to programmatically populate certificates in SAF/RACF key rings.

  - Support of certificates with two-byte UTF8 characters that can be mapped to code page 1047 is planned. Such certificates can be installed in RACF, and managed and exploited through the RACDCERT functions. They can also be used for authentication to RACF. For example, the Spanish letter 'n' with tilde will be able to be included in a distinguished name.

  - The use of SDBM credential for the LDAP administrator in PKI Services will be allowed. The LDAP server has multiple back ends. It allows ACLs for entries using X.500 type user ID or RACF-style user ID. Currently PKI Services only accepts the X.500 type user ID. The PKI daemon code will be enhanced to accept the RACF user ID credential.

  - An e-mail notification for the PKI administrator will be provided for pending certificate requests. Currently, administrators must submit a query to determine whether there are pending approval requests.

  - The maximum limit of the certificate validity period will be changed from 3650 days to 9999 days.

  - A query will be allowed on expiring certificates based on the number of days until they will become expired.

  - Automated certificate renewal will be designed to send renewal certificates via e-mail when the expiration dates for older certificates are approaching.

  - A new REFRESH reminder message is planned to be issued after changes made to a certificate or a certificate filter profile through the RACDCERT command, to indicate that a refresh to the DIGTCERT or DIGTMAP class is needed after the affected RACDCERT commands when the DIGTCERT or DIGTNMAP class is RACLISTed.

  - The generation of unused serial numbers will be avoided in the event of an ICSF failure when the PKI CA has a hardware key.

- In Release 9 of z/OS System SSL, several API enhancements are planned to be implemented to meet some key functional requirements from application exploiters.

- Tuning capabilities for CRL checking — A new tuning environment variable and environment attribute is being added to define the SSL environment. The tuning variables will allow you to specify:

    -- High security — Fail if there is no CRL defined or if unable to contact the LDAP server.

    -- Medium security — Allow if no CRL defined but fail if unable to contact the LDAP server. This is current implementation, and will be the default.

    -- Low Security — Allow if unable to contact the LDAP server.

- Callback rehandshake notification — Two callback functions are planned to be added to allow applications to know when the connection is being renegotiated, and when it is again ready for normal secure communications. The applications will then be able to cater for periods when communicating SSL applications may not be able to send or receive application data.

- Hostname validation granularity — A new API gsk_validate_hostname is planned to be introduced. This new API is similar to gsk_validate_server that allows the caller to specify what hostname fields are to be compared and what order the comparisons are to be performed.

- Availability — Hardware to Software notification — Enhancements are planned intended to provide information about when an application has switched from using hardware to software for encryption. Currently, when an SSL application encounters a serious error when using hardware services through ICSF, SSL will switch off hardware support for that particular encryption type and perform the crypto in its software implementation. When the switch occurs, System SSL will write an initial message to the console and more detailed messages to the GSKSRVR job log.

- In z/OS V1.9 an extension is planned to be added to the Password Phrase support first available in z/OS V1.8. The minimum length of a password phrase has been lowered from 14 characters to 9. Password phrases from 9 to 13 characters in length can be used in conjunction with a new password phrase exit (ICHPWX11) you can write to determine whether to accept them. A sample exit is provided, which uses the new System REXX facility to call a REXX exec in which you can code password phrase quality rules. A sample REXX exec is provided. Also, password change logging and enveloping functions are extended to include RACF password phrases.

- The z/OS Network Authentication Service is planned to be enhanced to support the AES cryptographic algorithm. This support will enhance interoperability with other Kerberos implementations by extending the z/OS's cipher suite. Because RACF can act as the registry for the z/OS Network Authentication Service, RACF provides the management interfaces for cryptographic keys. RACF commands are planned to be extended to allow the specification of AES as a supported cipher.

  These functions are designed to support these RFCs:

  - RFC3962 — Advanced Encryption Standard (AES) Encryption for Kerberos 5

  - RFC2025 — The Simple Public-Key GSS-API Mechanism (SPKM)

  - RFC2253 — UTF-8 String Representation of Distinguished Names

  - RFC2459 — X.509 Public Key Infrastructure

  - RFC2847 — LIPKEY — A Low Infrastructure Public Key Mechanism Using SPKM

Availability

z/OS V1.9, running on System z servers, is planned to continue to help address requirements for uninterrupted application availability. In z/OS V1.9, support is provided that can improve the availability of the following: Consoles component, System Logger, z/OS UNIX System Services and z/OS UNIX File System, Sysplex Failure Management function, and other functions.

- In z/OS V1.9, the Consoles component is planning to integrate the Message Flood Automation function that was made available via APAR OA17514 for z/OS V1.6 and higher.

  Message Flood Automation provides specialized, policy-driven automation for dealing with high volumes of messages occurring at very high message rates. The policy can be set in a PARMLIB member and examined and modified through operator commands. The policy specifies the types of messages that are to be monitored, the criteria for establishing the onset and ending of a message flood, and the actions that may be taken should a flood occur. Multiple levels of policy specification allow criteria and actions to be applied to message types,

jobs, or even individual message IDs. The actions that may be taken during a message flood include:

- – Preventing the flood messages from being displayed on a console

- – Preventing the flood messages from being logged in the SYSLOG or OPERLOG

- – Preventing the flood messages from being queued for automation

- – Preventing the flood messages from propagating to other systems in a sysplex (if the message is not displayed, logged, or queued for automation)

- – Preventing the flood messages from being queued to the Action Message Retention Facility (AMRF) if the message is an action message

- – Taking action against the address space issuing the flood messages, by issuing a command (typically a CANCEL command)

A message rate monitoring facility is provided to assist the installation in establishing Message Flood Automation policy.

- • System Logger will be designed to improve availability by providing support for log stream data set asynchronous recalls that will allow for multiple, concurrent, migrated data set recall requests to be processed by System Logger.

- • In z/OS V1.9, enhancements are planned for z/OS UNIX System Services to improve management of automount file systems that are managing a directory located in an automove (unmount) file system. The automount file system will now inherit the automove (unmount) attribute rather than mounting as automove (yes). Note that IBM Health Checker for z/OS flags this inconsistency when automount is mounted as automove (yes).

- • Enhancements are also planned for z/OS UNIX File System to make the following reliability, availability, and serviceability improvements:

- – In a Shared File System configuration, provide more consistent (and predictable) file system shutdown/recovery behavior based on the file system AUTOMOVE setting. In prior releases, the AUTOMOVE specification is not honored if the file system is mounted in a mode which the Physical File System (PFS) provides "sysplex-aware" capability.

- – F BPXOINIT,FILESYS=FIX Enhancements — Add support to allow FIX to detect and correct CDS Serialization state information when MEMBER GONE (failed system recovery) processing is in progress. Do not attempt to perform file system specific recovery.

- – Extend F BPXOINIT, RECOVER=LATCHES to take multi-address space, multi-system dumps for file system problems — Add logic in file system mainline paths to detect when PFS operations are outstanding; provide multi-address space and multi-system dump utility that RECOVER=LATCHES will invoke to capture file system SVC dumps.

- – Reduce use of the Mount Latch and enhance RECOVER=LATCHES to terminate system tasks in some circumstances.

- – Record UNIX file and directory deletion with a new subtype of the SMF type 92 records for improved availability.

- • Currently, if RRS was unable to properly or completely unset a resource manager while processing a Registration Services "unregister" RM request, the resource manager could be left in a "unregister" state with Registration Services but still set with RRS. This situation cannot be resolved without recycling RRS. To avoid an RRS warm start, in z/OS V1.9, IBM plans to have an option to reset the resource manager on the RRS panels designed to allow for a cleaner and more acceptable recovery action and also allow the terminated RRS resource manager to restart and recover quickly.

- • WLM design will be changed to increase the priority of canceled address spaces. This is expected to help them to be terminated more quickly. This can eliminate the need to reset the priority of a canceled job, task, or user to speed address space termination when resolving resource contention issues.

- • WLM plans to add a new parameter on the IWMSLIM service, which allows the server region to tell WLM that a number of minimum server regions should be started in parallel. The new parameter can allow applications to control whether WLM should start server regions in parallel or sequentially.

- • z/OS V1.9, BCP plans to increase the maximum specifiable size of the MVS System Trace from the current value of 999K per CPU. The practical maximum will be in the order of many MBs per CPU. It will vary depending on the size of the LPAR and the applications that contend for real storage.

- The Sysplex Failure Management (SFM) function in z/OS is being enhanced to support a new policy specification for how long a system should be allowed to remain in the sysplex when it appears unresponsive because it is not updating its system status on the Sysplex Couple Data Set, yet it is still sending XCF signals to other systems in the sysplex. A system that is in this state is definitely not completely inoperable (since it is sending XCF signals), and yet it may not be fully functional either, so it may be causing sysplex sympathy sickness problems for other active systems in the sysplex.

  The new SFM policy externally provides a way for installations to limit their exposure to problems caused by such systems, by automatically removing them from the sysplex after a specified period of time.

- The Sysplex Failure Management (SFM) function in z/OS is being enhanced to support a new policy specification to indicate that, after a specified period of time, the system may automatically terminate XCF members which have been identified as stalled and who also appear to be causing sympathy sickness problems. If allowed to persist, these stalled members can lead to sysplex-wide hangs or other problems, not only within their own XCF group, but also for any other system or application functions that depend on the impacted function. Automatically terminating these members is intended to provide improved application availability within the sysplex.

- z/OS V1.9 is planned to provide an option for SLIP to trace five words of variable information into the unique fields of system trace entries using a new STDATA keyword.

Optimization and management capabilities

z/OS V1.9 is planned to continue offering outstanding overall resource utilization capabilities and policy-based workload management: the z/OS WLM (Workload Manager) is enhanced with improved performance routing, priority settings, and cancel functionality; z/OS supports the latest Common Information Model (CIM) standard to help z/OS to integrate with more industry tools; EWLM is enhanced to include open Group's ARM 4.1 (Application Response Manager) extensions for z/OS.

- WLM is enhanced for discretionary work. During periods of 100% CPU utilization, it is possible that discretionary workloads (workloads defined by your installation to have lower dispatch priority) will not be dispatched for execution. These discretionary workloads may obtain and hold serially reusable resources required by other workloads, which may block the progress of higher dispatch priority workloads. In z/OS V1.9, you will be able to specify that any address spaces and enclaves that have work that is ready to run but do not get CPU service within a certain time interval can be temporarily promoted to a higher dispatch priority. RMF™ supports this function by reporting relevant measurements.

- EWLM's Application Response Measurement (ARM) V4.1 support implements the ARM 4.1 extensions to provide z/OS support for monitoring applications based on an asynchronous messaging model. ARM V4.1 is currently a draft standard and is expected to be published by the OpenGroup. Additional extensions for asynchronous messaging are provided for applications running under CICS using the WLM Delay Monitoring Services.

- WLM's routing services are enhanced to recognize the zAAP and the zIIP capacity of a System z server.

- z/OS V1.9 plans to include a new version of the Common Information Model (CIM). This includes the upgrade of the CIM Server Runtime Environment to V2.6 of OpenPegasus from the Open Group, an upgrade of the CIM Schema to 2.11, as well as additional z/OS resource instrumentation. Key features of the new CIM Server for z/OS are the support for Automatic Restart Manager and authentication of Clients through SSL certificates. CIM provides an industry-standard way to externalize information about computing systems so that it can be processed by common tools.

- The serialization used by DFSMSrmm™ for its CDS is planned to be changed to use a new resource name that includes the CDS ID. This will avoid conflicts when multiple RMMplexes run in the same sysplex.

- DFSMSrmm interaction with system managed volumes in an IBM system managed library is planned to be improved through multiple changes that are expected, especially in larger VTS installations, to result in shorter elapsed time and more flexibility during inventory management.

- DFSMSrmm is planned to be enhanced so that you can now control long-running local subsystem requests. These requests can be ended, held, and released. This enhancement will enable better management when required either by system automation or by the operator because of operational priorities.

- DFSMSrmm CIM provider code is planned to be updated to support OpenPegasus CIM Server with 2.5.1 and the subclasses supported are planned to be extended to cover all DFSMSrmm managed resources.

Networking

Communications Server for z/OS V1.9 is planned to enter into a new era of z/OS middleware enablement by enhancing the security and control of Network communications. Security capabilities are planned for in enhancements with expanded application-transparent security for TN3270 and FTP. Control enhancements are planned in the areas of network traffic and Sysplex operations. Additional enhancements planned include:

- z/OS Communications Server is planned to be enhanced to include a new function, policy-based routing. Policy-based routing enables the TCP/IP stack to make routing decisions that take into account criteria other than just the destination IP address/subnet (as is done with both static and dynamic routing). The additional criteria can include the job name, source port, destination port, protocol type (TCP or UDP), source IP address, NetAccess security zone, and security label. With policy-based routing, you can define policy to select the network that will be used for outbound traffic based on the application originating the traffic. The IBM Configuration Assistant for z/OS Communications Server is planned to be enhanced to support policy-based routing.

- z/OS Communications Server is planned to enhance its multicast support to allow an application to filter the datagrams it receives based on the source address. An extension to the original Any-Source Multicast (ASM) model is planned to be developed called Source-Filtered Multicast (SFM).

- z/OS Communications Server is planned to support the following:

  – Support new APIs to allow applications to specify source filter lists. This allows the local system to filter on source addresses even if the system is not attached to a multicast router, which supports source address filtering.

  – Host support for IGMPv3 and MLDv2. The system responds to queries from multicast routers and reports the source filter state of each interface.

  Note: z/OS Communications Server does not support any multicast routing protocols and therefore does not support any multicast routing functions of IGMPv3 or MLDv2.

- FTP is planned to add support for more Unicode code pages for file storage and file transfer. For file transfer, FTP is planned to add support for code pages UTF-16, UTF-16LE, and UTF-16BE. For file storage, FTP is planned to support code page UTF-16. FTP always stores Unicode files in big endian format.

- Prior to z/OS V1.6, the TN3270E Telnet server runs as a subtask of the TCPIP address space. In z/OS V1.6 through z/OS V1.8, users can run the TN3270E Telnet server as a separately started address space from TCPIP, or continue to run the TN3270E Telnet server as a subtask of the TCPIP address space. In z/OS V1.9, the TN3270E Telnet server is planned to be supported only when run in its own address space.

Ease of use

With increased focus on simplifying z/OS for IT professionals, z/OS V1.9 is planned to provide improvements to the IBM Health Checker for z/OS, the Configuration Assistant for the z/OS Communications Server, DFSMSrmm, ISPF, Hardware Configuration Manager (HCM), Coupling Facility configuration, and CF performance monitoring, and also provide a new dbx GUI. These improvements can help simplify systems management, improve system programmer and operator productivity, and make the functions easier to understand and use.

These enhancements include:

- The IBM Configuration Assistant for z/OS Communications Server is planned to be extended to include support for PBR (policy-based routing) and NSS (Network Security Services) configuration. This support allows an administrator to configure IPSec, Application Transparent TLS, QoS, IDS, and PBR policy using a consistent user interface. Other new function in the IBM Configuration Assistant for z/OS Communications Server is planned to allow the configuration information for all of these technologies to be managed collectively, providing health check operations designed to insure consistent configuration across the supported technologies. The configuration information can be saved and accessed on a z/OS system or on a Windows™-based file system. The Configuration Assistant for z/OS Communications Server is a separate download. For more information refer to

- SDSF is being enhanced to add the capability to provide access to SDSF functions through REXX variables. The variables will be loaded with data from the SDSF panels, enabling scripts to access the data programmatically. The data can also be changed; this provides a capability similar to action characters and overtyping.

- In z/OS V1.9, enhancements are planned for the D XCF, COUPLE, TYPE=BPXMCDS command to include the current defined values for MAXSYSTEMS, MOUNTS and AMTRULES for the TYPE (BPXMCDS) couple dataset. As these values can be updated dynamically, it will be easier to keep track of changes that could impact the shared file system configuration.

- System REXX (SYSREXX) — This component makes possible execution of REXX routines in an authorized environment. SYSREXX execs can be used to automate complex operator commands and other system functions. SYSREXX execs can be invoked by a program interface, and by operator command. IBM also plans to make this available for z/OS V1.8 via a Web deliverable.

- IBM Health Checker for z/OS will support checks that are written in REXX using the SYSREXX function. Also, health checks are planned for z/OS UNIX, TSO/E, the Virtual Storage Manager component of the z/OS BCP, and z/OS Communications Server.

- The HCM report printing function is planned to include the ability to print the processor, channel path, CTC, and ESCON® link info based on selected processors and switches.

  In addition there are several changes to HCM that are intended to further enhance usability by:

  – Loading large HCM configuration files more quickly.

  – Allowing you to define new partitions and channel subsystems more quickly.

  – Improving the resynchronization processing that HCM may need to initiate. It now requires much less time.

  – Allowing easy sequential sharing of the same HCM configuration file between multiple HCM users by providing a new option to place an HCM configuration file on the host. This is intended to allow you and others who work with the host-based HCM configuration files to always work with the most up-to-date versions.

  – Enhancing the HCM Subsystem Creation Wizard so that changes can be performed on an existing DASD subsystem, allowing for quick definition of changes to I/O (for example, a DASD upgrade).

  – Making a new view, the Vertical Processor View, available in order to show a consistent physical picture of the processor. The new view shows all channel subsystems above each other, allowing only PCHIDs to be shown even for spanned CHPIDs. It is possible to toggle between the existing Horizontal Processor View and the Vertical Processor View.

- Enhancements are planned for the Language Environment CEEBLDTX utility which will be designed to run in a z/OS UNIX shell environment. This utility will be made available as a shell command.

- System symbol support is planned for DFSMSrmm parmlib members. This enhancement is designed to allow you to share DFSMSrmm parmlib members more easily. Additionally, you can use indirection to point to another parmlib member which might contain system-specific options.

- DFSMSrmm SEARCH subcommands with CLIST are planned to be enhanced so that you can optionally append to an existing CLIST data set. Almost any format of CLIST data set is supported and the subcommands support a way to break the results into chunks for easier results management.

- DFSMSrmm is planned to be enhanced to support almost any unqualified data set name up to 44 characters. The product version can be alphanumeric and volumes and data sets can be de-classified.

- In z/OS V1.9 ISPF plans to:

  – Enhance ISPF to share profile variables across multiple systems in a Parallel Sysplex®. This can eliminate the need for multiple profile datasets in a sysplex.

  – Provide support to use system symbols within data set names when entered in ISPF panels.

- Improve ISPT Edit Undo processing. Even after the ISPF Edit save command has issued and the data being edited has been saved, Edit undo buffers will be retained by ISPF. This is intended to allow you to remove changes from edited data even after a save command.

- Provide support for editing and browsing z/OS UNIX and ASCII files.

- Enhance DSLIST, command table support, and REXX variables processing.

- z/OS V1.9 includes support for a number of usability enhancements to the CF structure REALLOCATE process (the SETXCF START,REALLOCATE system command). These enhancements were originally made available for z/OS V1.4 and higher via APAR OA08688.

   The REALLOCATE process itself provides a simple, easy to use mechanism for dynamically optimizing the placement of CF structures among the CFs in a Parallel Sysplex. It determines the "most preferred" CF locations for the CF structure instances based on the CFRM policy and current conditions, and serially moves the structures to those most preferred CFs in a nondisruptive fashion.

   The new enhancements planned to REALLOCATE include:

   - A structure-level CFRM policy control to allow selected structures to be bypassed by REALLOCATE processing, if necessary.

   - Support to automatically initiate duplexing for CF structures that should be duplexed.

   - The capability to complete a pending policy change for structures without rebuilding the structure, whenever possible.

   - Improved processing of structures which make use of the exclusion list (EXCLLIST) option in the CFRM policy.

- z/OS V1.9 includes support for placing coupling facilities into a new state, called "maintenance mode." When a CF is in maintenance mode, it is logically ineligible for CF structure allocation purposes, as if it had been removed from the CFRM policy entirely (although no CFRM policy updates are required to accomplish this). Subsequent rebuild or REALLOCATE processing will also tend to remove any CF structure instances that were already allocated in that CF at the time it was placed into maintenance mode.

   In conjunction with the REALLOCATE command, the new maintenance mode support can greatly simplify operational procedures related to taking a CF down for maintenance or upgrade in a Parallel Sysplex. In particular, the need to laboriously update or maintain several alternate copies of the CFRM policy that omit a particular CF which is to be removed for maintenance, is avoided.

- RMF is planned to provide information about the CF processor resources consumed by each Coupling Facility (CF) structure. This information will be provided by both Postprocessor and Monitor III. These enhancements are intended to allow better CF performance monitoring and problem determination by tracking utilization at a CF structure level. A future CF level will be required, which is planned to be supported on System z9 servers.

- The z/OS Communications Server Policy Agent is planned to be enhanced to take on additional roles that support the goal of centralized policy management. Policy Agent will be able to be configured to act as a policy server. In this role it can not only read and install local policies for a set of TCP/IP stacks, but can also load policies on demand for policy clients. This will allow all policies for a set of systems to be administered on a single system. Policy Agent will also be able to be configured to act as a policy client. In this role it can connect to the policy server and retrieve remote policies that are then installed in the local TCP/IP stacks. The choice of local or remote policies may be made for each policy type (AT-TLS, IDS, IPSec, QoS) and for each TCP/IP stack.

- In z/OS V1.9, RRS is planned to create a batch interface that has commands and parameters to gather the same information that the online interface provides. This will allow you to collect RRS information when needed and use this information for problem determination if any failure should occur later.

- IBM plans to reduce the amount of storage that DFSMShsm™ uses below 16 MB in an effort to address storage-related abends (878, 80A, and so on). IBM also plans to add additional fields to the DFSMShsm function statistics records (FSRs) to improve the data available for statistical analysis of the DFSMShsm environment.

- DFSMSdfp™ OAM (Object Access Method) introduces two new sublevels into the tape level of the OAM storage hierarchy. This effectively expands OAM's storage hierarchy into four levels: disk, optical, tape sublevel 1 (TSL1), and tape sublevel 2 (TSL2). In addition to enabling the ability to write and read object data directly to and from a given sublevel, this

support provides the ability to transition object data within the tape family (for example: from VTS to native tape) during an OSMC storage group cycle. Prior to this support, data movement within the tape family could only be accomplished manually via the MOVEVOL or RECYCLE commands.

- z/OS V1.9 plans to enhance Access Method Services to allow data set name masking on delete requests.

Related information

Daylight saving time: A provision of the U.S. Energy Policy Act of 2005 extends Daylight Saving Time (DST) by four weeks, beginning in 2007. This law moved up the beginning of Daylight Saving Time, to the second Sunday in March from the first Sunday in April. The return to Standard Time will be delayed a week, from the last Sunday in October to the first Sunday in November. In 2007, DST will begin on March 11 and end on November 4. Besides the United States, Canada, Bermuda and the Bahamas have also decided to adopt the same DST rule changes.

IBM has released updates to the z/OS operating system to support this change. APARs PK24076 and OA18692 provide the necessary changes to support the extended Daylight Saving Time rules for previous releases of the operating system. z/OS V1.9 includes these updates.

In addition, IBM has created a central Web site to provide information about every IBM product and how they may be affected by this DST change. Refer to

   http://www.ibm.com/support/alerts/us/

Compatibility

Coexistence and migration rules should be taken into account in planning future migrations. The z/OS coexistence, migration, and fallback policy aligns with the service policy. IBM intends to continue with the practice of providing service support for each release of z/OS for three years following its general availability (GA) date. In some cases, more than three releases may be coexistence, migration, and fallback supported if IBM, at its sole discretion, chooses to provide service support for greater than three years for a release. However, any z/OS release having three or fewer months of service remaining at the time of GA of a new release will not be coexistence, migration, and fallback supported.

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

The following table shows the releases that are planned to be coexistence-supported with z/OS V1.9.

Coexistence-supported releases

```
Release        Coexistence-supported with release in Column 1

z/OS V1.9      z/OS V1.7, z/OS V1.8, z/OS V1.9
z/OS V1.10     z/OS V1.8, z/OS V1.9, z/OS V1.10
z/OS V1.11     z/OS V1.9, z/OS V1.10, z/OS V1.11

(1) Operating system levels beyond z/OS V1.9 represent
    current intentions of IBM.
```

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

- Single-system configurations

- Individual systems within a multisystem configuration

- Cases where a simultaneous IPL is used to migrate all systems in a multisystem configuration at the same time

It is very important that you order the required z/OS release you need for migration and coexistence while it is still available. z/OS V1.7 was withdrawn from marketing effective October 23, 2006, but is still available via the CustomPac family fee-based offering, SystemPac®. Refer to information under Key dates to find out how long z/OS V1.7 will remain

orderable via SystemPac.

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

  http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/E0Z2B118

For migrations inside the IBM migration and coexistence policy, IBM Global Technology Services (GTS) has fee-based offerings that provide a PTF on demand service for toleration and coexistence maintenance based upon your SMP/E Consolidated Software Inventory (CSI). With these offerings, you specify the release of z/OS, z/OS.e, or other products, or hardware (for example, 2094) 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.

GTS 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 GTS provides for both inside and outside the migration and coexistence policy, contact your local IBM sales specialist.

Key dates

- **December 11, 2006:** The z990 Exploitation Support for z/OS V1.4 and z/OS.e V1.4 Web deliverable became generally available. This Web deliverable replaces the z/OS V1.4 z990 Exploitation Support feature and the z/OS.e V1.4 z990 Coexistence Update feature. To obtain this Web deliverable, visit

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

- **March 31, 2007:** Withdrawal from service of:
  – z/OS V1.4 (5694-A01)
  – z/OS.e V1.4 (5655-G52)
  – z/OS V1.5 (5694-A01)
  – z/OS.e V1.5 (5655-G52)

- **June 25, 2007:** Recommended last date for submitting orders for z/OS V1.7 via the CustomPac family fee-based offering, SystemPac. This date will allow for adequate order processing time.

- **June 30, 2007:** Last date for Web download of the following Web deliverables:
  – z990 Compatibility for Selected Releases (Web deliverable) (compatibility for z/OS.e V1.3, z/OS V1.3 and V1.2, and OS/390® V2.10)
  – SMP/E V3R3 Web deliverable
  – IBM Health Checker for V1R4/R5/R6 of z/OS and z/OS.e Web deliverable

- **July 23, 2007:** Last date for ordering z/OS V1.7 via the CustomPac family fee-based offering, SystemPac.

- **September 30, 2007:** Withdrawal from service of:
  – z/OS V1.6 (5694-A01)
  – z/OS.e V1.6 (5655-G52)

Installation and customization

IBM plans to update the Customized Offerings Driver (5655-M12) in the second quarter of 2007 to contain a subset of z/OS V1.7.

The IBM Migration Checker for z/OS is a new as-is tool available from the z/OS download Web page. It includes several batch programs you can run to help determine whether certain migration actions will be needed to migrate to z/OS V1.8 on the currently running system. This tool will not perform any migration actions on your system. It is intended to be used with the z/OS Migration book to help you create your migration plan.

Though the Migration Checker for z/OS is primarily intended to help with migrations from z/OS V1.7 to z/OS V1.8, some programs are expected to be useful for migrations from z/OS V1.7 and

z/OS V1.8 to z/OS V1.9. Among others, the checks for the TN3270 server running in a separate address space, discontinuing the use of zFS multi-file system aggregates, checking for VSAM data sets with deprecated attributes, and checking the integrity of SMS control data sets should be useful for helping you plan migrations to z/OS V1.9.

For more information go to

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

Fee-based software services offerings

CustomPac enhancements

SystemPac can help simplify HiperSockets software enablement support: SystemPac will provide sample configuration data for HiperSockets in the TCP/IP SAMPPROF member of the CPAC.PARMLIB data set. You can change the values as needed and add them to your TCP/IP profile. This is intended to help save you time when enabling HiperSockets. (Note: Other system and hardware changes are required to enable HiperSockets.)

SystemPac will be enhanced for encryption enablement for z/OS ICSF: After installing and activating your cryptographic hardware feature, to start ICSF for the first time, you can use the new SystemPac ISPF panels, procedures, and JCL to help you manage z/OS ICSF setup and startup. This includes:

- ICSF setup

  - Customize PARMLIB

  - Provide a job to create Cryptographic Key Data Set (CKDS) and Public Key Data Set (PKDS)

  - Create the installation options data set

  - Create the ICSF startup procedure

  - Provide access to the ICSF panels

- ICSF startup

This is intended to be useful for first time users of z/OS ICSF, and is designed to help simplify setup and startup tasks. Additional tasks are required to fully enable encryption.

SystemPac has extended ordering of z/OS V1.7: Support for z/OS V1.4 is planned to end in March 2007. You should be planning to migrate to z/OS V1.7 before this. Recently we have allowed SystemPac to have the previous z/OS release ordered after it was no longer available on ServerPac. We are doing the same for z/OS V1.7.

- June 25, 2007: Recommended last date for submitting z/OS V1.7 orders via SystemPac. This date will allow for adequate order processing time.

- July 23, 2007: Last date for ordering z/OS V1.7 via SystemPac.

RefreshPac will provide enhanced preventive service maintenance options: To be in line with IBM's recommendations for installing preventive service, RefreshPac will be enhanced to provide an additional option, the Recommended Service Update (RSU) only service packages, in addition to the current combination of RSU and PUT levels.

When ordering an RSU only deliverable you will get a collection of PTFs identified with a SOURCEID of RSUyymm, where yy indicates the last two digits of the year and mm indicates the month. Additionally, HIPER and PE-fixing PTFs will be shipped along with a customized installation guide and installation dialog jobs to install the service. The APPLY job supplied will allow you to apply only those PTFs for RSUyymm without the HIPER/PE PTFs.

For more information on the CustomPac offerings, visit

  http://www.ibm.com/services/custompac

ServiceLink enhancements

Customized lists now available in the ASAP, AST, and ETR applications of ServiceLink:
By accessing IBMLink™ and using the Automatic Software Alert Process (ASAP), Automatic
Status Tracking (AST), and Electronic Technical Response (ETR) applications of ServiceLink,
you will now be able to customize your notification lists, your tracking lists, the layout of your
ETR records, and the list of ETR records for your account. You will be able to specify:

- The columns to be displayed in a list

- The order in which the columns are to be displayed (left to right)

- The order in which the columns are to be sorted

- The sequence (ascending or descending) of the sorted columns

Your customized list layout will subsequently be used whenever the list is displayed, either in the
current session or in a later session.

Additionally, ASAP notification e-mails will include a list of the APARs or PTFs for which
notifications have been added to the notification list. For each APAR or PTF listed in your ASAP
notification e-mail, the APAR or PTF number, product number, and product description will be
included. AST notification e-mails will include a list of the APARs or PTFs that have been
updated. For each APAR or PTF listed in your AST notification e-mail, the APAR or PTF number
and reason for the notification will be included. The updated notification lists will help save you
time so that you do not have to go back to the list and look at which product has been updated.

**Service Request and Delivery (SRD) will provide enhanced preventive service
maintenance options:** The Order preventive service option of SRD will be enhanced to provide
Recommended Service Update (RSU) only service packages, in addition to the current
combination of RSU and PUT levels, to help you maintain a more stable and resilient system.

When ordering an RSU only deliverable you will get a collection of PTFs identified with a
SOURCEID of RSUyymm, where yy indicates the last two digits of the year and mm indicates
the month. Additionally, HIPER and PE-fixing PTFs will be shipped along with a customized
installation guide and installation dialog jobs to install the service. The APPLY job supplied will
allow you to apply only those PTFs for RSUyymm without the HIPER/PE PTFs.

Cross-component functional buckets are now available in SRD: You can now acquire
up-to-date customized service recommendation lists (buckets) for selected functions with
ServiceLink. These lists contain cross component functions which do not have a unique
orderable component. Some examples are GRSSTAR (GRS Star mode), HC HECKER (Health
Checker for z/OS), XRCSCA (Extended Remote Copy), ZAAP (zSeries Application Assist
Processor), and ZIIP (z9 Integrated Information Processor).

You can order the list of orderable buckets by accessing "Order toleration/coexistence
maintenance based on CSI profile" in the SRD application. The list of orderable buckets will keep
changing, so be sure to check on them frequently.

SIS, AST, ETR, and SRD are included in the service offerings, SoftwareXcel Enterprise Edition
for zSeries, SoftwareXcel Basic Edition, and Resolve. ASAP is included in SoftwareXcel
Enterprise Edition for zSeries and Alert.

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

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

- z/OS Internet Library

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

- z/OS Basic Skills Information Center

  http://publib.boulder.ibm.com/infocenter/zoslnctr/v1r7/index.jsp

- Descriptions of courses worldwide

  http://www.ibm.com/services/learning

- z/OS downloads

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

- CustomPac

  http://www.ibm.com/services/custompac

- ShopzSeries

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

- z/OS Communications Server

  http://www.ibm.com/software/network/commserver/zos/

- IBM Open Class® Library Transition Guide

  http://www.ibm.com/support/docview.wss?rs=431&context=SSTLTF&uid=swg27001511

Reference information

- Software Announcement 206-190, dated August 8, 2006 (IBM z/OS V1.8 — Extending the enterprise-wide role)

- Software Announcement 206-191, dated August 8, 2006 (IBM z/OS.e V1.8 — Affordability for mainframe enterprise and Web-based applications)

- Software Announcement 207-008, dated January 16, 2007 (Encryption Facility for z/OS, V1.2 (5655-P97) — Encryption Facility for z/OS, V1.2 offers more flexibility for security-rich exchange of data with business partners)

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