IBM Systems & Technology Group

What's New in z/OS V2.1

City by the Bay Edition
Session 12728

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IBM zEnterprise EC12 (zEC12) System Functions and Features

Five hardware models
5.5 GHz processor chips
Up to 100-way on z/OS.12 and higher
Doubled HSA – 32 GB
Improved processor cache design
Improvements to pre-fetch instructions
Up to 3TB real memory (1TB per LPAR)
Improved availability with Redundant Array of Independent Memory **(**RAIM)
Industry standard Peripheral Component Interconnect Express Generation 2 (PCIe Gen2) I/O drawer
Flash Express (Storage Class Memory)
1 MB Pageable Large Pages
Dynamic reconfiguration support for Flash Express[1]
2 GB Large Page Support[1]
Optional PLPA, COMMON page data sets[1]
Crypto Express4S cryptographic coprocessors and accelerators
New support for PKCS #11 Hardware Security Module (HSM)
DUKPT for MAC and Data Encryption

(z/OS support in blue)

z/OS Software Support for new IBM zEnterprise EC12 (zEC12) server Tuesday, 4:30

New and enhanced instructions
IBM zAware
OSA-Express4S (GbE LX and SX, 1000BASE-T, 10 GbE LR and SR)
FICON Express8S
Parallel Sysplex® InfiniBand® (PSIFB) Coupling Links
High Performance FICON
CPU Measurement Facility
CFCC Level 18 enhancements
Java™ exploitation of transactional memory
Exploitation of new hardware instructions – XL C/C++ ARCH(10) and TUNE(10)
Common Criteria Evaluation Assurance Level 5+ (EAL5+) certification
IBM zEnterprise® BladeCenter ® Extension (zBX) Model 003 support of general purpose blade servers and optimizers
zBX-003 with IBM WebSphere® DataPower® Integration Appliance XI50 for zEnterprise (DataPower XI50z)
zBX-003 with select IBM BladeCenter PS701 Express blades, or IBM BladeCenter HX5 (7873) blades

[1] - Planned target 1Q2013*

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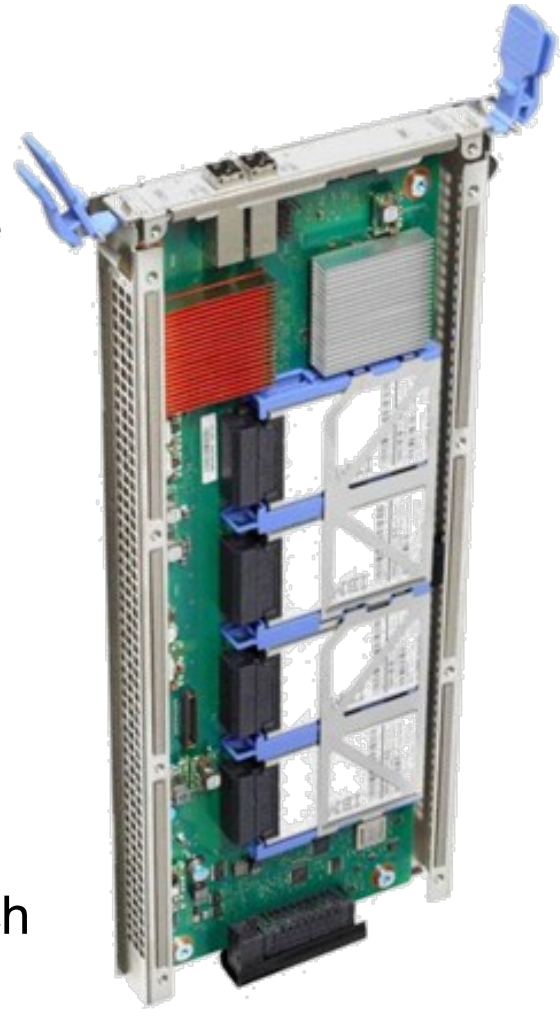
Flash Express Support

- Planned for z/OS V1.13 with…
  - A zEC12 server with Flash Express
  - z/OS V1R13 RSM Enablement Offering web deliverable
    - http://www.ibm.com/systems/z/os/zos/downloads/
  - Dynamic Reconfiguration and optional PLPA/COMMON page data sets in enabling PTFs planned for 1Q2013*
  - …all planned to be part of z/OS V2.1 in 2H2013*
- z/OS designed to use Flash for:
  - Pageable large pages
  - Paging, when performance would be improved vs. disk-based paging
  - SVC and Standalone Dump
  - Speculative page-ins to help buffer workload spikes (such as market open)



zFlash Introduction, Uses and Benefits
Tuesday, 1:30

zFlash Setup, Management and Configuration
Tuesday, 3:00

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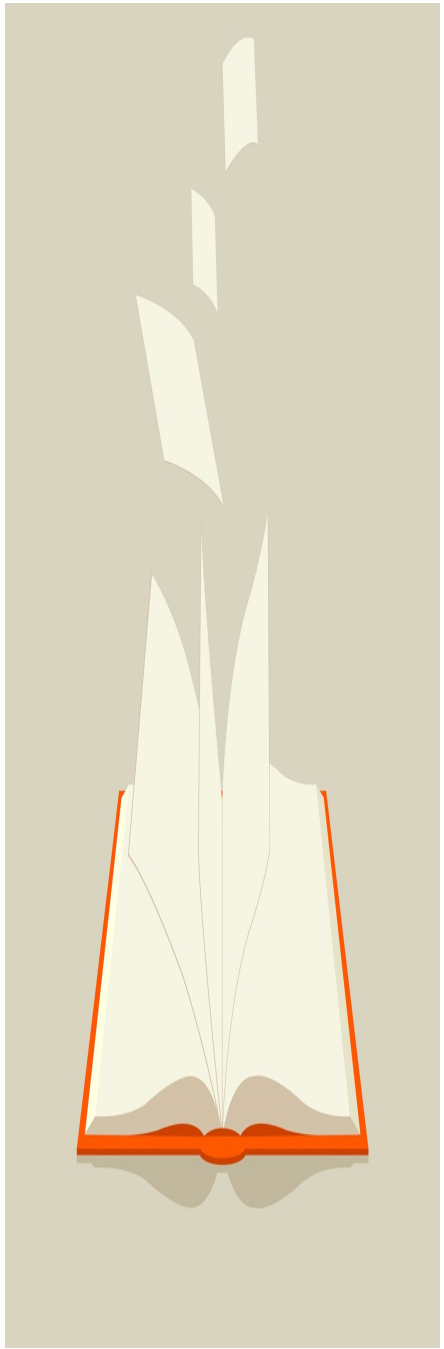
Large (1MB) Page Support

- **Introduced in z/OS R10, PTF for z/OS R9**
  - Requires a IBM System z10® or later server
  - Implementation on z/OS R10-R12 fixes all large pages
  - z/OS V1R13 RSM Enablement Offering web deliverable supports pageable large pages on zEC12 servers
  - Note: Minimum real memory for pageable large pages is 4 GB
- **Current exploiters of fixed large pages:**
  - Java 6 SR1 and later, and its exploiters
    - Including WebSphere Application Server
  - z/OS R11 and later XL C/C++ programs using Language Environment®
  - The z/OS operating system, in z/OS R12 and up
  - IBM DB2® 10 for z/OS (5605-DB2)
- **Exploiters for *pageable* large pages:**
  - A maintenance roll-up of IBM 31-bit and 64-bit SDK7 for z/OS Java Technology Edition, Version 7 (5655-W43 and 5655-W44)
  - DB2 (planned*)
  - IMS™ Common Queue Server (planned for YE2013*)



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IBM zEnterprise EC12 (zEC12) System Functions and Features

- 2GB fixed page frames
  - 1 MB pages are good…
  - …sometimes 2 GB pages are better, for the same reasons
  - Plans to exploit in DB2 buffer pools, and in Java*
  - Available for other large structures, other users
  - Support planned for 1Q2013 with the RSM enablement web deliverable on R13, and enabling PTFs *
- 100-way support for a single image on zEC12 servers
  - Support for processors 0-99
- CF “writearound” support
  - New z/OS function to allow batched updates to be written directly to disk without being cached in the CF
- New channel load balancing algorithm
  - zEC12 balancing based on CMR time

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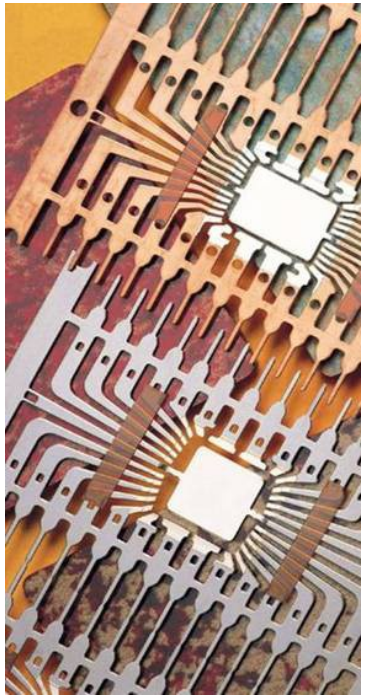
zEC12 Architecture Extensions



- **Transactional Execution (a/k/a Transactional Memory)**
  - Software-defined sequence treated by hardware as atomic "transaction"
    - TBEGIN
    - Change memory location A
    - Change memory location B
    - …
    - Change memory location *n*
    - TEND

    "All or nothing"

    No need for a lock
  - Enables significantly more efficient software
    - Highly-parallelized applications
    - Speculative code generation
    - Lock elision
  - Immediate exploitation by Java and initial development/test support for C/C++ in z/OS R13
    - IBM 31-bit and 64-bit SDK7 for z/OS Java Technology Edition, Version 7 (5655-W43 and 5655-W44) with maintenance
  - Full C/C++ and z/OS support in V2.1; plans for DB2, others*
- **Software directives to improve hardware performance**
  - Data usage intent improves cache management
  - Branch pre-load improves branch prediction effectiveness
  - Block prefetch moves data closer to processor earlier, reducing access latency
- **Decimal format conversions**
  - Enable broader exploitation of Decimal Floating Point facility by COBOL programs

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z/OS V2.1*

Designs for a smarter planet with designs planned for:*

Improving Usability and Skills

New z/OSMF Workflow & Software Management, CPM improvements; HCD/HCM HMC-wide Activate; Health Checking, zDAC improvements, Generic Tracker, Delete member name masking, D PPT,…

Integrating new Applications and Supporting Industry and Open Standards

More Batch Modernization; ASCII support in more z/OS UNIX System Services shell commands and utilities; IXCNOTE; More mutexes and shared condition variables in z/OS UNIX; Generalized Alignment Support in the Binder, Font element, TSO/E REXX™, Nested PIPI, Heap check zones, IEBCOPY enhancements …

Scalability & Performance

100-way SMP, 2 GB page, pageable 1 MB pages, transactional memory support on zEC12; RLS for Catalogs, zFS V5, Serial CF structure rebuild, EXCP support for zHPF, 8-character Job classes, PDSE V2, CFLEVEL 18, Parallel recall for batch …

Enhancing Security

LPAP access to crypto, ICSF & RRSF enhancements, SAF job class control, Certificate enhancements, z/OS UNIX timeouts; System SSL support for TLS 1.2 and NSA Suite B, …

Improving Availability

JES3 dynamic spool volume removal, Dynamic System Symbol updates, Flash Express support, RRS improvements, FORCE TCB, DCCF support for WTOR Auto-Reply, HMC 3270 console support, …

Self Managing Capabilities

DFSMShsm™ Storage Tiers, Better JES3 support for SMS-managed tape, SMS Management Class support for tape, zBX SMF performance records, DCM support for cascaded switches, z/OS UNIX Automount improvements, …

Extending the Network

Enhanced Fastpath sockets, SACK support, new FTP security exits, TCP Profile syntax check, Intrusion Detection improvements, DVIPA affinity, …

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z/OS Support Summary*

Out of service

Lifecycle Extension withdrawal 2 or 3 years later

Service Withdrawal Dates

z/OS	z800/ z900	z890/ z990	z9® EC z9 BC	z10 EC™ z10 BC	z196 z114	zBX	zEC12	DS8000® DS6000®	TS1140 TS7700	End of Service	Coexists with z/OS...	Planned Ship Date[2]
R10	x	x	x	x	x	x	x[3]	x		9/11[1]	R12	
R11	x	x	x	x	x	x	x	x	x	9/12[2]	R13	
R12	x	x	x	x	x	x	x	x	x	9/14[2]	V2R1[2]	
R13	x	x	x	x	x	x	x	x	x	9/16[2]	V2R2[2]	
V2R1[2]			x	x	x	x	x	x	x	2H18[2]	V2R3[2]	2H13[2]
V2R2[2]										2H20[2]	V2R4[2]	2H15[2]

Migrating to z/OS 1.13:
Parts 1 & 2
Thursday 8:00 & 9:30

1. Fee-based service extension available
2. All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
3. Fee-based service extension required for support, or for some features

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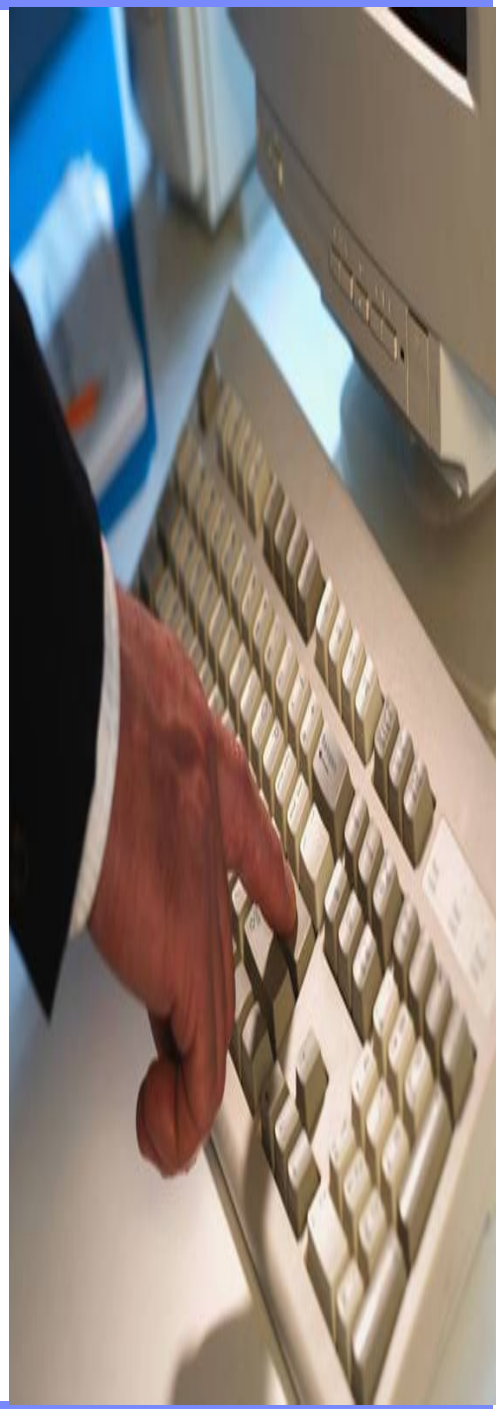
Improving Usability and Skills*

z/OSMF Outlook*

- New z/OSMF release planned for later this year…
- *And,* can you spell “SPEs”?
- New functions are available now, designed to provide:
  - More actions for software instances in Software Management (APAR PM73833)
  - Linking between Workload Manager and Resource monitoring (APARs PM74508 and PM74517)
  - Capacity Provisioning support for creating, editing, & activating configurations and policies (APAR PM74519)
  - Usability enhancements for Incident log and Classic ISPF (APARs PM74518 and PM74507)
  - Enhanced RESTful interface for submitting z/OS® jobs from data sets and z/OS UNIX® files; support for additional browsers; and, enhanced filtering for table displays (APAR PM74502)

z/OSMF Software Deployment
Hands-on Lab
Friday, 8:00



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Improving Usability and Skills*

• Planned z/OSMF improvements

- z/OSMF to use WAS with the Liberty profile
  - Designed to simplify z/OSMF setup & cut memory footprint
  - Expected to start more quickly and use less CPU
- New configuration workflow application
  - Workflow definition metadata files define task lists to achieve a configuration goal:
    - Can be used to drive creation of JCL
    - REXX execs and shell scripts supported within generated batch jobs
  - UI designed to present tasks to appropriate people via a new "Notifications" function in order; for example, to:
    - System programmers
    - Security administrators
    - Storage administrators
  - Wizard-like task sequencing, with tasks presented to additional people as dependencies are met
  - First exploiter: z/OSMF itself!

z/OSMF What is it? And why would I want it?
Tuesday, 9:30

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Improving Usability and Skills*

• Planned z/OSMF improvements

- New Software Management application function to show you:
  - A list of SMP/E-installed software
  - Vendor product number, version, release, and modification level based on data from SMP/E entries
  - End of service dates for products based on vendor-supplied files
  - Where software instances are installed
  - Where PTFs are installed (and not installed)
  - Whether structures are consistent between SMP/E, data sets, and catalogs
  - …and, drive key SMP/E reporting functions
  - *Available now for z/OSMF V1.13 on z/OS V1.13 with the PTF for APAR PM73833*
- Capacity Provisioning application improvements
  - Create and edit domain configurations and policies
  - IFL & SAP reporting support in addition to CP, zAAP, zIIP support
  - Install domain configurations and policies
  - *Available now for z/OSMF V1.13 on z/OS V1.13 with the PTF for APAR PM74519*

z/OSMF Software Management Hands-on Lab
Friday, 8:00

New z/OSMF Software Management Capabilities
Thursday, 8:00

Manage your Workloads and Performance with z/OSMF
Thursday, 9:30

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Improving Usability and Skills*

- zDAC improvements designed to support:
  - Point-to-point discovery
    - zDAC now discovers switch-attached controllers
    - z/OS V2.1 zDAC also designed to discover directly-attached controllers and support mixed controller attachment (via switch and point-to-point)
    - Expected to make zDAC more useful for smaller configurations without switches
  - Dynamic Channel Path Management (DCM) for FICON channels
  - Better processing of device number and unit address constrained configurations
  - Capability to specify switch and CHPID maps to guide path selection
  - Improved discovery performance
  - Reminder: zDAC requires a zEnterprise server

zDAC - I/O Discovery and Auto Configuration via HCD
Thursday, 9:30

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Improving Usability and Skills*

- HMC complex-wide IODF Activate
  - For all z/OS and z/VM LPARs managed in the same HMC complex
    - Same CEC, different CEC
    - Same Sysplex, different Sysplex
    - On IBM System z9® and later servers
    - For z/OS V1.12 (5694-A01), z/VM V5.4 (5741-A05), and later when initiated from a system running z/OS V2.1
  - Initiate from HCD or HCM
  - Eliminate the need to activate I/O configuration changes one LPAR at a time
- Catalog parmlib member enhancements
  - IGGCATxx parmlib member introduced in z/OS V1.13 supported most things you can specify on MODIFY CATALOG command keywords
  - In z/OS V2.1, support planned to be extended to support remaining F CATALOG keywords…
  - …and for some SYSCATxx and LOADxx parameters
  - (We still need some data for early IPL processing to open parmlib!)

What's New with DFSMS™ ICF Catalog and IDCAMS Thursday, 3:00

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Improving Usability and Skills*

- Multiple SMP/E logical screens in ISPF
  - z/OS V2.1 SMP/E designed to allow multiple logical screens
  - One logical screen planned to be allowed per SMP/E zone

Top 39er!

- "TSO/E LOGON" failure messages
  - z/OS V2.1 Allocation is designed to issue messages to the terminal
  - Intended to make it easier to diagnose data set allocation failures like:
    - IKJ56455I EELLS LOGON IN PROGRESS AT 11:01:36 ON APRIL 30, 2012
    - IEFA107I EELLS ISPFPROC SDBISPF0 DD01 - DATA SET EELLS.NO.SUCH.DATA.SET NOT FOUND
    - IKJ56457I LOGON FAILED ALLOCATION UNSUCCESSFUL
    - IKJ56470I EELLS LOGGED OFF TSO AT 11:01:36 ON APRIL 30, 2012
    - IKJ56400A ENTER LOGON OR LOGOFF-

Top 39er†!

- Generic Tracker
  - Goodbye, CNZTRKR; hello, generic tracker
  - Call a simple interface (like CNZTRKR, but different) to help customers determine whether functions are in use
  - API planned so you can call it from within a health check (for example)
  - CNZTRKR calls will be automatically rerouted to new tracker
  - Operator command planned to provide tracking information

† Partial?

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Improving Usability and Skills*

- GDGs in chronological order!
  - New GDGORDER JCL DD statement keyword to specify that you get the generation datasets oldest generation first to newest or the reverse
  - No need to sort or concatenate!
  - System default remains newest-to-oldest
- ISPF potpourri (a partial list of planned enhancements):
  - Edit support for Unicode data
  - Edit support for an expandable command field
  - Edit HILITE command to highlight the invalid lowercase JCL characters
  - Edit support for regular expressions in FIND and CHANGE commands
  - Support for dynamically allocated data sets using XTIOTs for EDIT, BROWSE, LMINIT, and LIBDEF
  - Improved enhanced member list function
  - ISPF directory list display for z/OS UNIX, UDLIST, DIRLIST planned to support a SRCHFOR function
  - Support for multiple logical screens on ISPF entry, and multi-screen exit when ending ISPF
  - Path name mask support in the z/OS UNIX Directory List Utility
  - Support in OPT3.4 for a “free” line command for multivolume data sets
  - Support in UDLIST lower-case path names

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Improving Usability and Skills*

- Catalog alias processing improvements planned:
  - Data set (NONVSAM) aliases in the master catalog that specify a different high-level qualifier for a data set will be searched for in the catalog "owning" the high-level qualifier
  - Creation dates to be stored in alias entries and listed by IDCAMS
  - Catalog connector alias entries to be kept when you temporarily delete a user catalog
- SHAREOPTIONS correction for ACDS, COMMDS
  - In z/OS V1.13, health check for incorrect SHAREOPTIONS
  - In z/OS V2.1 the system is designed to correct them automatically

DFSMS Latest and Greatest
Monday, 3:00

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Improving Usability and Skills*

- Automatic start for Health Checker address space
  - Health Checker to start at IPL time
  - Parmlib support in a new HZSPRMxx member
- More Health Checks
  - VLF cache object age
  - RACF® check for database AIM Level 3
  - RACF check for whether users without OMVS segments will have them automatically assigned
  - RACF check for impending certificate expiration
  - Improved (not new) RACF sensitive resource checking
  - Open/Close/EOV check for whether XTIOT is enabled
  - Checks for branch tracing enabled, mode tracing, and long-running PER SLIPs that can cause high system overheads
  - GRSRNLxx entries that can cause Catalog deadlocks

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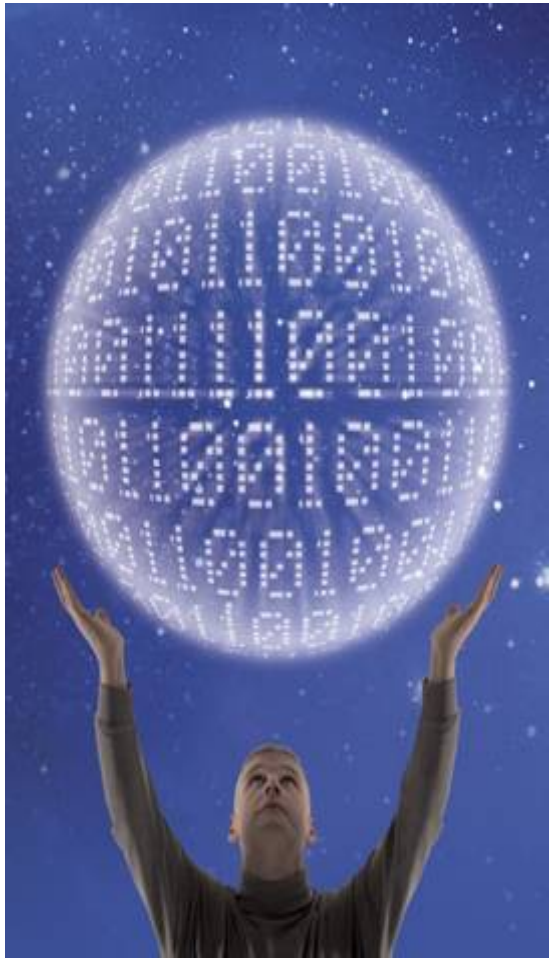
Scalability and Performance*

- RLS for Catalogs
  - R12 increased maximum catalog size and implemented CA Reclaim
  - R13 increased the number of aliases per user catalog
  - V2.1 designed to support record-level sharing for user and volume catalogs:
    - - Expected to remove most size- and performance-related reasons for splitting user catalogs in a Parallel Sysplex
    - - Most catalog contention likely to evaporate
    - - Master catalog not RLS-eligible
      - - But it's typically entirely cached in CAS if set up as recommended
    - - IDCAMS DEFINE USERCATALOG and ALTER USERCATALOG support for enabling/disabling RLS
  - Remaining reasons to split a catalog are availability-related:
    - "Too many eggs in one basket"
    - Availability (expected recovery time for this catalog exceeds the RTO)



Unclog Your Systems with z/OS 2.1 - something new and exciting in Catalog Parts I & 2 Wednesday, 8:00 & 9:30

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Scalability and Performance*

- System Logger separation of CF-based and DASD-only logs
  - In z/OS R9 processing could be separated into different tasks for test and production log streams
  - In z/OS V2.1, Logger will be designed to support separation of CF-based and DASD-only log stream processing as well
  - Intended to support higher rates of log stream offload data set allocations, reduce primary storage full conditions, and support higher overall concurrent log stream offload rates
  - Also available for z/OS V1.13 with the PTF for APAR OA38613
- EXCP support for zHPF
  - In addition to:
    - Media Manager (including VSAM, z/OS R11)
    - QSAM, BSAM, BPAM (z/OS R13)
    - EXCPVR (z/OS R13)

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Scalability and Performance*

- CF “writearound” support
  - New z/OS function to allow batched updates to be written directly to disk without being cached in the CF
  - Designed to keep cached online transaction data more current
  - Expected to help improve performance during batch updates
  - Requires:
    - IBM zEC12 server with CFLEVEL 18…
    - **…or** IBM zEnterprise 196 (z196) server with CFLEVEL 17 and an MCL
    - z/OS R12 or z/OS R13
    - IBM DB2 10 for z/OS (5605-DB2) with the PTF for APAR OA37550

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Scalability and Performance*

- CF structure rebuild performance
  - Currently, all CF structures are rebuilt in parallel
  - Considerable contention can result, slowing the process overall and (especially) slowing the process for the most important structures
  - New design to process structures serially, more or less
  - Intent is much faster recovery for critical structures and faster overall rebuild time
  - System structures to be prioritized by the system
  - Other structures optionally prioritized by policy

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Scalability and Performance*

- PDSE Version 2
  - Designed to improve read performance, reduce storage consumption
  - New PDSE member size limit planned over 125 times larger in most cases, and substantially larger than the maximum size of a PDS member
  - Intended to make it possible provide additional scalability and usability benefits of using PDSEs in place of PDSs and make it feasible to use PDSEs instead of multiple large sequential data sets
- GDG Support for PDSEs
  - In addition to sequential, direct, and PDS GDGs
- BCPii GetBulk Support
  - Get multiple attribute queries in one go
  - Reduce the time required for such queries significantly
  - Support planned for multiple attribute requests for CPC, image, capacity record, activation profile, and image user groups
  - Supported for IBM System z9 and later servers
  - Expected to yield performance benefits most noticeable for interactive system management applications

BCPii Programming Beyond the Basics for the z/OS System Programmer
Tuesday, February 5, 2013: 11:00

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Scalability and Performance*

zFS Scaling

- **New zFS Version 5 format, designed to:**
  - Significantly improve performance for file systems with large directories by using a tree structure
  - Remove explicit limits on the number of names that can be stored in zFS directories, including the prior 65,535 subdirectory limit
  - Increase the maximum file system size from 4 TB to 16 TB
  - Support both zFS V4 and V5 directories in the same physical file system data set
  - Intended to allow you to migrate HFS file systems that contain directories with a large number of files to zFS with good performance
- **Conversion options planned include:**
  - New option on IOEAGFMT to convert existing file systems
  - New IOEFSPRM parmlib parameter, CONVERTTOV5 ON|OFF, to convert directories on first access
  - New shell command operand to convert directories, zfsadm convert
  - Conversions designed to “fail safe,” leaving a usable file system if the conversion does not succeed

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Scalability and Performance*

- z/OS V2.1 JES2 and SDSF designed to support more spin data sets:
  - Support for over 4 billion spin data sets (up to 4,294,967,296)
    - Up from 9,999,999
  - Intended to help improve availability for long-running address spaces
  - Available on z/OS V1.12 and z/OS V1.13 with the PTFs for APARs OA38944 and PM59496
- 64-bit NFS server, designed to support:
  - Larger sequential data sets, PDS/PDSE members
  - Processing files as large as 4 TB, up from 800 MB
  - Improved application performance for random access
- RLS enhancements
  - Directory-Only Caching, allowing you to optionally bypass CF caching
  - A number of RLS control blocks move from SMSVSAM data space to 64-bit storage
  - IDCAMS PRINT, REPRO, IMPORT, and EXPORT to access data sets in RLS mode

z/OS JES2 Product Update and Latest Status Tuesday, 4:30

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Scalability and Performance*

- DFSMShsm Fast Replication Enhancements
  - Consistency Group Support
    - Designed to allow you to create consistent backups of DB2 log copy pools and recover them without performing conditional DB2 restarts
  - Also:
    - Recover Data Sets to any volume
    - Recover Data Sets with a New Name
- DFSMShsm designed to improve disk and tape performance
  - Increased multitasking level with a new SETSYS command
  - Expected to be greatest when moving numerous small data sets
  - Intended to reduce elapsed migration time required
- DFSMShsm planned to increase volume limit
  - From 40 to 254 tape volumes per data set
  - Intended to allow you to migrate & back up larger data sets

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Improving Availability*

z/OS JES3 Product Update and Review of Newer Features Monday, 1:30

- JES3 dynamic spool volume removal
  - Identify jobs using a spool volume
  - Dump those using the spool volume you want to remove
  - Remove the spool volume without a JES3 complex-wide restart using hot start or *MODIFY,CONFIG
  - Complements dynamic spool addition support in z/OS V1.13
  - Removes the need to perform a JES3 complex-wide IPL to remove a spool volume

Top 39er!

- Dynamic System Symbol updates
  - Single system only
  - Not fully compatible with IEASYMUP or SYMUPDTE
  - New SETLOAD IEASYM keyword
  - New ENF73 signal on symbol update via SETLOAD IEASYM

- z/OS Console support for HMC 3270 console planned
  - For z/OS console, during and after IPL
  - Intended to add another backup console
  - Designed to allow small z/OS LPARs to run without OSA-ICC

Top 39er!

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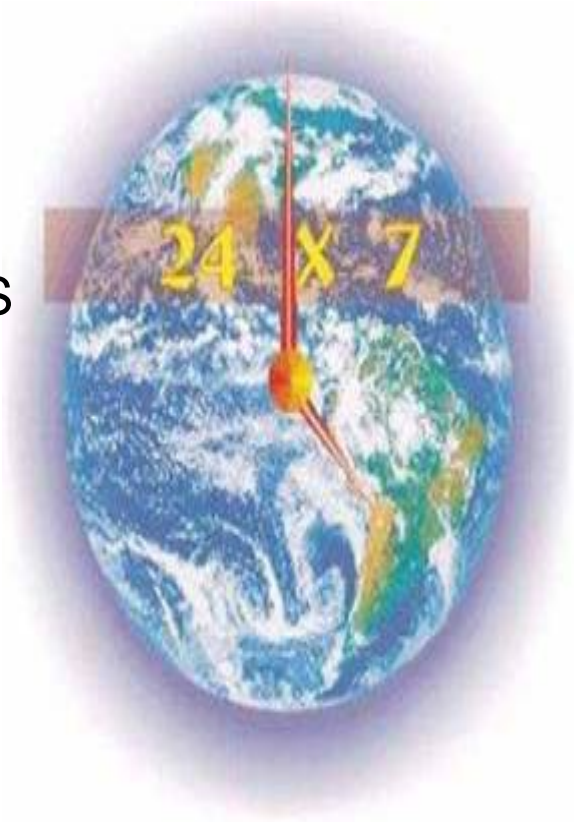
Improving Availability*

- New operand on FORCE to terminate a task
  - FORCE jobname,TCB=address
  - New ASCBNOFT bit to exempt all tasks in an address space from force
  - New MVS.FORCETCB.* SAF profiles in OPERCMDS class
  - Replace CALLRTM usermod from Level 2
- DCCF support for WTOR Auto-Reply
  - Support for branch-entered WTORs
  - Intended to help prevent synchronous WTORs from causing SFM to partition out systems with outstanding replies
- RRS internal restart
  - New optional internal RRS restart designed to quiesce RRS processing, clean up logs, and resume processing, without taking RRS down



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Improving Availability*

- DFSORT™ Scaling improvements planned
  - Blockset sorting support for programs running in 64-bit addressing mode
    - Intended to help relieve storage constraints
  - Improved memory management
    - Better balance the memory requirements of multiple large concurrent sorts
    - New TUNE option to specify storage be obtained incrementally
  - Support for larger memory object work space, 64 GB to 1 TB
    - Allows you to sort more data in memory object work file

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Improving Availability*

- New MODIFY VLF Command planned
  - Designed to allow you to a specify COFVLFxx member
  - Update VLF classes & associated major names
  - Change MaxVirt and AlertAge for existing classes
  - Designed to help avoid performance impacts by avoiding VLF restart

Top 39er!

- Add/remove MCS consoles dynamically
  - Support planned for adding/removing distributed mode MCS consoles
  - SET CON designed to process a CONSOLxx member to add consoles
  - SETCON designed to allow you to specify a console to be removed
  - Intended to help improve availability by removing another reason for system and sysplex-wide IPLs

Top 39er!

- RPCBIND/NFS re-registration
  - RPCBIND and NFS Servers designed to allow the NFS Server to re-register with RPCBIND when RPCBIND is restarted
  - Designed to help preserve existing connections
  - Designed to allow new mounts when RPCBIND is restarted
  - Intended to let you avoid an NFS Server restart to improve availability

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Self-Managing Capabilities*

- DFSMShsm Storage Tiers
  - Policy-based movement of SMS-managed data within L0
  - Intended to existing storage class and storage group constructs
  - Apply management class policies based on age and last reference to move the data from one class of device to another
    - For example, IBM System Storage® DS8700 and DS8800 SSD, HDD, SATA, or a mix
    - Can include Easy Tier devices
  - ML1 and ML2 planned to work as they do now
  - Intended to help you manage data residency to meet business goals and data management policies

A New Frontier in the Evolution of Space Management...Blast Off!
Thursday, 8:00

IBM System Storage

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Self-Managing Capabilities*

- OAM Improvements designed to improve tape-related functions:
  - Supporting larger block sizes for tape for better performance
  - Allow you to remove unneeded backup copies automatically
  - Enable OSREQ Store Sequence support on smaller object sizes
  - Enhance OAM interoperation with products such as IBM Tivoli® Automated Tape Allocation Manager for z/OS (ATAM, 5698-B15)
  - Enable you to tune tape library operations with a new SETTLIB option in CBROAMxx PARMLIB member
- Improved JES3 support for SMS-managed tape libraries
  - Better support the use of MDS for SMS-managed tape
  - New JES3_ALLOC_ASSIST=YES|NO parameter in DEVSUPxx
  - Inish deck changes for this support to define new esoteric names for clusters

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Self-Managing Capabilities*

- Improved DFSMSrmm™ support for SMS-managed tape
  - DFSMSrmm designed to support tape data set retention periods using SMS Management Classes
  - Intended to set resulting expiration dates automatically, and support expiration of tape data sets after a specified period of inactivity
  - Extend EXPDT-based retention management to allow it to be based on volume sets or first files
- FICON® Dynamic Channel path Management support for cascaded switches
  - Existing FICON DCM is extended to support cascaded switches
    - Attaching a controller to a switch through another switch to a channel
  - Support planned for FICON limit of 2-level cascading for DCM
    - (Channel, two switches, control unit)

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Self-Managing Capabilities*

- CPM support for defined capacity and group capacity limit
  - Designed to increase options for automated response to capacity shortages
- RMF to provide SMF 104 Records for zBX Activity
  - Basic performance metrics for:
    - Linux® on IBM System z®
    - Linux on IBM System x® running on zBX blades
    - AIX® running on zBX blades
    - Microsoft® Windows® 2008 Server running on zBX blades (new!)
  - Help support performance management, capacity planning activity across the Hybrid
- New DISPLAY PPT command, designed to:
  - Display the currently-effective program properties table, the net from:
  - The IBM default in CSECT IEFSDPPT…
  - …as modified by SCHEDxx during IPL…
  - …and perhaps further modified by T SCH commands

Top 39er!

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Self-Managing Capabilities*

- STP maximum time variance check
  - z/OS V2.1 Timer Services designed to issue a message when using STP when unacceptable variance is detected between UTC and TOD clock
  - Intended to help U.S. stock exchange members meet SEC rules for record timestamps for the Order Audit Trail System (OATS)
- System Logger threshold messages
  - For primary storage use
  - Intended to help you avoid storage full conditions that can lead to performance degradation and outages
- SMF BUFSIZMAX for log streams
  - Designed to let you specify SMF log stream buffer sizes with a new DSPSIZMAX parameter in SMFPRMxx
    - Support for DSPSIZMAX to be used when SMF is initialized also available for z/OS V1.12 and V1.13 with the PTF for APAR OA35175
  - z/OS V2.1 planned to support dynamic changes via SET SMF and SETSMF

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Self-Managing Capabilities*

- z/OS UNIX Automount Improvements
  - Allow you to specify permission bits other than the defaults for file systems created automatically using an automount policy
  - Extend the use of static system symbols to the master file (/etc/auto.master)
    - Currently supported for MapName files only
  - Serialize automount appends across systems
  - Set owning system to a file system parent when appropriate to avoid unmount failures during OMVS shutdown
- VSAM DATACLAS additions designed to let you specify:
  - System-Managed Buffering (SMB) record access bias
  - ACB RMODE31 override
- New ACS variable for EAS eligibility
  - Intended to allow you to code ACS routines to route allocations appropriately

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Enhancing Security

- ICSF Enhancements
  - Support for Derived Unique Key Per Transaction (DUKPT) for message authentication code (MAC) and data encryption keys
    - Intended to be compliant with the ANSI X9.24 part 1 Retail Financial Services Key Management standard
    - Intended for the symmetric key management used for financial services such as ATM transactions
  - Support for a new Cipher Text Translate CCA function designed to process sensitive data encrypted under one key
  - Enhanced key wrapping to help ensure a key is not wrapped with a weaker key, to help you comply with industry cryptographic standards, including ANSI X9.24 Part 1 and PCI-HSM
    - Requires enhanced CCA firmware in the Crypto Express coprocessor
  - New random number cache intended to improve application performance
  - Support for new mode that configures Crypto Express4S coprocessors in Enterprise PKCS #11 mode
    - RACF planned to support generation of ECC and RSA secure keys using Crypto Express4S
    - Corresponding PKCS #11 secure key support planned for PKI Services
    - System SSL planned to allow certificates with secure PKCS #11 ECC and RSA certificates to be used for some SSL/TLS handshakes and through its Certificate Management APIs
    - Designed to provide the cryptographic services and assurance needed to meet EU requirements for Qualified Digital Signatures
  - ICSF designed to improve I/O performance for the PKDS and PKCS #11 TKDS
  - FIPS 140-2 setup simplification for ICSF

- Available now from: http://www.ibm.com/systems/z/os/zos/downloads/

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Enhancing Security*

- RRSF
  - z/OS V1.13 introduced TCP/IP-based RRSF support for IPv4
  - z/OS V2.1 support planned for IPv6…
  - …and for using elliptic curve cryptography (ECC)-based certificates for establishing the AT-TLS sessions
  - Intended to allow use of stronger encryption algorithms with RRSF
- Certificate processing improvements planned:
  - Health check on impending certificate expiration
  - System SSL validation according to RFC 5280, RFC 3280, or RFC 2459
  - Support for Extended Validation (EV) X.509 digital certificates in PKI Services
  - Improved displays for RACF certificates, certificate chains, and key rings
  - RACF to enhance certificate request processing for certificates issued by external Certificate Authorities to help ensure private keys associated with the fulfilled certificates are not inadvertently deleted.
  - Optional PKI Services message when CRL processing ends

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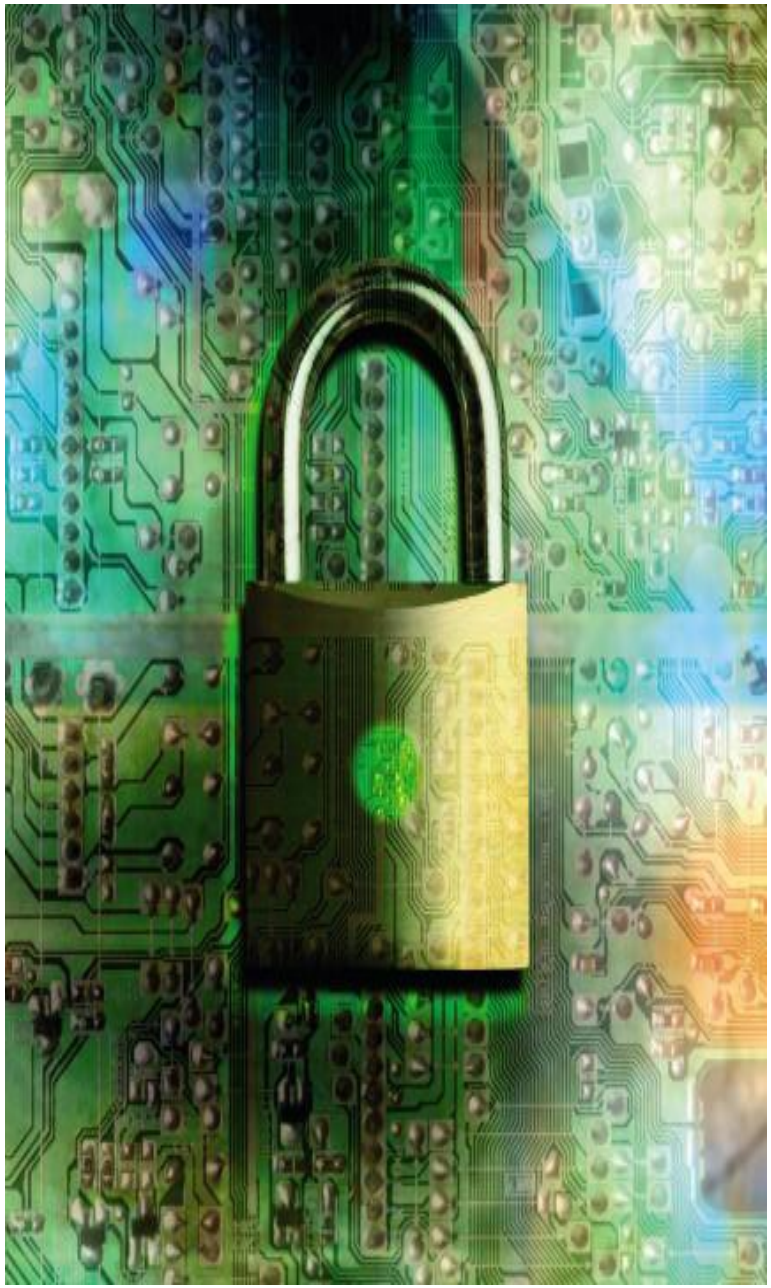
Enhancing Security*

- SAF job class controls
  - Support planned for both JES2 and JES3
  - Intended to allow you to supplant exits with new profiles in the JESJOBS class
- z/OS UNIX timeout support planned:
  - New BPXPRMxx parameter
  - Specify whether users who logged in using rlogin, telnet, ftp, or the TSO OMVS command should be logged off after a period of inactivity
  - Intended to help you improve system security
- RACF Sensitive Resources Health Check
  - Planned to check additional FACILITY class resources for:
    - Active APF list
    - Active link list
    - Active LPA lists
    - Access to system dump data
    - Access to certain z/OS UNIX System Services functions.
  - Intended to help identify potential security exposures



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Enhancing Security*

- System SSL TLS 1.2 Support
  - Support for higher-strength cryptographic ciphers defined in RFCs 5246, 5288, and 5289, including SHA-256 and SHA-384 hashing
  - Support for ciphers using symmetric AES-GCM during TLS handshakes and application payload exchanges
  - Also available on z/OS V1.13 with the PTF for APAR OA39422
- System SSL NSA Suite B compliance
  - Support for Suite B Cryptography based on RFC 5430, an implementation of TLS V1.2
  - Designed to meet the United States government cryptographic algorithm policy for national security applications

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Enhancing Security*

- Remote access to System z Crypto via LDAP
  - Think of this as *Crypto-As-A-Service*
  - Store and manage key material inside the boundaries of the System z Hardware Security Module in the crypto card
  - Enable System z secure key crypto via LDAP extended operations provided by z/OS ITDS
  - Can isolate callers to specified cryptographic domains by label
  - Designed to route crypto operations and data to an LPAR designated to process secure key operations
  - Intend to enhanced ICTX plug-in to provide native SDBM and SASL bind authentication, and 64-bit support

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- IEBCOPY improvements
  - COPYGROUP for PDSs
    - As for PDSE, copy aliases along with specified members automatically
    - PDS/PDS, PDSE/PDS, PDS/PDSE, PDSE/PDSE all to work the same
  - Support for pattern matching **Top 39er!**
    - Using * and % in SELECT statements with COPYGROUP
- Batch Modernization:
  - Job Correlator
    - Unique 64-byte value assigned to each job in a sysplex
    - Intended to:
      - Provide a larger name space for jobs (adjunct to job name)
      - Help link jobs to output and other records
      - Provide a simple way for applications to determine the Job ID of a job that was just submitted
    - Planned to b available with the z/OSMF REST API
  - JES3 support for instream data in procedures
    - DDNAME DD * support in PROCs and INCLUDE groups
    - Similar to support introduced in z/OS V1.13 JES2

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- More Batch Modernization…
  - Dynamic ENQ downgrade support in GRS, and JCL support:
    - In a multistep job, change an exclusive ENQ to shared ENQ for a data set
      - After the last job step with DISP=OLD, MOD, or NEW has ended
    - New JES2 Job Class parameter, DSENQSHR=AUTO|ALLOW|DISALLOW
    - New JOB statement parameter, DSENQSHR=ALLOW, to use with ALLOW

```
//GREAT    JOB (accounting),DSENQSHR=ALLOW
//STEP1    EXEC PGM=WHATEVER
//OLD      DD DSN=MY.DATA.SET,DISP=NEW
//STEP2    EXEC PGM=SOMEPGM
//STILLOLD DD DSN=MY.DATA.SET,DISP=MOD
//STEP3    EXEC PGM=EXPCT806
//SHR4NOW  DD DSN=MY.DATA.SET,DISP=SHR
//STEP4    EXEC PGM=IDUNNO
//OLDAGAIN DD DSN=MY.DATA.SET,DISP=OLD
//STEP5    EXEC PGM=NOCLUE
//SHR4EVER DD DSN=MY.DATA.SET,DISP=SHR
//STEP6    EXEC PGM=WHOKNOWS
//STILLSHR DD DSN=MY.DATA.SET,DISP=SHR
```

Exclusive ENQ until last DISP=OLD, NEW, or MOD step done

Then, shared ENQ

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- Still more Batch Modernization…
  - JES2 symbols support for instream data and Submit
    - New step-level EXPORT statement to list system and JCL symbols available to be resolved
    - New SYMBOLS keyword for DD * and DD DATA to control substitution

Example:

```
//  EXPORT SYMLIST=(DSNAME)
//  SET DSNAME=MY.DATA.SET
// SET VOLSER=VOLUME
//*
//DELETEDS EXEC PGM=IDCAMS,REGION=300K,
//SYSPRINT  DD SYSOUT=*
//DEVICE    DD DSN=&DSNAME,VOLUME=&VOLUME,DISP=OLD

//SYSIN     DD *,SYMBOLS=JCL

  DELETE -
    &DSNAME. -
    NONVSAM  -
    PURGE    -
    SCRATCH  -
    FILE(DEVICE)
/*
```

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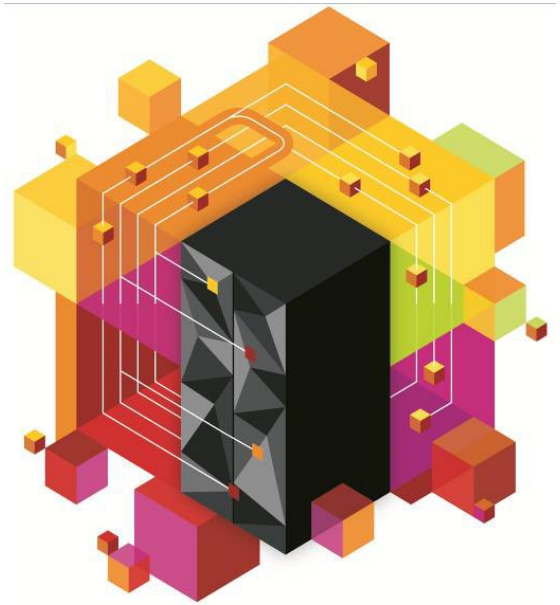
- Batch Modernization, continued…
  - New PARMDD EXEC keyword support longer parameter strings
    - Mutually exclusive with PARM keyword
    - No other changes required for unauthorized programs
    - Authorized programs must be bound using LONGPARM or system will terminate the job at step initiation
    - Supports parameter lists from 1 to 32,760 bytes long

Example:

```
//NOTAREAL JOB (accounting info),MSGLEVEL=(1,1),CLASS=BATCHLOW,
// NOTIFY=&SYSUID
//*
//UNAUTH   EXEC PGM=MYPGM,PARMDD=PARMS
//IN       DD DISP=SHR,DSN=MY.DATA.SET
//OUT      DD DISP=(,CATLOG),DSN=MY.NEW.DATA.SET, …
//PRINT    DD SYSOUT=*
//PARMS    DD *
LONG PARAMETER LIST HERE IN THE DATA SET NAMED BY
PARMDD.  NOTE THAT IT NEED NOT BE AN INSTREAM DATA
SET.  A SEQUENTIAL DATA SET OR A MEMBER OF A PDS OR
PDSE WILL WORK AS WELL.  AND, IF I COUNTED RIGHT,
THEN THIS VERY VERY LONG PARAMETER LIST IS NOW WELL
OVER 100 CHARACTERS IN LENGTH AND I CAN STOP TYPING!
/*
```



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And Still More Batch Modernization:

- Batch Parallel Recall
  - Allocation to determine whether data sets to be allocated have been migrated
  - For DFSMShsm-migrated data sets, Allocation is planned to:
    - Issue recall requests during step initiation
    - Wait for all recalls to complete
    - Continue with Allocation processing needed to start the step
  - New ALLOCxx keyword to enable, and SETALLOC support

- 8-character Job classes
  - JOB statement to support 8-character alphanumeric job classes
  - Expands maximum number of job classes for JES2
    - JES3 will continue to support a maximum of 255 job classes
    - No explicit limit planned for JES2
  - JES3 supports 8-character job classes via JECL (//*MAIN CLASS=xxxxxxxx)
  - JES3 to continue to override CLASS from the JOB statement when CLASS is coded on the //*MAIN statement

//NICE JOB CLASS=PAYROLL, …

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- New SYSTEM and SYSAFF JOB statement keywords
  - Planned to allow you to specify z/OS MVS™ system names, JES2 MAS member names, and JES3 MAIN names
- Delete member name masking
  - New IDCAMS function to delete specified members by pattern
  - Asterisk is a wildcard, per cent sign is positional
  - Examples:
    - DELETE SOME.DATA.SET(EELLS*)
      - …to delete all members starting with “EELLS”
    - DELETE SOME.DATA.SET(EELLS%A)
      - …to delete all members with EELLSxA, where x is any character
- Multivolume RLSE improvements
  - In z/OS V2.1, the system will be designed to release unused space for SMS-managed multivolume data sets:
    - On the current volume
    - On all subsequent volumes
  - Via RLSE in JCL or equivalent DYNALLOC text unit

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- WebSphere Extended Deployment Compute Grid for z/OS, V8.0
  - New framework for single-threaded Java applications
  - z/OS supports for xJCL constructs via keyword/value pairs to allocate files, specify checkpointing
  - Intended to use commit interval management
- Batch Run Time Environment: Java/PLI/COBOL interoperability
  - Similar to Java/COBOL interoperability in R13, planned to provide transactional integrity for DB2 between Java, COBOL, and PLI programs
  - VSAM as an resource manager
  - Provide TVS integrity among Java, COBOL, and PLI programs via RRS
  - Requirements planned to include:
    - IBM 31-bit SDK for z/OS, Java Technology Edition, V6.0.1
    - Enterprise PL/I Version 4 Release 2 (5655-W67)
    - DB2 V9 (5635-DB2) or DB2 10 (5605-DB2) with PTFs

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- z/OS Font Collection
  - New base element
  - Planned to include:
    - AFP Font Collection for S/390 (5648-B33) fonts
    - IBM Infoprint Fonts for z/OS V1.1 (5648-E76)
    - World Type fonts that are part of the InfoPrint Font Collection V3.1 available for other operating system platforms
    - Double-byte Asian fonts
  - Intended to eliminate the need to include font products and features in z/OS orders and assure that fonts are always available on z/OS systems

- Infoprint Server Improvements
  - Replace attributes in the aopd.conf file and AOP variables with information stored in the Printer Inventory
    - Designed to allow you to use Infoprint Server's ISPF application to perform most System Administrator and Printer Administrator tasks
  - Support dynamic configuration changes for most options
  - Job accounting information planned to be added to SMF Type 6 records
  - Support using System Logger for the Common Message Log
    - Rather than files in the z/OS UNIX System Services file system
    - Intended to allow you to manage message log data without shutting down Infoprint Services without interruption

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- More mutexes and shared condition variables in z/OS UNIX
  - A mutex (mutual exclusion) is a UNIX serialization mechanism (roughly analogous to ENQ with SCOPE=SYSTEM)
  - A condition variable can be associated with a mutex, and programs running in multiple threads can make decisions based on its value
  - Current limit per memory segment is 64K-1 sum of mutexes and condition variables
  - Current z/OS system limit for that sum is 128K
  - Current limits will remain for unauthorized users
  - New authorized limits planned are:
    - 16M-1 (x'FFFFFF') sum of mutexes and condition variables per shared segment
    - 4G-1 (x'FFFFFFFF') sum system limit
  - Authorization via UID(0) or READ (or higher) access to the SUPERUSER.SHMMCV.LIMIT resource in the UNIXPRIV class
- z/OS UNIX CADS size increase
  - z/OS V2.1 UNIX System Services planned to use a CADS
  - Intended increase the maximum number of threads that can be active per address space
- More z/OS UNIX pipes
  - Planned to support up to 15,360 pipes, up from the prior limit of 8,730

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- Language Environment support for check zones
  - New function to help expose memory overlays that cause heap damage
  - HEAPZONES run-time option designed to allow you to specify that each storage area requested have a check zone appended
  - Language Environment designed to detect a program storing data in a check zone
  - Intended to help you find problems that might otherwise be more difficult to identify
  - Designed to help you test application code—*new, changed, and existing!*
- Nested Preinitialized Environments under a single task
  - Allow you to call main routines in one preinitialized environment from another
  - Take advantage of multiple persistent preinitialized environments to improve application performance
- TSO/E REXX Enhancements
  - Enhancements to EXECIO, LISTDSI, and STORAGE:
    - Retrieve information about data sets in EAS on EAVs
    - Also, PDSE, concatenated, multivolume, and tape data set supp
    - Support I/O to undefined and spanned record format data sets
    - Improve the usability of EXECIO, LISTDSI

Top 39er†!

† **Partial**

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- New IXCNOTE interface for XCF
  - Designed to support notes with up to 1024 bytes of application data
  - Designed to allow applications to:
    - Create and delete "note pads"
    - Create, read, modify, or delete notes in note pads they are connected to
  - XCF will be designed to create note pads in CF list structures
  - New API intended to help improve Parallel Sysplex flexibility and usability for application programmers
  - Available on z/OS V1.13 with the PTF for APAR OA38450
- TMP Support for SYSREXX™
  - All functions of the CONSOLE host command environment
  - Designed to support system and subsystem commands, and monitoring message traffic with an EMCS console

z/OS XCF Note Pad Usage and Exploitation Thursday 4:30

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- Unicode 6.0 Support in Case, Collation, and Normalization Services
  - Designed to meet the Unicode 6.0 standard
- Support for Japanese Industrial Standards (JIS)
  - For Extended UNIX Code (EUC): JIS X 0201, JIS X 0208, and JIS X 0212
  - New support is designed to add three new CCSIDs: CCSID 17338, CCSID 21434, and CCSID 37818
  - These CCSIDs extend Japanese Unicode support to include 83 additional NEC characters
- Generalized Alignment support in the Binder
  - Planned to support the boundary alignment from byte to 4K page alignment
  - As specified in object modules when building program objects & load modules
  - When COMPAT=CURR on z/OS V2.1 (or V2.1 is specified)

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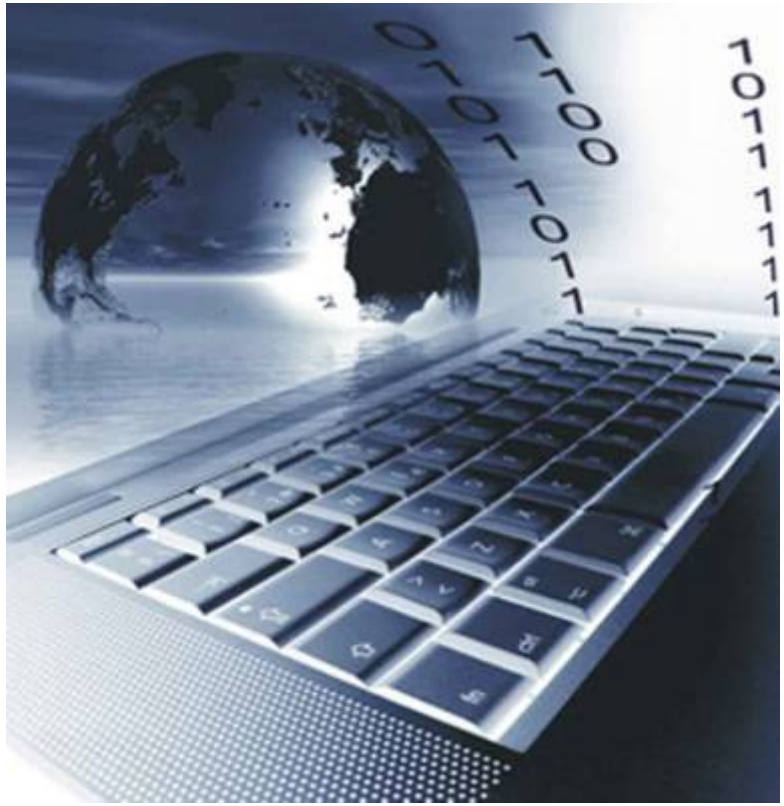
- ASCII conversion support in more z/OS UNIX System Services shell commands and utilities
  - Already supported for:

    chtag – Change file tag information
    find -- Find a file meeting specified criteria
    iconv -- Convert characters from one code set to another
    dd -- Convert and copy a file
    cp -- Copy a file
    mv -- Rename or move a file or directory
    pax -- Interchange portable archives
    ex -- Use the ex text editor
    vi -- Use the display-oriented interactive text editor

  - Planned support for:

    cat -- Concatenate or display text files
    cmp -- Compare two files
    comm –
    cut—
    diff -- Compare two text files and show the differences
    dircmp -- Compare directories
    ed—
    egrep -- Search a file for a specified pattern
    expand—
    fgrep -- Search a file for a specified pattern
    file -- Determine file type
    grep -- Search a file for a specified pattern
    head -- Display the first part of a file
    more -- Display files on a page-by-page basis
    paste—
    sed—
    strings—
    tail -- Display the last part of a file
    unexpand—
    unique—
    wc -- Count newlines, words, and bytes



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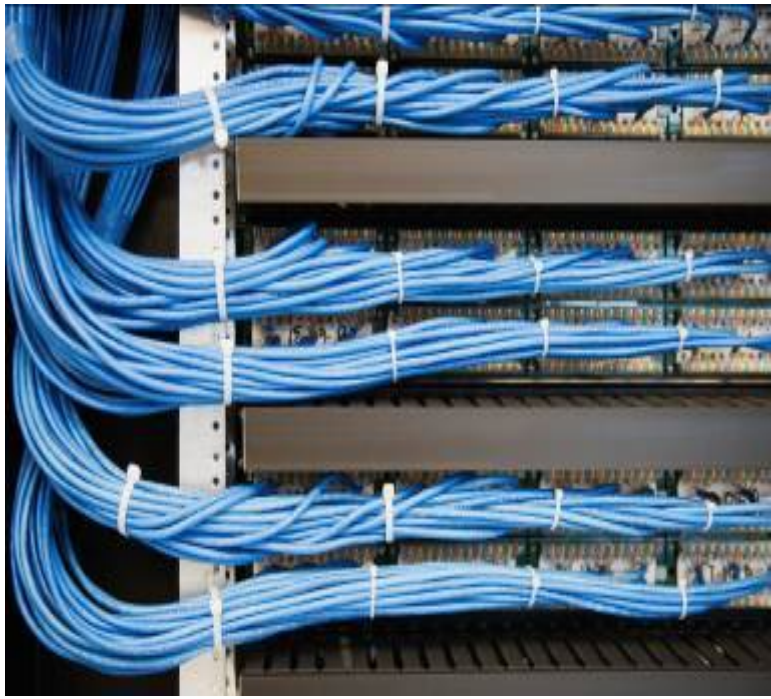
Networking*

- Enhanced fast path socket support
  - Fast path sockets-like performance
  - For all sockets using socket APIs
  - Designed to reduce CPU consumption, particularly for interactive workloads
- SACK support
  - Selective ACKnowledgements and packet retransmissions
  - As described by RFCs 2018 and 3517
  - Intended to reduce packet retransmissions when multiple packets are missed in a window

z/OS Communication Server Technical Update, Part 1 & 2
Monday, 9:30 and 11:00



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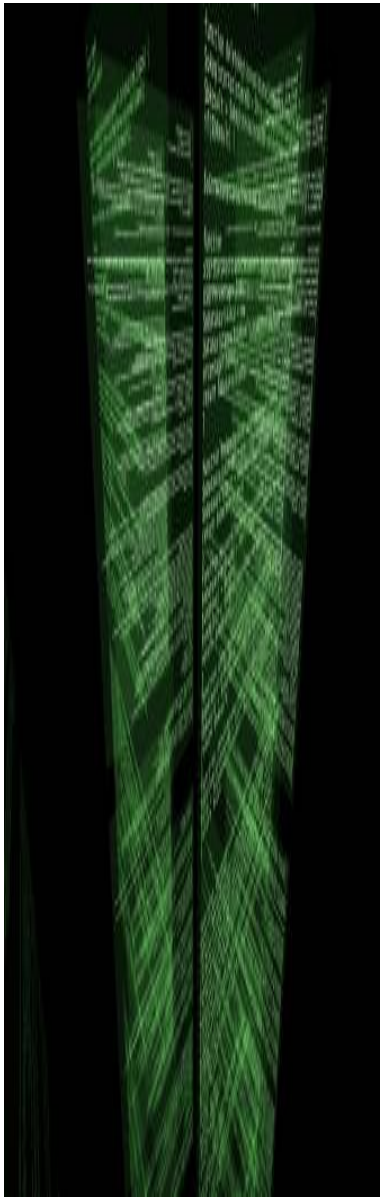
Networking*



- Resolver startup file fault tolerance
  - Resolver designed to start when setup file errors are detected
  - Intended to allow TCP/IP stacks and other dependent applications to start
- Support for QDIOACCEL with IPSEC
  - QDIOACCELERATOR designed to improve performance by allowing packets to be directly routed between HiperSockets and OSA QDIO connections
  - New function designed to provide that support with IPSEC enabled
- New FTP subcommands
  - MVSPut and MVSGet designed to simplify the transfer of sequential and partitioned (PDS and PDSE) data sets between z/OS systems

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Networking*

- FTP client security exit points
  - Two new exits, a command user exit and a reply user exit
  - Intended to be used to implement customer security policy
- New command to verify TCP profile syntax
  - V TCPIP,,SYNTaxcheck,dsname
  - Can run on any system at the same level
- Intrusion Detection:
  - Enhanced IDS IP fragment attack detection
  - Limit defensive filter logging to avoid log overruns
- DVIPA affinity
  - Preferentially associate a DVIPA with the original application

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Software Delivery Reminder*

Secure z/OS Software Delivery

- IBM plans to remove support for unsecured FTP connections
  - **October 1, 2013**
- System z product and service downloads will require either:
  - FTPS
  - Download Director with encryption
- Orders created before October 1, 2013 can be downloaded using currently supported methods until they expire, but no later than:
  - **November 1, 2013**
- IBM servers used for System z software downloads:
  - deliverycb-bld.dhe.ibm.com
  - deliverycb-mul.dhe.ibm.com
- IBM recommends you use the Connectivity Test website in advance:

https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?lang=en_US&sour

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Statements of Direction*

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Statements of Direction*

- z/OS V1.13 is planned to be the last release to support the Microsoft Windows based Capacity Provisioning Control Center (CPCC)
  - IBM intends to enhance the z/OSMF-based Capacity Provisioning application
- z/OS V2.1 is planned to be the last release to include Version 1 of the Standards Based Linux Instrumentation for Manageability (SBLIM) CIM client for Java
  - Version 2 of the SBLIM client, which is designed to be a JSR48-compliant implementation, is included in z/OS V1.13 and planned to be included in z/OS V2.1
  - ➢ IBM recommends that users of SBLIM Version 1 convert to Version 2
- z/OS V1.13 is planned to be the last release to provide support for Integrated Call Level Interface (ICLI)
  - ➢ You can use DRDA instead

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Statements of Direction*

- The Cryptographic Support for z/OS V1R12-R13 web deliverable is planned to be the last level of ICSF to support IBM eServer™ zSeries® 800 and 900 (z800, z900) servers
  - Future levels of ICSF are planned to require an IBM eServer zSeries 890 and 990 (z890, z990) or later server
  - Important! This is the same level of ICSF planned to be incorporated in z/OS V2.1, but z/OS V2.1 itself is planned to require an IBM System z9 EC, IBM System z9 BC, or later server
- z/OS V2.1 is planned to be the last release to include the IBM HTTP Server Powered by Domino® (IHS powered by Domino)
  - IBM recommends you use the IBM HTTP Server Powered by Apache, which is available in z/OS Ported Tools
  - IBM plans to provide documentation help with migration to IBM HTTP Server Powered by Apache
- z/OS V2.1 is planned to be the last release to support the z/OS BookManager® Build optional feature

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Statements of Direction*

Reminders:

- z/OS V1.13 is planned to be the last release to support multi-file system zFS aggregates, including zFS clones
  - Support for the zfsadm clone command and mount support for zFS file system data sets containing a cloned (.bak) file system will be removed
  - IBM recommends that you use copy functions such as pax and DFSMSdss™ to back up z/OS UNIX file systems to separate file systems
  - Support for zFS compatibility mode aggregates will remain
- z/OS V1.13 is planned to be the last release to support BPX.DEFAULT.USER
  - IBM recommends that you either use the BPX.UNIQUE.USER support that was introduced in z/OS V1.11, or assign unique UIDs to users who need them and assign GIDs for their groups
- z/OS V1.13 is planned to be the last release to provide the z/OS Capacity Provisioning support that utilizes the System z API for communication with the Support Element (SE) or Hardware Management Console (HMC)
  - This protocol is based on IP network connection using SNMP
  - IBM recommends configuring the Capacity Provisioning Manager for communication via the z/OS BCP Internal Interface (BCPii) protocol. The SE and HMC support for the System z API remains, and is not affected by this withdrawal of support
- z/OS V1.13 is planned to be the last release in which the BIND 9.2.0 function will be available
  - If you use the z/OS BIND 9.2.0 function as a caching-only name server, use the resolver function, which became generally available in z/OS V1.11, to cache Domain Name Server (DNS) responses
  - If you use the z/OS BIND 9.2.0 function as a primary or secondary authoritative name server, investigate using BIND on Linux for System z or BIND on an IBM blade in an IBM zEnterprise BladeCenter Extension (zBX)

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Statements of Direction*

Reminders:

- z/OS V1.13 is planned to be the final release for which the IBM Configuration Assistant for z/OS Communications Server tool that runs on Microsoft Windows will be provided by IBM
  - Currently an as-is, nonwarranted web download
  - ➢ Use the supported z/OSMF Configuration Assistant application instead
- z/OS V1.13 is planned to be the last release to support a staged migration for JES2 and JES3. Future releases will require you to migrate to all elements of z/OS at the same time, including JES2, JES3, or both.
- z/OS V1.13 is planned to be the last release to support changing the default Language Environment runtime options settings using SMP/E-installable USERMODs. IBM recommends using the CEEPRMxx PARMLIB member to set these options
- With the introduction of the SAF mode authorization in z/OSMF 1.13, IBM intends to withdraw support for Repository mode authorization in a future release. Both modes are being currently supported to allow customers time to migrate to the new authorization mode.

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Statements of Direction*

Reminders:

- z/OS V2.1 is planned to support these System z server models and later server models:
  - IBM System z9 Enterprise Class and IBM System z9 Business Class
  - IBM System z10 Enterprise Class and IBM System z10 Business Class
  - IBM zEnterprise 196 (z196) and IBM zEnterprise 114 (z114)
- z/OS Version 2 is planned to require these DASD control units, or later ones:
  - 3990 Model 3 or 3990 Model 6
  - 9393
  - 2105
  - 2107
  - 2421, 2422, 2423, or 2424

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Handy Resources

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System z Social Media

- **System z official Twitter handle:**
  - @ibm_system_z
- **Top Facebook pages related to System z:**
  - Systemz Mainframe
  - IBM System z on Campus
  - IBM Mainframe Professionals
  - Millennial Mainframer
- **Top LinkedIn Groups related to System z:**
  - Mainframe Experts Network
  - Mainframe
  - IBM Mainframe
  - System z Advocates
  - Cloud Mainframe Computing
- **YouTube**
  - IBM System z
- **List Servers**
  - IBM-MAIN
  - MVS-OE
  - RACF-L
  - IBMTCP-L
  - ISPF-L
  - LINUX-390
  - TSO-REXX (and TSOREXX)
  - VMESA-L
  - VSE-L

- **Leading Blogs related to System z:**
  - Evangelizing Mainframe (Destination z blog)
  - Mainframe Performance Topics
  - Common Sense
  - Enterprise Class Innovation: System z perspective
  - Mainframe
  - MainframeZone
  - Smarter Computing Blog
  - Millennial Mainframer
  - SHARE.org

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z Favorites Page

Handy links to:

- Just about everything!
  - z/OS platform libraries
  - z/OS wizards
  - Downloads
  - Support
  - Redbooks®
  - Education Assistant
  - WebSphere courses
  - LookAt (and LookAt Mobile Edition)
  - Product info
  - & lots more…
- URL: http://www.ibm.com/developerworks/university/systemz/index.html

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z/OS Basics Page

z/OS basic skills information center

New to z/OS?

New to z/OS? You've come to the right place! The z/OS basic skills information center is the fastest way to learn and become productive on z/OS.

Once you've learned the basic z/OS concepts and skills presented here, you can find the z/OS product documentation at the z/OS Internet Library Web site.

What's New

In June 2010, We added an enhanced "online workloads" section with new detailed information on IMS and DB2 for z/OS.

- **Mainframe concepts**
  HTML | PDF
  Get started with the mainframe.
- **z/OS concepts**
  HTML | PDF
  Get started with the fundamental concepts of z/OS.
- **Application programming on z/OS**
  HTML | PDF
- **z/OS system installation and maintenance**
  HTML | PDF
  What the system programmer does.
- **Data and storage management on z/OS**
  HTML | PDF
  All about storing and managing data on z/OS.
- **Online workloads for z/OS**

What's new

- Find out what's new in the z/OS basic skills IC

Related links

- z/OS Internet Library

IBM Academic Initiative

- Mainframe education opportunities

Podcast

- Who uses mainframe computers? podcast

Some resources:

- Entry-level books on PDF
- Reusable JCL collection
- 30-minute courses
- Glossary of z/OS terms

Handy links to:

- z/OS Library
- IBM Academic Initiative
- URL: http://publib.boulder.ibm.com/infocenter/zos/basics/index.jsp

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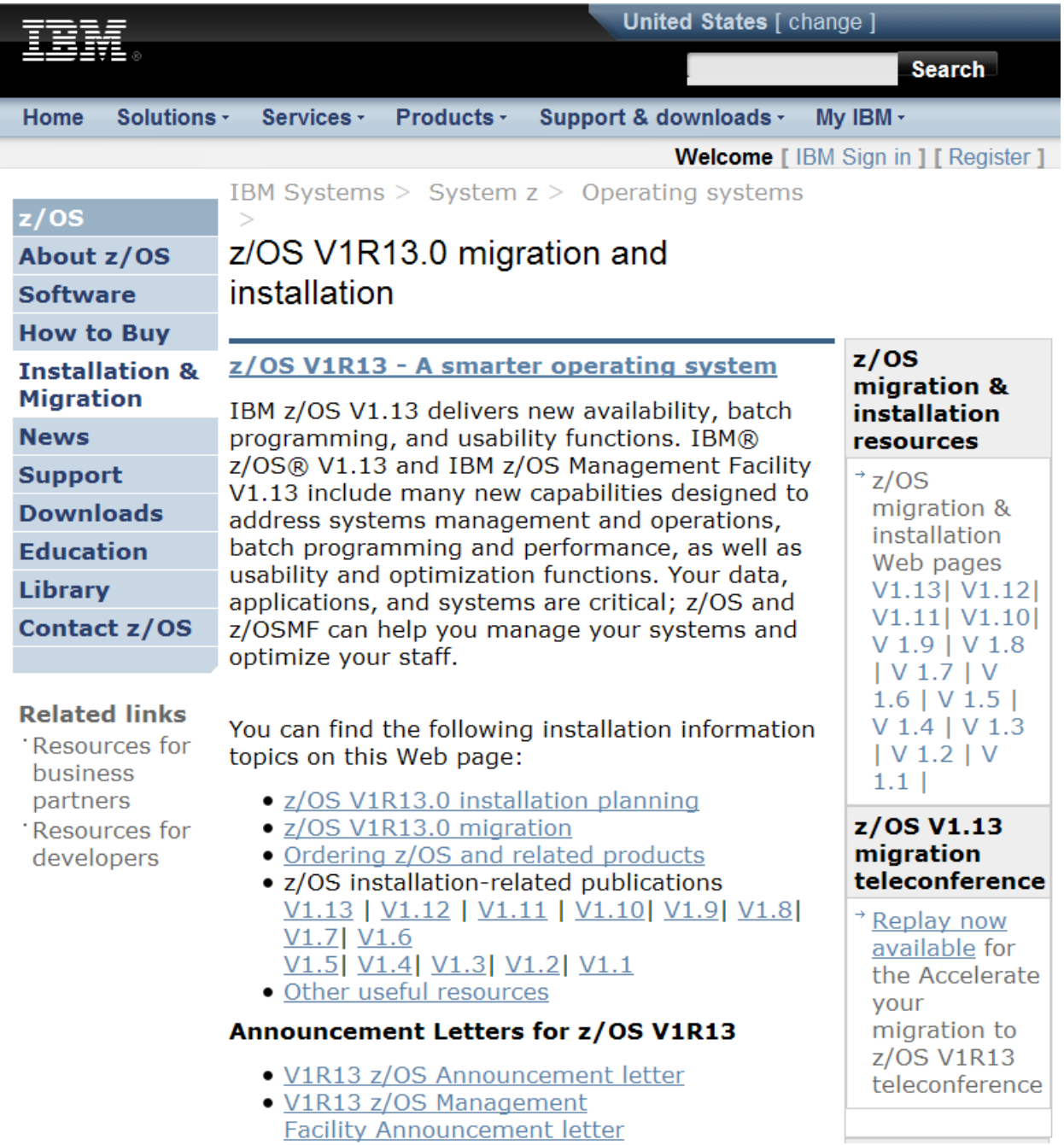
z/OS Installation Page



Some resources:

- Related books on PDF
- Telecon replay
- Hints & Tips
- Samples

Handy links to:

- Related books in BookManager format
- Minimum levels of IBM products that run on z/OS V1R13.0
- ShopzSeries
- Announcement letters
- CPPUPDTE documentation
- URL: http://www.ibm.com/systems/z/os/zos/installation/

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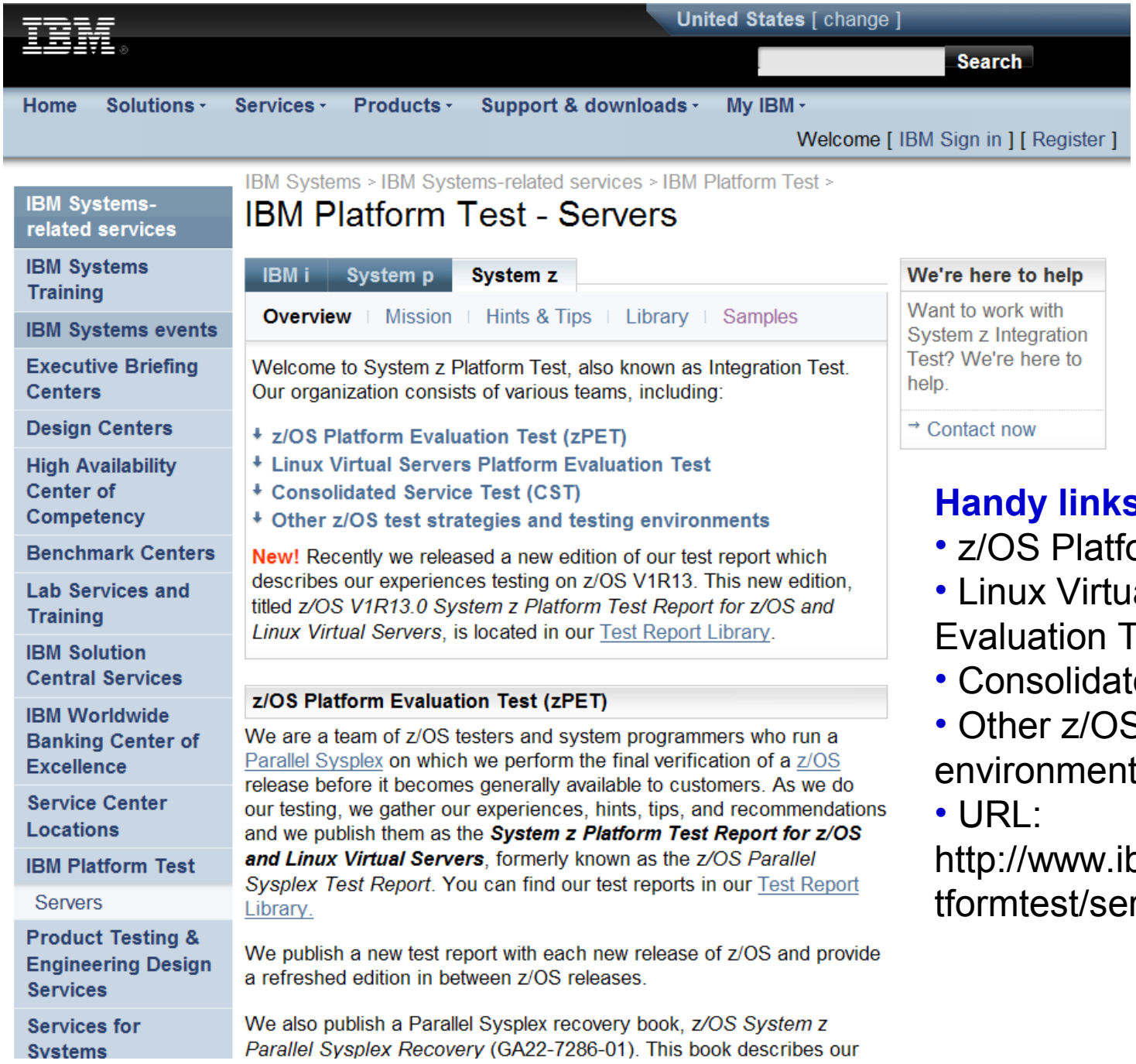
z/OS Platform Test Website



Some resources:

- Test experience reports about HW, OS, middleware
- Hints & Tips
- Samples

Handy links to:

- z/OS Platform Evaluation Test
- Linux Virtual Servers Platform Evaluation Test
- Consolidated Service Test (CST)
- Other z/OS test strategies and testing environments
- URL: http://www.ibm.com/systems/services/platformtest/servers/systemz.html

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System z Academic Initiative Page

Some resources:

- Textbooks on PDF
- Sample Mastery exams
- IBM System z Job Board

Handy links to:

- System z Seminar Schedule
- Upcoming technical conferences
- Online resources
- URL: http://www.ibm.com/developerworks/university/systemz/index.html

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Optimize your z/OS environment

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