MVS Core Technologies Project (MVSE) Opening and WSC Hot Topics

Mary Anne Matyaz
Manager—MVS Core Technologies Project

August 10, 2015  1:45 PM
Session Number 17425
Our Purpose

The MVS Core Technologies Project is concerned with a broad spectrum of mainframe-related topics that provide in-depth exploration of IBM’s flagship platform in both the hardware and software realms. Hardware areas of interest include z Systems processors, HMC, coupling facilities, STP, and I/O connectivity. Software areas of interest include z/OS operating system components, subsystems and applications such as RSM, VSM, IOS, Parallel Sysplex, JES2, JES3, TSO/E, ISPF, z/OS UNIX, zFS, Ported Tools, z/OSMF, and enterprise presentation solutions such as Infoprint. Advanced sessions will discuss architecture, installation, configuration, migration, service, problem determination, and exploitation of the latest System z and z/OS capabilities. Tools such as ServerPac, HCD/HCM, SMP/E, IPCS, and others are regularly discussed. The Project also offers sessions for those who are new to the platform, intended to help them quickly integrate into their environment and acquire mainframe skills and understanding of the platform, especially in z/OS.
### Senior Project Officers

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Orlando Schedule Overview

• The MVS Core Technologies Project is presenting 73 sessions: 65 regular, 5 labs and 3 lunch Roundtables

• Across all of SHARE there are over 550 great sessions!

• Technology Exchange, Receptions, Interest Dinners

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
User-Driven Sessions
(What SHARE Is Known For!)

- 17440 SHARE Live!: z/OS 2.2 User Experiences
- 17410 PDSMAN/Ezyedit - For Programmers and Engineers
- 17238 RD&T User Experiences: Running z/OS on a PC
- 17797 How You Do What You Do When You're a z13 CPU
- 17880 LPAR Defined Capacity, Initial Processing Weight, the Soft Cap and LPAR Group Capacity Limits
- 17232 z/OS Sysprog Goody Bag (Bob who?)
- 17659 User Experience: IBM HTTP Apache Migration
- 17653 A Consultant's View on Recent Software Pricing Options
- 17412 An Experienced ISPF User Shares His Secrets
- 17578 ISPF Power Tools: Using Panel Exits to Dynamically Display/Hide Panel Lines
- 17229 Bit Bucket x‘32‘
Sessions of Note

- 17443 z/OS Parallel Sysplex z/OS 2.2 Update
- 17601 What's New in z/OS 2.2 JES3?
- 18034 SMFPRMxx Parameters - Which can Help; Which can Hurt
- 17788 z Systems - It's Been a Bumpy Ride
- 17876 SORT Subjects: Tips and Tricks Using SyncSort
- 17442 z/OS Log Analysis Product Shoot-Out: CorreLog, Syncsort/Splunk and IBM
- 17792 SMF Digital Signatures in z/OS 2.2
- 17441 z/OS Powerpoint Karaoke
Orlando Social Media Blitz

• #SHAREorg, @SHAREHQ
• #mainframe, #zsystems
• List of active Twitter Accounts:
  – https://twitter.com/SHAREhq/shareorg-engagement/members
• SHARE on Facebook:
  – https://www.facebook.com/SHAREonSocial
• SHARE Mobile App (Apple Store and Google Play)
  – Search on SHARE Inc  http://m.core-apps.com/share_inc
z/OS Requirements: Influencing IBM Development

- Requirements Committee: Cheryl Watson (Chair), Laura Carbone (IBM), Tom Conley, Ed Jaffe, Paul Vincent, Sam Knutson, Mary Anne Matyaz, Bill Smith, Glenn Hanna
- Over the past few years, IBM and SHARE have re-energized the requirements process.
- The SHARE requirements process is how YOU help to influence IBM’s development priorities to get the functions we all need implemented.
- There were many SHARE requirements fulfilled in z/OS 2.1.
- That looks to be repeated in z/OS 2.2
Kudos to the planning/scheduling team

• This is a tremendous undertaking and we are all volunteers.
• Please join me in thanking the rest of the planning team for organizing an outstanding agenda:
  – Steve Warren, IBM
  – Tom Conley, Pinnacle Consulting
  – Gordon Daniel, New Era Software
  – James Lund, Texas A & M University
  – Sam Knutson, Compuware
  – Jerry Whitteridge, Safeway
MVS  Project Dinner - Wednesday night

Big River Grille & Brewing Works

Disney's BoardWalk

• We have a guaranteed paid reservation. **Sign up = must show up**
  – Signing up means putting your name on the paper list that Marna Walle has. See Marna to sign up by noon Wed.
• Tables no larger than eight are expected.
• Menu is: salad, main course, dessert. Soda, tea, and coffee are included.
• Meal is fixed price of $47.31 pp (incl. tax and tip), alcohol is your own separate purchase. Separate checks at each table.
• Meet in Dolphin Lobby @ 7:00. Not at the restaurant.
Disney & Mainframes?

- Computerworld 1990: Max Modem and the Mainframes?
Programmed for laughs!

WALT DISNEY productions

THE COMPUTER WORE TENNIS SHOES

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
So I decided to make my own:

ZNEXTGEN BALL
FINISHED MY Z/OS
UPGRADE - YAY!
MA’s Favorite Meme

Hackers, Viruses, Outages...

If only I'd stayed on a Mainframe!
Our Speakers This Morning

- Jeff Magdall, IBM z/OS Product Leader
- John Shebey III, IBM Level 2
- Hot Topics from Riaz Ahmad (IBM ATS (WSC))
- On-line session evaluations
  - www.share.org/Orlando-Eval
  - See bottom of every slide in every presentation or use QR codes
  - I read *all* comments you make. Really!
- SESSION CHAIRS STILL NEEDED! Please volunteer! See Mary Anne for MVS Core Technologies or any of the other Project managers of their respective Projects.
- Enjoy the week at SHARE!

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
z/OS Futures
Jeff Magdall, IBM
z/OS Product Lead
z/OS Update and Directions

Jeff Magdall – z Systems Strategy
magdall@us.ibm.com

August 10, 2015

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Topics

• Introduction : z/OS PDT Leader

• Continuous Delivery

• Secure Engineering

• z/OS 2.2 Pre GA....

• SHARE Requirements

• Reddit AMA session
Changes in z/OS Product Lead

Scott Engleman
engleman@us.ibm.com
Jeff Magdall, Marna Walle, Alan June, and many others

May 29, 2015
## Continuous Delivery – Enables more responsive delivery

### Assumptions:
- Ship in the service stream as PTFs (not web deliverable)
- Will be system tested and have documentation available
- Will be a quality deliverable - tested
- Limited if any disruption or migration actions
- Default to include a chicken-switch to enable

### Issues / concerns
- Ensure this is as efficient (cost and content)
- Requires a more continuous test process
- Address Service complexity – pre req, co req, PE
- What’s the most effective way to communicate it.

### Impacts:
- Software Developers / ISVs may need continuous access or at least awareness of changes to support them.
- May require clients to put on service for these new functions even though they remain disabled.

### Client View
- Affect or impact to client Service / RSU methodologies
- Affect on release migrations (faster or slower)
- Ability to “continuously consume” new functions?
- How do clients want to learn about new capabilities?

---

**We have and will continue to deliver function (for a variety of reasons) in between releases. If we are more aggressive, and deliver more (high value capability), will clients use it?**
SDSF: A cadence of new capabilities, today and tomorrow

Simplify management with enhanced productivity, usability and economics

**Productivity**
- Enhancements provide information about virtual memory, device allocation, and workload delays.
- Supports commands for table oriented displays;
- Support for JES3 output disposition
- Displays the user-id of an enclave

**Usability**
- Capture commands; recall commands
- Turn SDSF actions into REXX execs
- Build/run REXX execs
- Annotate commands.

**Economics**
- Part of SDSF processing is now zIIP eligible

**GA 3Q15**

**Productivity**
- New commands to display data sets:
  - Display APF authorized data sets, LPA list, Linklist, Parmlib concatenation lists, and more
- Display IPL, performance, address space, CPU and storage information

**Usability**
- A new search mask command to search dataset list by pattern

**Extensive systems resource support.**
- Adds a cadence of many additional features and functions spanning storage, system, memory and subsystems, along with support for generic tracker

**4Q15**
A Multi Year Roadmap for SDSF Extends Management Reach and Usability (slide option 2)

- Show APF data sets, LPA data sets, linklist data sets, parmlib …
- Display system information: IPL, performance, storage information, CPU and address space information.
- Enhanced file search, by pattern
- Display address space level information about virtual memory, device allocation, and workload delays;
- New output disposition support for JES3;
- Options for entering commands for table-oriented displays;
- New provisions for REXX execs

SDSF can now offload:
- Show APF data sets, LPA data sets, linklist data sets, parmlib …
- New output disposition support for JES3;
- Options for entering commands for table-oriented displays;
- New provisions for REXX execs

- Address space diagnostic information
- View catalog information, UNIX and dump ds
- Display storage map, consumption, common or virtual storage
- View subsystem information
- Display DFSMS classes, volumes
- Display WLM & XCF constructs
- Manage dynamic system exits
- Display generic tracker

- Additional systems support and improved usability

Automation and productivity

Gain deeper insight into multiple system resources

z/OS V2.2 3Q15

4Q 2015

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SDSF Product Update for z/OS 2.2

SHARE Orlando, Session 17432
Monday, August 10, 2015

Tom Wasik
JES2 Development
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Written by Chip Wood
The IBM Secure Engineering Framework (SEF) was developed to help ensure that software is secure by design, secure in implementation, and secure in deployment.

The Secure Engineering Framework focuses on software product delivery from an end-to-end perspective and discusses key security practices for each phase of software development.

The elements of the Secure Engineer Framework include:

- Education and awareness
- Project planning
- Risk assessment and threat modeling
- Security requirements
- Secure coding, test and vulnerability assessment
- Documentation
- Incident response

z Systems Center for Secure Engineering
Additional Security Focused Testing and Scrutiny

- The z Systems Center for Secure Engineering team uses multiple analysis techniques:
  - "White box" analysis:
    - All relevant information about the system or software is known and available to the tester.
    - This approach to analysis is common in the quality assurance space where the people responsible for the software have access to both the design documentation and the source code.
  - "Black Box" analysis:
    - Black box analysis involves examining the software or system with no prior knowledge of the environment.
    - This type of analysis is similar to what an outside attacker might do. Using automated tools and manual techniques, the analysis begins by detecting the attack surface and probing the system for relevant information.
  - "Gray Box" Analysis:
    - Both white box and black box analysis can reveal possible software risks and potential exploits.
    - The use of gray box techniques combines both white and black box analysis methods in a powerful way. The benefits of both approaches can be obtained while minimizing the potential that important issues are missed.
      - Source code scanning using Rational AppScan where appropriate
        - Web based interfaces, Java code, etc.
      - The Secure Engineering team partners with IBM Research for ethical penetration testing
        - Includes firmware, OS & software stack.
Security Hygiene – z Systems Security/Integrity Service…

- z Systems Security Portal
  - Only available to IBM System z Clients
  - Identifies the APAR/PTF numbers for all applicable exposures
    - Customers are considered exposed if they run affected product/component
  - Information posted as soon as PTF fix is available
  - Recommend subscribing for email notification
  - SMP/E support to help manage
    - SECINT HODEATDA (includes CVSS Base and Temporal Scores)
    - ++ASSIGN statements
  - Industry standard scoring for risk assessment

- Common Vulnerability Scoring System (CVSS)
  - APARs scored from 1 to 10 based on characteristics and impact of vulnerabilities
  - Example of CVSS values:
    - CVSS/B=7.2
    - CVSS/T=6.3

- Using the z Systems Security Portal and the SMP/E HODEATDA with the CVSS Base & Temporal scores enables to determine the remediation response appropriate for your environment

- References:
  - http://www.first.org/cvss
  - Frequently Asked Questions document:
Had an amazing time @ibm this week.
Lots of smart people there, really awesome frank discussions about security
**z/OS 2.2**
- First release through the full 2 year development cycle
- First z/OS release with z/OSMF integrated into the base - Workflows will help with migration
- Approximately 30% of the Top 75 SHARE requirements fulfilled with z/OS V2.2, and ~200 FITS/RFE requirements were fulfilled as well
- Continued release to release quality improvements with ~ 7% improvement over z/OS V2.1.

**Software Developers (Independent Software Vendors (ISVs))**
- First code delivered in November 2014 (11 months prior to GA)
- ~ 33 ISVs Testing z/OS 2.2 early – 2 ISVs new the program for z/OS 2.2
- 33 ISVs have support statements at GA

**Customer ESP**
- Delivered GA Level of code June 2015
- 30+ internal and External client participants
- 1 First Time external client participant
- Representation from all 7 IBM IOT (Integrated Operating Teams)

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2 ESP clients running z/OS 2.2 in production - 60 days to GA

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
ISVs supporting z/OS 2.2 announce
SHARE Requirements

- “TOP 39” list during the z/OS 2.1 development and delivery
  - With z/OS 2.1 we have delivered on over 30% of those
  - With z/OS 2.2 GA, that’s increased that to almost 40%

- As we began the development cycle for z/OS 2.2 we asked for updates.

- Watch what you ask for….. The “Top 50+25” focus for z/OS 2.2 and 2.3
  - >30% will have been delivered with z/OS 2.2.

SHARE requirements continue to be a focus in z/OS planning
Statements regarding IBM future intent and direction are subject to change or withdrawal, and represent goals and objectives only.
Metrics

- Snip ibm.biz link clicked 2000+ times
- Initially pointed to MainframeInsights page, redirected to AMA thread when created

Views per Day for the Past Month (Updates every 30 minutes)
Total Views for the Past Month: 2129
IBM zSystems Momentum (1Q15)

new accounts since 3Q10 zEnterprise launch, with 42% in growth markets

13%
growth in installed IFL MIPS (YTY)

74,000
Students worldwide have participated in the Master the Mainframe for IBM z Systems since 2005

ISV apps run on IBM z Systems; More than 650 new and upgraded applications added for z/OS and Linux in 2014.

Complete your session evaluations online at www.SHARE.org/Orlando-Eval

[ IFL = Linux-on-z Only Engine ]
Thank You
Session 17425: MVSE Opening

*Interesting PMR updates*

**z/OS Service and APARs**

August 10th, 2015

John Shebey
IBM Poughkeepsie
jshebey@us.ibm.com
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- z/Architecture®
- z/OS®

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Notes:
Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
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Interesting PMR Updates!
Interesting Business Impacts

New finds and old favorites
Business Impact:

To plan the deployment to occupy manager’s time
Business Impact:

End users getting cranky.
Business Impact:

Lots of annoying people coming to my desk.
Business Impact:

Improving my business since I am not sucking up machine time trying to install it.
Business Impact:

Angry mob chasing me with torches and agricultural implements.
Business Impact:

Pain in the backside.
z/OS Casino
When using ISHELL to set some permission bids, they are not getting picked up.
z/OS Soap
I would like to know what members of palmlive need to be updated to activate a ZIP.
z/OS Apocalypse
When the RACF database reaches 100%, a super comet is discovered on a collision path with earth. And that's the good part.
• z/OS 2.1

• Dirty high half of R15 after Storage Obtain/Getmain call. Depending upon the reaction of the code/subsystem/exit that encounters the dirty R15, unpredictable results may occur. This error is introduced by PE UA90976

• APAR is OPEN (++APAR available, also see APAR for procedural circumvention)
• z/OS 1.13 and up

• Tasks taking an SDUMP with ECB remain hung after the SDUMP completes. This error is introduced by PEs from OA47148

• PTFs: UA77970 to UA77972 (tentatively RSU1508)
Red Alerts (since last SHARE)


- 07/06/15  DB2  PI41630 and PI42170
ATS Update
Riaz Ahmad, IBM
Agenda

- Operating Systems status
- Washington Systems Center Flashes
- Announcements
- Parallel Sysplex™
## z/OS Support Summary

<table>
<thead>
<tr>
<th>Release</th>
<th>z900/z800 WdfM</th>
<th>z990/z890 WdfM</th>
<th>z9 EC WdfM</th>
<th>z9 BC WdfM</th>
<th>z10 EC WdfM</th>
<th>z10 BC WdfM</th>
<th>z19 6 w/zBX</th>
<th>z11 4 w/zBX</th>
<th>z114 w/zBX</th>
<th>z114 WdfM</th>
<th>z19 WdfM</th>
<th>zEC1 2</th>
<th>zBC1 2</th>
<th>z13</th>
<th>End of Service</th>
<th>Coexist with</th>
<th>Software Support Services for z/OS</th>
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<tr>
<td>z/OS V1.10</td>
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<td>9/20</td>
<td>2.4*</td>
<td>3*</td>
<td></td>
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</tr>
</tbody>
</table>

Notes:
- WdfM – Server has been withdrawn from Marketing
- The IBM Software Support Services for z/OS provides the ability for customers to purchase extended defect support for that release of z/OS for up to 24 months after the z/OS release’s end of service date.
- Defect support provided with Software Support Services for z/OS
- Generally supported
- Planned Release
- Out of Software Support Services for z/OS support*
- Planned. All statements regarding IBM’s plans, directions, and intent are subject to change or withdrawal without notice.

### Migrating to z/OS 2.2
**Parts 1 and 2**
**Tuesday 3:15 & 4:30**
IBM Software Support Services for z/OS V1.11 and V1.12 beyond the z/OS end-of-service date

- IBM Software Support Services - service extension for z/OS is a fee-based corrective service (a fix, bypass, or restriction to a problem) for users who have not completed their migration to a newer z/OS release.

- Beginning with z/OS V1.12, **IBM Software Support Services** replaced the IBM Lifecycle Extension for z/OS offering with a service extension for extended support coverage.

- Service extension support for z/OS V1.12 provides for up to three years, beginning October 1, 2014 and available through September 30, 2017.

- Additionally, service extension support for z/OS V1.11 is provided for up to two years, beginning October 1, 2014 and available through September 30, 2016.

*Announcement Letter: 614-010 Dated June 14, 2014*
z/OS Key Dates

• Current orderable z/OS Release is z/OS V2.1

• z/OS Version 2 Release 2
  – January 14, 2015: Previewed
  – July 28, 2015: Announce
  – September 30, 2015: Planned GA via ServerPac, CBPDO

These customized offerings are offered for Internet delivery in countries where Shopz product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, refer to the Shopz help information at http://www.software.ibm.com/ShopzSeries

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options include:

• 3590
• 3592
z/OS V2.2 Operating Environment

• z/OS V2.2 runs on the following IBM z Systems servers:
  – IBM z13
  – IBM zEnterprise EC12 (zEC12)
  – IBM zEnterprise BC12 (zBC12)
  – IBM zEnterprise 196 (z196)*
  – IBM zEnterprise 114 (z114)*
  – IBM System z10 (z10 EC, z10 BC)*

• In addition, z/OS V2.2 supports following and later IBM storage control units:
  – 3390 Model 3 and Model 6*
  – 9393*
  – 2105*
  – 2107*
  – 2421, 2422, 2423, and 2424

* Products are withdrawn from marketing
Coexistence, Release Migration and Fallback

- z/OS provides you compatibility and flexibility as you migrate systems in a multisystem configuration by allowing multiple releases of z/OS to co-exist
- IBM plans to support an n-2 policy, where three consecutive releases are planned to be supported for co-existence, fallback and migration

<table>
<thead>
<tr>
<th>Release</th>
<th>Coexistence-Migration-Fallback</th>
</tr>
</thead>
<tbody>
<tr>
<td>z/OS V1.13</td>
<td>z/OS V1.11(^1), z/OS V1.12(^2), z/OS V1.13(^3)</td>
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<td>z/OS V2.1</td>
<td>z/OS V1.12(^2), z/OS V1.13(^3), z/OS V2.1</td>
</tr>
<tr>
<td>z/OS V2.2</td>
<td>z/OS V1.13(^3), z/OS V2.1, z/OS V2.2</td>
</tr>
</tbody>
</table>

\(^1\) z/OS V1.11 end of service was September 30, 2012
\(^2\) z/OS V1.12 end of service was September 30, 2014
\(^3\) z/OS V1.13 end of service is planned to be September 30, 2016
Secure z/OS Software Delivery

• IBM Plans to discontinue support in 1Q2016 for standard FTP connections used for z/OS software and service (PTFs) delivery

• You will require the use of either FTPS or HTTPS.

• You should take steps now to verify your system setup using the Connectivity Test website to verify your system setup at
z/OS V2.2 Installation

• Starting with z/OS V2.2 orders, ServerPac is designed to provide more assistance with setting up the system components, including:
  – Knowledge Center for z/OS, so it is ready for you to load documents
  – Choosing between SMF lo streams and SYS1.MANx data sets
  – z/OSMF Configuration

• Also at z/OS V2.2 availability, the Customized Offering Driver (5751-COD), a subset of a z/OS V1.13 system, is planned to be updated to support the driving system requirements for z/OS V2.2 system installation using ServerPac or CBPDO, and to provide documentation in PDF format on a DVD
Agenda

• Operating Systems status
• Washington Systems Center Flashes
• Announcements
• Parallel Sysplex™
The Manipulation of a Step's Status in z/OSMF Work-flows through Variable Passing

- **WP102543**
- This white paper outlines one of the processes related to z/OSMF work-flow definition file creation that is not immediately obvious to the z/OSMF beginner; variable passing.
- The information provided should ease some of the pain that comes along with the constant testing necessary to get a work-flow working properly.
Testing experiences with z/OS V2R1 CF LOSSCONN Recovery Management (also known as Serial Rebuild)

- WP102520
- This white paper documents our experiences with testing the z/OS V2R1 Coupling Facility LOSSCONN Recovery Management (CFLCRMGMNT) function
- Shows how this enhancement improves structure recovery processing when a loss of connectivity to a coupling facility (CF) occurs.
- Our experiences result from testing CF failures in the IBM Large Configuration System Test for Enterprise (LCST/e) environment which represents one of the most customer-like test environments within IBM
WP102526

With the recent availability of the z13 processor, the new chip offers intelligently implemented 2-way simultaneous multithreading.

Simultaneous multithreading (SMT) allows two active instruction streams per core, each dynamically sharing the core’s execution resources. The SMT feature is available in IBM z13 for workloads running on the Integrated Facility for Linux (IFL) and the z Integrated Information Processor (zIIP).

SAP on z Systems is an excellent candidate in employing zIIP processors for the SAP database server, and IFL processors for SAP application servers. Therefore, it can exploit SMT and potentially see performance gains from using it.
Agenda

• Operating Systems status
• Washington Systems Center Flashes
• Announcements
• Parallel Sysplex™
IBM z13™

- **Machine Type**
  - 2964
- **5 Models**
- **Processor Units (PUs)**
  - 39 (42 for NE1) PU cores per CPC drawer
  - Up to 24 SAPs per system, standard
  - 2 spaces designated per system
  - Depending on the H/W model, up to 30, 63, 96, 129,141 PU cores available for characterization
    - Central Processors (CPs), Internal Coupling Facility (ICFs), Integrated Facility for Linux (IFLs), IBM z Integrated Information Processor (zIIP), optional - additional System Assist Processors (SAPs) and optional - firmware Flash Express (IFP)
  - 85 LPARs, increased from 60
    - Sub-capacity available for up to 30 CPs
  - 3 sub-capacity points
- **Memory**
  - RAIM Memory design
  - System Minimum of 64 GB
  - Up to 2.5 TB GB per drawer
  - Up to 1.1 TB per LPAR, LPAR S/2 dependent
    - 4TB per LPAR – z/OS 2.2, 2.1 (SoD), 1TB per LPAR - z/OS 1.13 & z/OS 1.12
    - 96 GB fixed
    - 32/64/96/128/256/512 GB increments
    - Flash Express
- **I/O**
  - 6 GBps I/O Interconnects – carry forward only
  - Up to 40 PCIe Gen3 Fanouts @ 16 Gbps each and Integrated Coupling Adapters @ 2 x 8 Gbps per System
  - 6 Logical Channel Subsystems (LCSSs)
    - 4 Sub-channel sets per LCSS
- **Server Time Protocol (STP)**

### The New IBM z13™ Parts 1 & 2
- **Tuesday 11:15 & 1:45**
- **z/OS Support for the IBM z13**
- **Wednesday 1:45**
**z/OS V2.2**

**Usability and Skills**
z/OSMF as a base element of z/OS; TCP/IP configuration; z/OSMF plug-in setup workflow; Updates to WLM, RMF, Incident Log, Software Management, WebISPF applications; New z/OSMF External Applications API; DJC and Deadline Scheduling for JES2; System Symbol enhancements…

**Scalability & Performance**
More threads for z/OS UNIX® System Services, AMODE64 File System Services for zFS & NFS, CA-Level Locking for RLS, zFS performance, Even More Jobs for JES2, …

**Availability**
Dynamic JES2 Checkpoint Tuning & Expansion, Private Area Virtual Storage Tracking in PFA, Dynamic TDS (LDAP) Compatibility Upgrades, Multi-target PPRC, Incremental FlashCopy, XCF message processing, LOGREC deallocation, O/C/EOV Dynamic Exits,

**Systems Management**
Smarter Subsystem Interface processing, DFSMShsm Storage Tiers Extensions, Extensions to Health-Based Workload Routing, RMF Reporting Enhancements, Generic Tracker Improvements, …

**Enhancing Security**
Signed SMF records, RFC 4556 X.509 support in Kerberos, RRSF Dynamic Node Reassignment, Multiple certificate approvers, PKI RFC 6277 Support, System SSL RFC 2560 OCSP Support, z/OS UNIX security improvements, BCPii audit records,

**Networking**
64-bit TCP/IP Stack, RoCE Improvements, DVIPA Limit, CICS Sockets, Enterprise Extender Scalability, NIST SP800-131a, TLS Session Reuse, Resolver Improvements, …

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* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represent goals and objectives only.
Larger Catalogs

- DFSMS supports catalogs with extended addressability
  - Designed to support ICF catalogs larger than 4 GB
  - New maximum is same as the volume size, currently 223 GB

- **Support for more aliases per user catalog**
  - z/OS R12 increased the maximum catalog size
    - Architectural limit now 140 TB
  - Number of aliases a catalog can have in z/OS R13 is over 500,000 (depending on alias name lengths)
    - Prior limit on number of aliases was 3,000 (depending on alias name lengths)
  - Exploitation is by PARMLIB member (IGGCATxx) keyword
    - EXTENDEDALIAS(YES|NO)
      - Do not specify YES until all systems that will process the catalog are at R13 or later!
  - New z/OS command:
    - MODIFY CATALOG,ENABLE(EXTENDEDALIAS)
      - Do not issue until all systems that will process the catalog are at R13 or later
New Catalog Member in PARMLIB

- New IGGCATxx member
  - CATALOG=(xx,yy, ...) in IEASYSxx
  - Default is IGGCAT00
  - Multiple members supported
  - Catalog defaults taken if no PARMLIB member found

Support for specifying:

- VVDS space defaults – VVDSSPACE(10,10)
- Catalog utilization warning message threshold
- Limit on CAS service tasks (overrides any specification in SYSCATxx)
- Whether to enable extension records for user catalog aliases
- A number of other things you also specify using MODIFY CATALOG
- Some keywords inadvertently omitted from R13 Initialization & Tuning:
  - EXTENDEDALIAS(YES/NO), DELFORCEWNG(YES/NO), DELRECOVWNG(YES/NO)
  - DSNCHECK(YES/NO), SYMREC(YES/NO), UPDTFAIL(YES/NO), VVRCHECK(YES/NO),
- Warning message for usercatalog delete
RLS for Catalogs

• z/OS V1R12 increased maximum catalog size and implemented CA Reclaim
• z/OS V1R13 increased the number of aliases per user catalog
• z/OS V2R1 supports record-level sharing for user and volume catalogs:
  • Removed most size and performance related reasons for splitting user catalogs in a Parallel Sysplex
  • Most catalog contention likely to evaporate
  • Master catalog is 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
Agenda

- Operating Systems status
- Washington Systems Center Flashes
- Announcements
- Parallel Sysplex™

Complete your session evaluations online at www.SHARE.org/Orlando-Eval
z13 Parallel Sysplex Coupling Connectivity

- **z196 and z114**
  - 12x IFB, 12x IFB3, 1x IFB

- **z10, z9 EC, z9 BC, z890, z990**
  - Not supported in same Parallel Sysplex or STP CTN with z13

- **zEC12 and zBC12**
  - 12x IFB, 12x IFB3, 1x IFB

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**z/OS Parallel Sysplex z/OS 2.2 Update Wednesday 11:15**

Note: The link data rates in GBps or Gbps, do not represent the performance of the links. The actual performance is dependent upon many factors including latency through the adapters, cable lengths, and the type of workload.

IC (Internal Coupling Link):
- Only supports IC-to-IC connectivity
- HCA2-O LR and HCA2-O LR are NOT supported on z13 or future High End z enterprises as Per SOD
- ISC-3 is not supported on z13 even if I/O Drawer is Carried Forward for FICON Express8

Complete your survey online at www.SHARE.org/Orl
Parallel Sysplex CFCC Level 20

- Support for up to 141 ICFs on a single z13 processor
  - The maximum number of processors in a Coupling Facility Partition remains 16
- Large memory Support
  - Improve availability for larger CF cache structures and data sharing performance with larger DB2 Group Buffer Pools (GBP). This support removes inhibitors to using large CF structures, enabling use of Large Memory to appropriately scale to larger DB2 Local Buffer Pools (LBP) and Group Buffer Pools (GBP) in data sharing environments.
  - CF structure size remains at a maximum of 1 TB
- Support for new ICA coupling adapters

- Structure Sizing with CFCC level 20
  - May increase storage requirements when moving from earlier CFCC levels to CF Level 20
  - Use of the CFSizer Tool is recommended: http://www.ibm.com/systems/z/cfsizer/

IBM zEnterprise System®: Performance Report on Exploiting Large Memory for DB2 Buffer Pools with SAP®
http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP102461
- Errata for z/OS Hot Topics, issue 29
- The printed copy of **z/OS Hot Topics, issue 29** has incorrect technical information in **Track down GRS requests with SMF** on page 30.
- The first two sentences have been revised and the paragraph under the topic for "Enter global resource serialization" has also been revised.
- The revised article is available in the PDF on the z/OS Hot Topics website:
thank you!