



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*



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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.

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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

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?





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8/11/2015

So I decided to make my own:



ZNEXTGEN BALL

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

8/11/2015

SHARE
in Orlando **2015**





MA's Favorite Meme



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!

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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

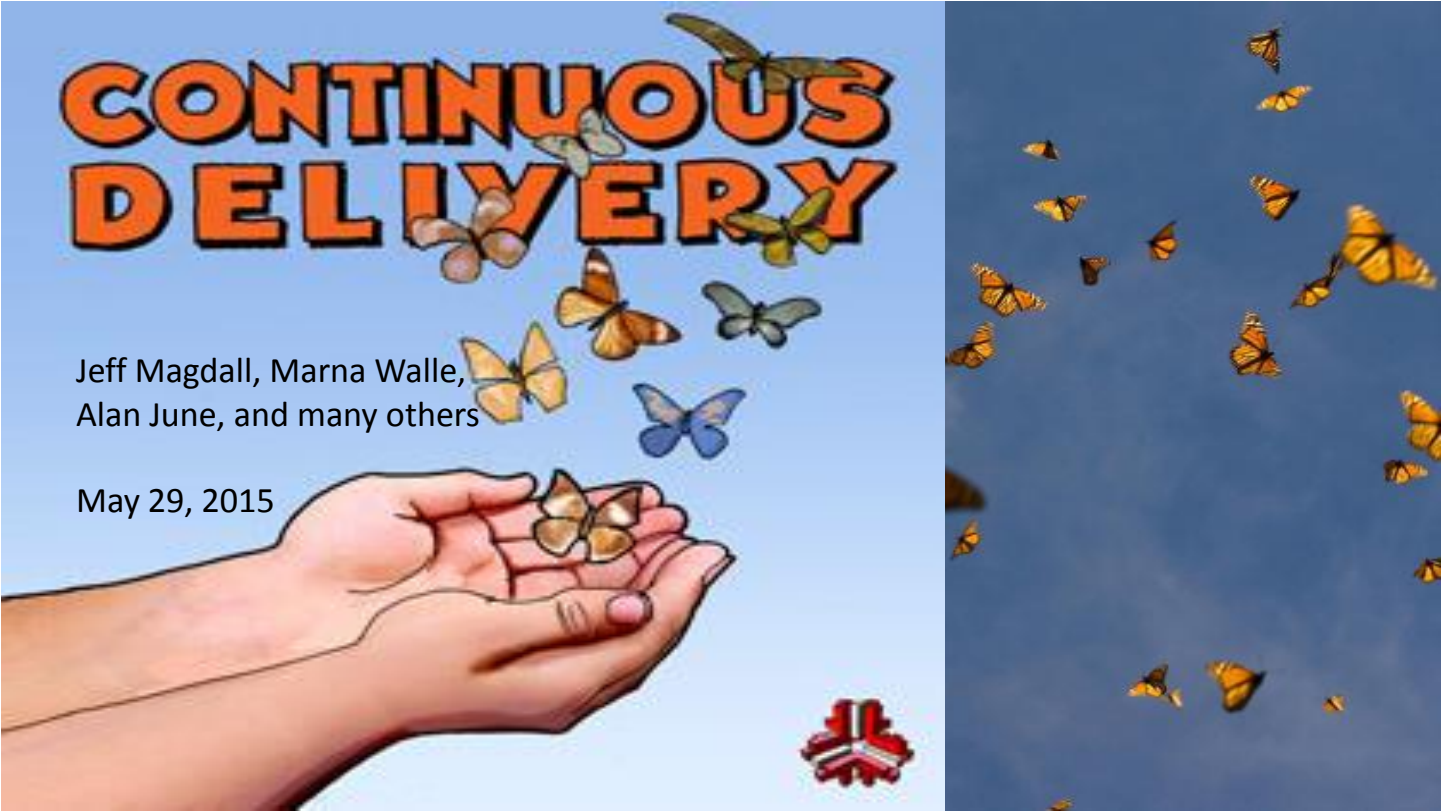
- **Introduction : z/OS PDT Leader**
- **Continuous Delivery**
- **Secure Engineering**
- **z/OS 2.2 Pre GA....**
- **SHARE Requirements**
- **Reddit AMA session**

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

GA
3Q15



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

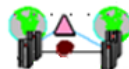
- Capture commands; recall commands
- Turn SDSF actions into REXX execs
- Build/run REXX execs
- Annotate commands.



Economics

- Part of SDSF processing is now zIIP eligible

4Q15



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.

SoD



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

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

**z/OS V2.2
3Q15**

Automation and productivity

- 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

4Q 2015 **Additional systems support and improved usability**

SoD **Gain deeper insight into multiple system resources**

- 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



SDSF Product Update for z/OS 2.2

4:30
Today

SHARE Orlando, Session 17432
Monday, August 10, 2015



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Written by Chip Wood

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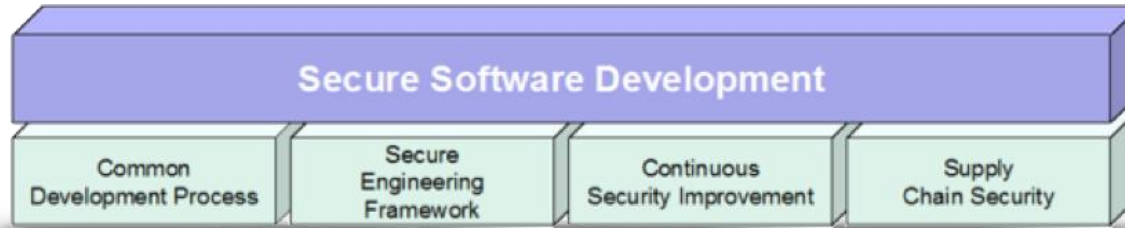
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Secure Engineering Practices



- ❖ 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

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The Redguide: **Security in Development: The IBM Secure Engineering Framework** is available on IBM Redbooks: <http://www.redbooks.ibm.com/abstracts/redp4641.html?Open>

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



Security/Integrity Service...

- 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 HOLDDATA (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
 - CVSS/V=(AV:L/AC:L/Au:N/C:C/I:C/A:C/E:ND/RL:OF/RC:ND)

- References:
 - <http://www.first.org/cvss>
 - Frequently Asked Questions document:
 - <http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ST&infotype=SA&>



Soldier of Fortran @mainframed767 · May 1

Had an amazing time @ibm this week.
Lots of smart people there, really
awesome frank discussions about security



z/OS 2.2 & Pre General Availability ...

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)

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

ISVs supporting z/OS 2.2 announce



Complete your sess

onli

Orlando

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

File Edit View History Bookmarks Tools Help

I Am A, where the mundan... x +

https://www.reddit.com/r/IAmA/

Meetings Faces IBM Verse Communities BluePages GOM Sign-on Logging | Calendar View My LastPass Vault Project Exec / Project ... IBM

IamA manager at KFC AMA!
 RESTAURANT / HOSPITALITY submitted 4 hours ago by verpiessich11
 LIVE 1129 1791 comments share save hide report

Iama Andrew Zimmern AMA!
 ACTOR / ENTERTAINER submitted an hour ago by andrewzimmern
 LIVE 396 comments share save hide report

We are the IBM z/OS development team. AUA!
 TECHNOLOGY submitted 2 hours ago * by AnthonyGiorgio Z/OS ZMANAGER SOFTWARE ENGINEER [F]
 LIVE 94 212 comments share save hide report

Andy Daly here, of Comedy Central's Review.
 ACTOR / ENTERTAINER submitted 33 minutes ago by TVsAndyDaly
 LIVE 135 comments share save hide report

CISA, a privacy-invasive "cybersecurity" surveillance bill is back in Congress. We're the privacy activists trying to stop it. AMA
 TECHNOLOGY submitted 1 day ago * by JaycoxEFF EFF
 5895 908 comments share save hide report

IAmA ambulance driver AMA!
 HEALTH submitted an hour ago by ghsanie10
 LIVE 36 comments share save hide report

I am Son of Havoc from LUCHA UNDERGROUND on El Rey Network. AMA!
 ACTOR / ENTERTAINER submitted 20 hours ago * by SonOfHavoc
 285 299 comments share save hide report

[AMA Request] Norm Kelly, City Councilor of Toronto

11 Highlight All Match Case 1 of 3 matches

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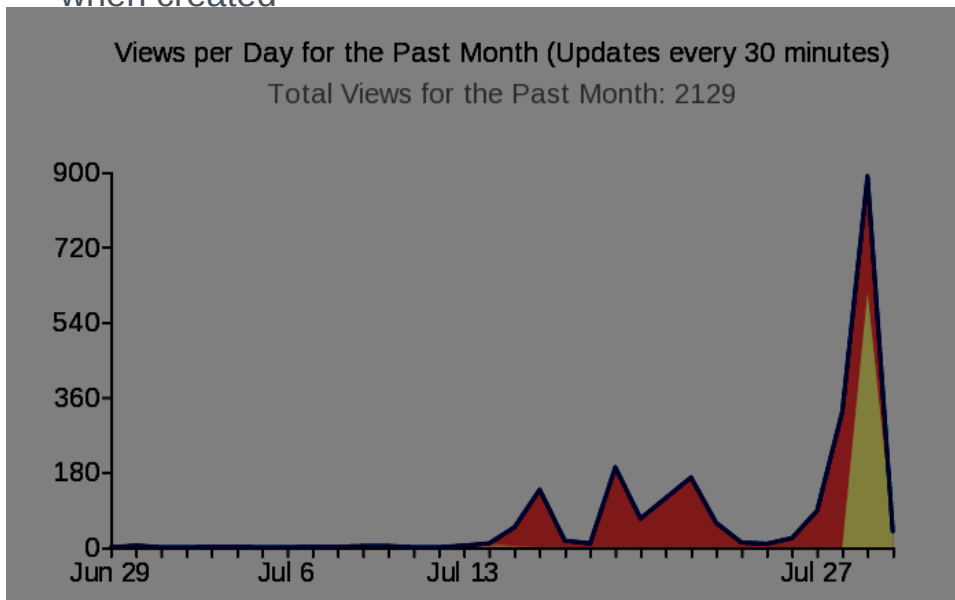
		Person	Description
30 Jul	11am	IBM z / OS Development Team	IBM z / OS Development Team
30 Jul	12:30pm	Andrew Zimmern	TV Personality, Chef & Writer
30 Jul	1pm	Andy Daly	Actor/Writer
30 Jul	2pm	Nichelle Nichols	Actress, singer and voice artist
30 Jul	4:30pm	Michael Coates & Jim Manico	Global Board Members, OWASP



Metrics



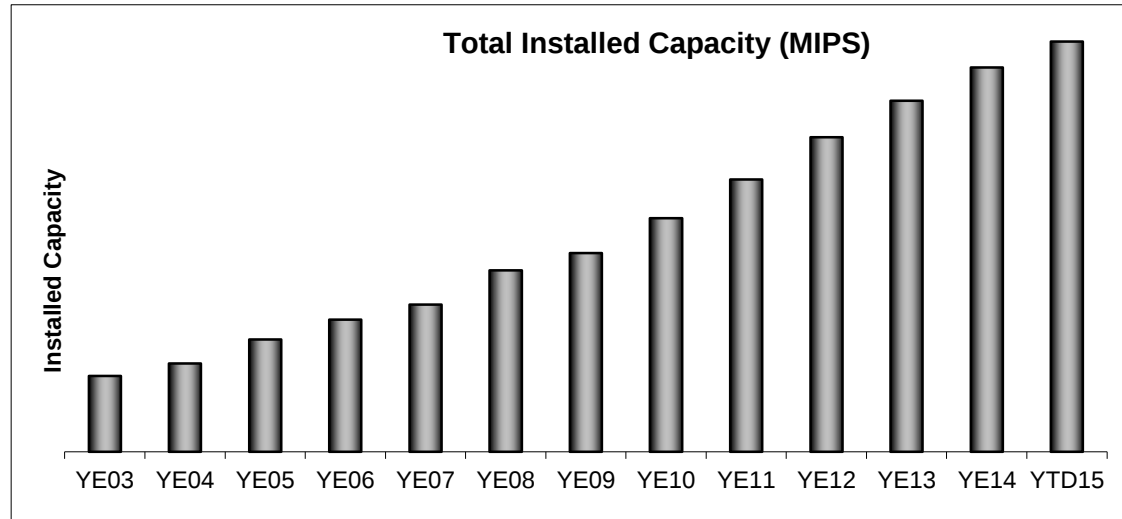
- Snip ibm.biz link clicked 2000+ times
- Initially pointed to MainframeInsights page, redirected to AMA thread when created



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IBM zSystems Momentum (1Q15)

z Systems Total Installed Capacity



318

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

7,600+

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

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IBM Poughkeepsie
jshebey@us.ibm.com

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24th Edition

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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

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When using ISHELL to
set some permission **bids**,
they are not getting
picked up.

z/OS Soap

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

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)

<https://www14.software.ibm.com/webapp/set2/sas/f/redAlerts/home.html>

- **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

Release	z900/ z800 WdfM	z990/ z890 WdfM	z9 EC z9 BC WdfM	z10 EC z10 BC WdfM	z19 6	z196 w/zBX	z11 4	z114 w/zBX	zEC1 2 zBC1 2	z13	End of Service e	Coexis t with	Software Support Services for z/OS
z/OS V1.10	X	X	X	X	X	X	X	X	X		9/11 ¹	1.12	9/13 ¹
z/OS V1.11	X	X	X	X	X	X	X	X	X		9/12*	1.13	9/14 ¹
z/OS V1.12	X	X	X	X	X	X	X	X	X	X	9/14*	2.1	3*
z/OS V1.13	X	X	X	X	X	X	X	X	X	X	9/16*	2.2	3*
z/OS V2.1			X	X	X	X	X	X	X	X	9/18*	2.3	3*
z/OS V2.2				X	X	X	X	X	X	X	9/20*	2.4*	3*

Notes:

WdfM – Server has been withdrawn from Marketing

- 1 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.
- 2 See IBM GTS services for additional fee-based extended service
- 3 Optional extended service is planned to be offered

Out of Software Support Services for z/OS support⁴

Defect support provided with Software Support Services for z/OS

Generally supported

Planned Release

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

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

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

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

Release	Coexistence-Migration-Fallback
z/OS V1.13	z/OS V1.11 ¹ , z/OS V1.12 ² , z/OS V1.13 ³
z/OS V2.1	z/OS V1.12 ² , z/OS V1.13 ³ , z/OS V2.1
z/OS V2.2	z/OS V1.13 ³ , z/OS V2.1, z/OS V2.2

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.**
 - Refer to Software Announcement 215-006, dated January 14, 2015
- You should take steps now to verify your system setup using the Connectivity Test website to verify your system setup at
 - <https://www.software.ibm.com/webapp/iwm/web/preLogin.do?&source=cbct>

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 Io 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

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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.

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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 (**CFLCRMGM**) 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

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White Paper



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in Orlando **2015**



IBM z Systems®: Performance Report on Exploiting SMT for SAP Application Servers on z13®

- **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.

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White Paper



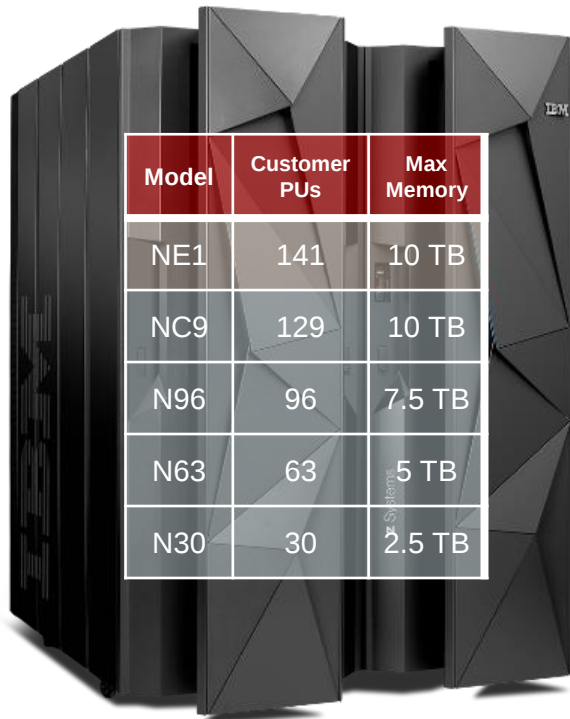
SHARE
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Agenda

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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 spares designated per system
 - Dependent on the row model, up to 30, 63, 96, 129, 141 PU cores available for characterization
 - Central Processor (CPs), Internal Coupling Facility (ICFs), Integrated Facility for Linux (IFLs), IBM z Integrated Information Processor (zIIP), optional - additional System Assist Processors (SAPs) and Integrated Firmware Processor (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 12 TB for the system and for LPAR (SoS dependent)
 - 4TB per LPAR – z/OS 2.2, z/OS 2.1 (SoD), 1TB per LPAR - z/OS 1.13 & z/OS 1.12
 - 96 GB Fixed I/O, standard
 - 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...

Application Development

Web Enablement Toolkit, EU ordering rules for Unicode, ISPF improvements, DFSORT™ Date Functions, Enhanced RESTful data set and file APIs, Parallel Batch Scheduling, Improved JES3 symbol and JCL support, ...

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, ...



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

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, ...

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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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

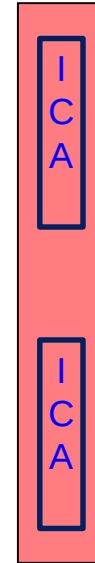
- Operating Systems status
- Washington Systems
- ❖ Center Flashes
- Announcements
- Parallel Sysplex™



81

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/>



ICA SR



z/OS Hot Topics

Learn about key z/OS topics and features

- 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:
<http://www-03.ibm.com/systems/z/os/zos/library/hot-topics/hot-topics.html>



thank you!