SHARE 2025 Washington, D.C. February 23-28, 2025

By Ed Webb of SPARTA
Held at Gaylord National Harbor Resort, National Harbor, Maryland

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SHARE Association Update
Strategic Plan 3-5 year plan is Approved
Volunteer Task forces in progress
SHARE Ambassador program
Increase students attending SHARE Conferences
New partners in STE (SHARE Technical Exchange expo)
Women in IT and Veterans in IT groups at SHARE

Purpose positive impact for mainframe community
Bring together global mainframe community for knowledge sharing, …

Mainframe Skills Council Update with IBM and other Partners
32 member orgs
12 countries
52% HQs outside USA
Good mix of vendors, customers, education , associations
Goals
Vibrant Mainframe talents
Career Awareness
Multiple Cultures
Learning paths and competency frameworks

24Feb2025 Monday

SHARE Opening Session and Keynote

SHARE Cleveland Aug17-21 Hilton Cleveland Downtown
Registration is Open Only for Alumni (that is, SHARE DC attendees) with a special rate available thru 24Apr2025
21Feb2025 call for proposals open
Encourage user speakers or joint session with vendors
New products or update should focus on how users are applying new product/feature
2 director at large positions are open for election in August

Mainframe are efficient contributors to worldwide IT
Rocket Software - Phil Buckellew and Pruneet …
800 billion lines of COBOL code
92% apps are strategic, 54% increase use in next 12 months
Modernization without disruption
AI is important today, 79% IT execs see Mainframe as essential for AI-driven innovation
71% cyber incidents involve use of stolen or compromised credentials
ESMs (External Security Models? (RACF/ACF2/Top Secret) are not enough

The Future of Work by Tom Koulopoulos
https://tkspeaks.com LinkedIn.com/in/tkspeaks
Smart phones changed behavior

Era that began with the dawn of human intelligence will soon be over
AI hard part is predicting future
Each decade use of computers has gone up from 1000 in 1960 to 10,000,000,000 today
By 2100, 1x10(21) more computers than grains of sand on the planet
iPhone 16 is 400m Eniacs of 1960??
Data center energy use is growing exponentially
What will future look at?
Building tools to help us predict the future - maybe building a species
Value Axis change - example iPhone disruption
AI automation versus Autonomy/Agency (agentic AI) will explode in next 24 months
Agentic AI intelligent automation - digital workers
Artificial super intelligence ASI
Ownership>Product-Experience>Strategy
Digital ecosystem, economies of scope, risk is distributed
Challenge of Trust
Next 5 years we will not believe anything that we see hear or write or see
visit HeyGen interactive for video chat
By 2050 10x fewer vehicles because of autonomous vehicles
Embrace AI as a collaborator

z/OS Core Tech Opening and Keynote

Critical z/OS APARs

By John Shebey III of IBM
>>>> OA66790 System SSL HIPER/PE/PERVASIVE with AT-TLS without crypto cards activated. RSU2411
>>>> OA66647, OA66785 Share File System Sysplex RSU2412 3.1 and 2.5

Red Alert new DNS hostnames and IP addresses for IBM Support

Switch by 10Mar2025

Support recommendations

Subscribe to Red Alerts, use enhanced HOLDDATA, Use IBM Z Security Portal to get HOLDDATA for security APARs

z/OS Futures - z/OS Next and ecosystem

by John Petreshock, IBM z/OS Principal
See Tuesday 25Feb2025 keynote for more info about z/OS Next, and Thursday Lunch and Learn (LNL) about zNext
Fuel innovation and growth, transforming and automating of efficiency (more efforts around simplification), and securing the most important data
z/OS V3 has start of AI, …
Support for new Telum II & Spyre chips in new Z hardware
Infusing AI throughout stack over time
3.1 AI has Explainability, Cloud Data Access, EZnoSQL
zCX 2.0 removed CHF requirement last week - 18Feb2025
z/OSMF improvements for data set and file search
IBM z/OS Change Tracker has new UI in z/OSMF
IBM Threat Detection for z/OS (TDz)
AI-infused z/OS
Key AI infrastructure and tool support,
AI-driven guidance, recommendations and productivity,
AI model decisions explainability,
automation Armed with Intelligence
z/OS Management
Simplified PARMLIB Configuration
z/OS Management optimization and simplification

- Workload Modernization
  - CHF [container hosting foundation] elimination (zCX)
  - zCX hardware currency and exploitation
  - zCX sysplex distributor support
  - Language Support
    - Semeru (java) 17 & 21 support
    - Python available at no charge and zero S&S with z/OS (July 2024 announcement)
- Data Serving
  - Data modernization
  - Avoid data set out of space (next release)
  - Hybrid cloud data - write to cloud via APIs
  - Data fabric
- Security
  - AI-driven security (TDz)
  - Quantum safe
  - Expanded data set encryption
  - RACF JWT advancement
  - SOD: anti-malware for IBM z/OS
    - Anomaly detection available with TDz
    - Future is quarantine support
    - NIST nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-53r5.pdf
  - Emerging regulations PCI DSS 4.0, DORA with TDz support
- Foundation support
  - Constraint relief for 64-bit virtual memory applications
  - Assembler skills reduction - remove exits and add policies (or not)
  - Deprecations and Removal of unused code and options
- Simplify Core principles
  - Consolidation, standardization, removal, education
  - Watsonx Assistant for Z
- OpenTelemetry (OT)
  - Cross-Z platform initiative including all OS and subsystems including z/VM
  - App monitoring end-to-end
- z/OS Sponsor User Programs

What's New in z/OS 3.1: DC Edition (Session 70691)

By Steve Warren and Marna Walle

z/OS 3.1 with CD (Continuous Delivery) 4Q2024 update
AI https://www.ibm.com/support/z-content-solutions/ai-infusion-into-zos/
IBM Synthetic Data Sets (1Q25) for AI Training - see Wed. Session
zCX Sysplex distributor, zCX foundation for Red Hat OpenShift
z/OS Containers Platform (zOSCP) 5655-MC3
  Unpriced product
z/OS 3.1 functional dependency moves to Semeru 21 on March 31, 2025
  z/OS 3.1 Planning for Installation
  FIXCAT IBM.TargetSystem-RequiredService.Semeru.**
ISPF Enhancements
z/OSMF Desktop Productivity Enhancements
  PARMLIB Syntax Validation REST APIs (38 members supported)
  CF Structure Sizer (in CFRM Policy Editor and Sizer)
Hot Topics Blog…
SDSF (priced)
  Module Fetch Monitoring
z/OS Change Tracker (priced) now includes compare resources
lots and lots more ….

Tale of Two Mainframers

By Anthony DiStuaro and Liat Sokolov, BMC

“By 2030, AI assistants will be the unseen force behind Mainframe operations - your copilot and autopilot”
Generative AI and Smart Assistants
App developers challenged to understand old code, perhaps COBOL
Mistakes may have significant impact
System Programmers challenged to troubleshoot, to secure systems against new threats
“The primary challenge with Mainframe transformation is in overcoming the evolving workforce demographics, outdated practices and workflows that hinder this effort.”
Demographic shift is 23% decrease of experts with 20+ years of experience and 14% increase of experts with 10 or less years

AI Assistant

AI agent that use AI to perform tasks, answer questions, and assist with various tasks
NLP [Native Language Processing], automation, info retrieval, …

BMC AMI Assistant

Advanced AI Tech Stack LLM, goal-oriented
AI needs to be Where users are (seamless in workloads and tools, not on another platform), in the moment (answers now, not later), cater to all skill levels
Goals
Preserve institutional knowledge, build knowledge-base
Instant answers, contextual insights, unified knowledge
Infuse with your institutional knowledge with BMC-provided
Adjust to your expertise level over time
System programmers - quick system lookup, faster issue resolution, expertise retention
LLM is large language model
SLM is Specialized language model
Tuned for job or organization
Open system - use BMC model or another LLM model
Accuracy, cost, latency, customization = performance
“The prompt, the context, and the content”
Prompt, history, system prompt, user persona, product data, domain knowledge (relevance high) whereas general GPT only have prompt and history (relevance low)
Hybrid AI - combines rules-based with machine learning
Generative AI delivers reliable, actionable solutions for modern Mainframe operations
AI Agent as Domain Experts - virtual subject matter expert tailored to your domain
Autonomous or semi-autonomous software entities to perform specific task or solve problems and use simple rule-based system to complex, learning-based systems that adopt and learn over time
BMC products stay as they are
BMC AMI platform
Foundation - BMC existing products
Transformational Layer - AMI platform
Operational Layer - AMI AI Agents
Intellectual Layer - AMI Assistant umbrella for BMC AI solutions going forward
Extend COBOL, PL/1, JCL and Assembler Programs
Simplified code explanation and paste as comment in code
Ops Insight - GenAI-powered problem root cause analysis
Key Take Aways
Leverage data, insights, intelligence from existing AMI products
Your AI, your rules - use your LLM or LLM provider
Augment AMI intelligence with your own Knowledge Base
Automates tasks with little or no human input
….
”generative AI is not just about creating something new, but about capturing what was once impossible to

express”

What’s New in z/OSMF?

By Hiren Shah and Fiona King, IBM

93% systems running z/OSMF, plug-in installs increasing
z/OSMF Guild Community. IBM.biz/zOSMFGuildHome
3rd anniversary of Guild, 2700 registered members, 35 sessions, 476 registrations per session, 275 live participants average
z/OSMF Plugin Portfolio / Directory
  IBM.biz/zOSMFPortfolio lists all 35+ plugins

Modernize z/OS Daily operations
z/OSMF Desktop enhancements (PH62589)
  More data set and member info, compare uncataloged data sets
  Job output has additional attributes for jobs submitted, started, ended
Workflow file template (PH56619)
  [step level control attribute=true] dynamic resolution for file template - wait until workflow being executed to process
    Step owner needs read access to “file template”
    Cannot use “runAsUser” function
REST API Enhancement (PH60122)
Incident Log Enhancement (PH60035)
  Removing file that contains password for incident log processing of diagnostic data
PARMLIB Management (PH56207) delivered in 2024
  Validate PARMLIB members (38 at this time)
AI Control Interface for z/OS
  AICI plugin
  AI System Services (separate order yet free) required
  PH56709 visual simulation to help user trust AI
WLM Policy Advisor
  Analyzes WLM Service Definition - use actual RMF data to determine guidance
Upcoming enhancements (z/OS Next)
  Remove CIM dependency (Incident log, Jobs API, Capacity Provisioning)
  Java 21 support, also APAR for 3.1

MVS Logger: Push Your Logstreams Up the Stream

By Mike Shorkend
System macros
  IXGCONN etc, sample IEAMDBLG in SAMPLIB
logstreams
  OPERLOG, LOGREC, SMF, Health Checker
  CICS, IMS, VSAM Logging
  3rd party products
Two kinds of logstreams
  Coupling Facility structure (not DASDONLY)
    CF structure as interim storage
    shares log stream between LPARs (such as OPERLOG)
  DASDONLY
    Only one LPAR
    Staging data set usually required (backup for local buffer copy for recovery)
IXCL1DSU utility to format LOGR data set
Add LOGR data sets to COUPLExx in PARMLIB
IXCMIAPU utility to define LOGR data set to policy
Parameters

LSR make a big number total number of logstreams
LSTRR big number LOGR structures
DSXTENT provides addition space for offload data sets
SMDUPLEX allows CF to handle Duplexing

Programming Mainframe Assembler Today and Future

By Aman Dwivedi, BMC

Introduction to Mainframe Assembler Programming
Jan. 2025 - $112k-142k salary about $53-68/hour
Assembler Programming: A Timeless Necessity
performance optimization, system-level access, legacy system maintenance, reliability and stability
Assembler's Role in Today's Industry
Finance, government, transportation
The Challenges of Mainframe Assembler Programming
Skills shortage, difficulty maintaining legacy systems, modernization v. Legacy support
The Future of Assembler Programming
Not disappearing- ongoing demand, training and succession planning, user prompt to generate MVS Assembler Code in AI tool in-house/external, Assembler Code Explain tool
Automation Advancements and MVS Assembler
Automation in legacy system management, AI-assisted code maintenance, greater integration with Cloud and DevOps pipelines, automated error handling during assembling and link edit process
High Level Assembler toolkit has explain function
The Program Understanding Tool (ASMPUT)
Integration of Assembler with Emerging Technologies
Assembler's Role in the Cloud, AI and Assembler, Use of AI to Code Explain
Solutions for the Skill Shortage
Mainframe education in universities and technical programs
Mentorship programs pairing pro with new talent
Assembler-focused conferences and communities
Online learning platforms with hands-on workshops
Internal training to up-skill existing staffs
Partner with Mainframe vendors for skill development initiatives
Conclusion

25Feb2025 Tuesday

SHARE General Opening

Meredith Stovall, IBM VP Z Ecosystem
AI on Z is energy efficient relative to other AI systems
Developers reduce time to understand and document code use in generative AI
AIOps helps with Operations
Telum II and Spyre announced in late 2024
April 8, 2025 IBM Z Day - register at IBM booth and see Telum II chip

Dave Jeffries, BMC and xxxxx, Broadcom
Generative AI captures and rebuilds skills that are retiring every day
AI is a Productivity multiplier
AI is challenged by Z specific actions and languages
AI is missing what's in your head, experience, what other data does it need to provide a more appropriate response
Code assist and code explain and testcase assist that is Z-informed
Choosing AI model requires attention to security and regulation
"What gets us into trouble is not what we don't know. It's what we know for sure that just ain't so."— **Mark**

Twain
write it down - if not shared, you have job security but cannot train AI or newer employees
for example, Turn on transcription on online calls
Work together between Z and distributed

AI Framework Overview and AI-Infused WLM Batch Initiator Use Case

By Anastasiia Didkovska, IBM Germany, Product Manager for AI on z/OS
16 attendees
AI integrated into our lives - suggested words or phrases, map routes
z/OS needs 2-7 years to get skilled on Z, AI helps

LLM generative AI creates 300 tokens per second instead of a human's 1 token per second (token is a character)
IBM strategy is simplify management of z/OS and its offerings by augmenting them with trustworthy AI
z/OS 3.1 AI Framework for IBM z/OS supports various components of z/OS
Workload manager (WLM) AI-powered predicts upcoming batch workload and starts initiators to be ready fro increased workload
WLM Batch is first brick in building AI on Z
Sponsor users and IBM working on new ideas
five components
Data collection
AI Model Server - training, deployment
Not LLM
z/OS AI Base - new core component
Communicates with Model Server and with z/OS functions
z/OS AI interface (AI Control Interface)
Use Cases - WLM Initiators, future use cases
AI System Services [AISS] for z/OS (5655-164) cost free solution
zCDP and MLz Core and z/OS Base PID
Requirements- HW z14+, z/OS 3.1, AISS for IBM z/OS PID, Internal or external Coupling Facility (CF)
z/OSMF AI_Framework_Config Workflow to install instrumentation for AI services

Current WLM reacts to workload to start more batch inits, and then reacts again until workload goals are met
Now with AI WLM knows that a workload usually occurs when and should start more inits before need
Business importance 1 (most) 5 discretionary
WLM Goals: response time goal, execution velocity
Achieved Execution Velocity
System use, executable work units running in parallel, delays
For AI, adds generated delays into WLM algorithm
Performance Index (>1 eligible for help, <1 potential donor)
needs 4 weeks of SMF Record 99.2 data to train (for year end, need 4 years of data)

WLM Use cases
Train by service Classes
after training, AI disabled mode
AI not helpful on random workloads - use simulation mode
Future use cases
Sponsor users, beta sponsor user, data sponsor user
Summary

Upgrading to z/OS 3.1 part 2 of 2: Technical Actions

By Marna Walle, mwalle@us.ibm.com
23 attendees plus speaker (Ed W is chair)

==>> Upgrade Workflow is full set of technical actions, more than what's in this presentation

IBM z/OS Change Tracker (CYGSTC)
ZDNN path supports access to Telum chip
  Fixed 2.5 directory name error in 3.1
  usr/lpp/aie/IBM
Semeru 21 (Java) becomes z/OS 3.1 functional dependency on 31Mar2025
New Health checks (7 on 2.5 for 3.1, 11 on 2.4 for 2.5)
  Removed 10 checks from 3.1
Portable Software Instance (previously ServerPac)
Release boundary - default changes
  Sysplex SSD format, non-executable PARM data, SDUMP Optimize option removed, ALLOCxx, OSPROTECT changed
Recommend ASVT above 16M - change setting after first IPL of 3.1

IOF Securely enabling SYSPLEX-Wide Services for Non-Authorized Users

  By Jay Hall, Fischer International
09 attendees
IOF developed in late 1970s by Triangle Systems, sold to Fischer International in 2024

Goal - Expand IOF access beyond JES2 Multi-Access SPOOL to seeing jobs throughout the Sysplex
IOF using XCF for messaging (only base Sysplex required and included in Parallel Sysplex)
  GROUP SERVICES define members to XCF
  Communication service sends signals
XCF Message Protocols
  task must be in authorized state to send and receive messages
  Not guaranteed delivery of messages
    Messages up to 61k in size but now 120M
  Delivery of messages in order they are sent is an OPTION
  Messages can be sent in parts with separate buffers - important for performance
  SYSPLEX GROUP dedicated to IOF, server via XCF, and clients connect to local service using XMEM
SIF is IOF identifier registered with IBM
    1 IOF address space per z/OS image
    Sysplex group dedicated to IOF for servers only, clients connect to IOF server
      Use XMEM within system between IOF and server
      For other LPARs use server to server via XCF
      95% coding complexity is on server side, client is just call
    designed to support state-full server
    Excellent performance
    One drawback is high code complexity in server
    Other drawback is same security on all members of the Sysplex
      That is, all members must Share same security manager database
IOF Sysplex function implemented in REXX

JES2 3.1 Update

By Tom Wasik of IBM
20 attendees

Register for April 8, 2025 https://ibmzday2025-se.bemyapp.com

Job Resource Limits
  Enforced with WAIT (or optionally NONE or FAIL), new default limits
  Can be customized
$JD STATUS is general answer to why JES2 is not working, not running

Job Resource Groups [RESGROUPS] - new in 3.1
  Now JQEs, TGs, JOEs, and BERTs limits and actions can be set for a Resource GROUP - monitor only in 3.1

In z/OS Next - RESGROUPS can have percent and actions
SYS_JOBTOKEN binary identifier to correlate multiple instance of the same job, set symbol to hex value and internally stored as 8 byte binary
New JES Symbols SYS_HOLDUNTIL and SYS_DEADLINE are informational in this release but may be useful in future releases
Policy in z/OS Next release
JCLEvaluation (sixth policy type)
After JobCreate policy and before JobInput policy
Primarily to allow examination of each JCL statement
Access to JCTUser and JCTUseC to access user-defined fields
z/OS Next release
ASCB in 31-bit storage
ASCBV31=YES in next release
SYSDSN ENQ protection in next release
CKPT and SPOOL data sets are now protected
JES2 $TCKPTDEF can allocate SPOOL and CKPT2 without ENQ
New $ACTIVATE level
Requires SPOOLDEF ADVANCED_FORMAT to be ENABLED
CTENTS JQY, JQS, DRX, DRTM plus optional CTENTS
CKPT must be large enough for all CTENTS
New $VERIFY command
Support JOBQUEUE, OUTQUEUE, BERTS
High CPU overhead
REBUILD= to attempt a queue rebuild (use only when level 2 told you to run this command) - warning some jobs may vanish
SPOOL data set browse
Support SUBSYS= JCL DD statement and then read spooled data set

z/OS and Stack Product upgrading and Installation: maneuvering Between the Interactive Tools Involved

By Marna Walle, IBM
20 attendees

Customers must use a z/OS Upgrade Workflow and a z/OSMF Portable Software Instance so no upgrade book is needed to install software

Goals

Use the right tools to simplify process
Know how to position your software instance
Marna's Musings Blog entry "Surfing the Flows" - how to use z/OS Upgrade Workflow and the Software Management Portable Software Instance (PSI) Workflows

List of interactive activities related to installing zOS stack software

Shopz
Define contents of package
Built into a Portable Software Instance
z/OSMF Software Management does
Install
End of Service
z/OSMF Software Update
install PTFs onto SMPE-managed products
z/OSMF Workflow
Guided interface to step through provided definitions to perform some task
Many purposes: z/OS and Db2 upgrade, configuring zCX, customizing and verifying your z/OSMF PSI, …

Order of recommended usage

- z/OS 3.1 Upgrade Workflow on existing system (say 2.5)
  - Provided by PTFs on earlier (pre-z/OS 3.1) systems
  - Workflow located in /usr/lpp/bcp/upgrade
  - In and out of this Upgrade workflow pre-install, pre-IPL, post-install
- Shopz
  - order release 3.1
    - Use current SMP/E inventory to start the order
  - Definition: Product ServerPac (any order without z/OS)
  - If not licensed, have to go to Techline for purchase and licensing
    - If zero cost license and S&S, then the Techline goes fast
  - ZOS-I-2828 IBM User Idea (requirement) to install small product PSI into existing z/OS PSI
    - Could use separate Target Zones within same Global Zone (see Objectives in deploy)
    - IFREQs can be an issue
- Software Management
  - Deploy PSI into your environment
  - automatic cross-zone blog entry
  - Software Management can be used to add new targets if needed
  - Workflows for your order and post-deploy
    - YOURORDER
    - POSTDEPLOY
      - Workhorse of post-install process
      - Do NOT Skip these steps:
        - Step 1 Collect config options
          - Create new or use existing operational data sets
        - Step 17? Update default data set names
        - Step 18? Mount file systems and create BPXPRMFS member
        - Step 40? IPL manually
        - Step 41? Save variables to a property file for VERIFY and for z/OS Next
          - (like earlier ServerPac SAVE CONFIG function)
          - HLQ.software_instance_name.PROPVAR.date or similar standard name
    - Avoid “hand editing” the generated Software Management jobs
- Resume Workflows for upgrade
  - Before first IPL steps
- IPL
- Resume Workflows for upgrade
  - After first IPL steps
  - Post-deploy steps
- Optionally use Software Management Workflows
  - VERIFY

Overview of install
z/OSMF plugins
Diff between workflows…

26Feb2025 Wednesday

A Guide to Creating Your First z/OSMF Plugin

By Hiren Shah and Rolando Perez, IBM

z/OSMF Plugin Portfolio / Directory
IBM.biz/zOSMFPortfolio listed all 35+ plugins

A Plugin is an extension to z/OSMF to add functionality to the web-based interface for managing z/OS (a web app)

User and commercial plugins
  z/OSMF Ansible Collection and z/OSMF Core Plugins, Workflows and Desktop, Zowe CLI
z/OSMF platform REST APIs
Base layer z/OS

Plugins are highly versatile
  single page plugins (Diagnostic Assistant)
  To a plugin with hundreds of of screens and dialogs (such as Software Management)

IBM Carbon - open source design system that provides reusable UI
  JavaScript skills required
  Common look and feel with newest IBM plugins
  https://carbondesignsystem.com
  https://builder.carbondesignsystem.com

Leverage z/OSMF
Integrate directly into z/OS simplification platform

User>browser (z/OSMF)>https>z/OSMF Server<>data>USS

Skills
  JavaScript for front-end development (angular, IBM Carbon)
  HTML & CSS for UI
  z/OSMF REST APIs calls to z/OS services
Tools
  VS Code Editor (writing and debugging code)
  Node.js (testing on workstation before deploying to z/OSMF)
  NPM (Node Packaging Manager) tool for managing JS package

Pre-reqs
  Check if node.js installed
    Node -v (need v18 or higher)
    Nvm current - v18 or higher
Primer - sample Angular application to build web app
  https://carbondesignsystem.com

main building blocks for angular application
  Module, component, template, style, service

Build z/OSMF plugin
1. Develop web-based app and porting documentation
2. build web app and start locally to verify and correct
3. Store app and doc in UNIX file system - set 644 for files and 755 for folders
4. Create a property file in UNIX file system that defines parameters required for z/OSMF to import and configure your plugin
5. Use z/OSMF Import Manager task to import property file
6. Setup security for plugin, refresh security product and restart z/OSMF server
7. Run plugin from z/OSMF UI
8. To update external plugin, remove it and import again

Sample z/OSMF External plugin uses REST APIs, get variable value from user, passes data to REXX EXEC, show system info, stop TSO session, cleanup and exit
GitHub.com/IBM/IBM-Z-zOS and download everything then expand (unzip) the file
  Note: Current sample is built for angular 14 so sample needs to be “fixed” - a fix coming
  NPM Start runs the app to review output screen
  Put REXX exec into z/OS data set

DICe-y Workflows: Managing Digital Certificates on the mainframe from Start to finish
By John Bay and Katie Juhala, Broadcom

Certificate and Keyring Administration (ESM [external security manager] steps to enable SSL/TLS)
External or internal Certificate authority
External Certificate Authority
- Generate personal certificate
  - RACDCERT or GENCERT
    - Label to refer to certificate later
- Create a Certificate signing request (CSR) to Certificate Authority
- Receive signed certificate and chain and insert/add certificate to ESM database
  - RACDCERT “signed” TRUST
- Create a keyring
  - Create a ring with a name
- Connect required certificates to keyring
  - RACDCERT “certificate” …
- Non-ESM related configuration
  - ESM is depository of info, does not initiate or create the secured function
  - App uses keyring and certificate info

Secure Keyring and Certificate Security
- Keyring access
  - Ring-specific profile checking or
  - Global profile checking
  - READ access for keyring owner, others need higher authority
- Certificate private key access
  - Certify connection to keyring with personal option
  - 1 of these is true
    - Owner of certificate
    - Update access to certificate
    - Or set SITECERT, Do Not Use!
- Digital certificate administration authorization
  - Special Privileges
    - RACF SPECIAL attribute (ESM specific)
  - Granular Certificates Administration authority resource checks
    - Ownership and command specific

Renewing Digital Certificates
- Identify expiration date for certificates
  - IBM Health Check RACF checks
  - SYSVIEW Essentials for any ESM
- Discover revoked CA certificates (CRL)
  - certificate revocation list
  - Online certificate status protocol
- Renewal process
  - Create certificate signing request for expiring certificate
  - Send to CSR for signing
  - External CA signs and returns signed certificate
  - Site inserts signed certificate replacing certificate that was GENREQed
    - EXPORT certificate to secured file as backup before replacement
  - Or a REKEY/ROLLOVER process can be used to keep public/private key pair the same

Debugging Digital Certificates
- Debugging checklist
- Documentation required
  - Server/Client log errors
  - List of the Keyring (ring names and certificates labels are case sensitive!)
    - are all certificates in ring, who owns ring, correct USAGEs specified?

List signing chain RACFDCERT LISTCHAIN
Chain complete, certificates trusted, not expired, PERSONAL key has private key?
Verify Resource Access and violations
R_Datalib Trace
Setup before the task makes call
Turn on trace, S GTF…
SECTRACE example
Look for private key being processed
88/44 is OK, it's just end of file

Web Browsers (such as safari, chrome) only allow one year life of certificates

Configuring the z/OS Container Platform

Session 42772
By Mike Fitzpatrick, Ben Hicks, Paul Gartman of IBM

Evolution of Application Deployment

Apps on top of OS
VMs and run apps on Guest OSes
Containers (apps, libraries and dependencies) on top of container engine on top of Host OS on hardware (lightweight compared to VM)

Containers Overview
Standard suites of software with application code and all required dependencies
Containers are OS and HW specific
Uses facilities provided by underlying OS to run apps in isolated environment
Moving, stacking, unstacking of compliant software easier

Kubernetes overview
Open-source container orchestration framework
Kubernetes architecture
Pod or container runs as a z/OS address space
Deployment of pods
Service - tie set of services to set of pods?
IBM Z Containers
Linux, S390x, zCX….
z/OS only

zOSCP Workflow Overview

/usr/lpp/IBM/zoscp/…. 1.29/ or 1.39/ or 1.31/ and bin/ and lib/
SYS1.SBCZSAMP other data sets
Setup BPXPRMxx and path for zoscp
enable Union file system, temporary filesystem (in memory), PROC filesystem
update PATH environment variable in /etc/profile
Podman Security Setup
Rootless Podman
Reduced permissions for users and containers run with less access
File system setup
Permanent filesystem setup, sharing of Podman filesystem, setup temporary filesystem
Container Files
Does not overwrite existing files
Networking Setup
CNI define and handle network interfaces for containers
Also ZCONTAINER VIPARANGE
WLM setup

ZOSCP can be classified by WLM
Avoid SYSOTHER service class
IVP initial verification program
Build and run Hello World container image

IBM Cloud Container Registry (ICR)
Container images shipped to ICR
Skopeo to copy from ICR
Some images require APF authorization
Policy.json must be updated
Private Container Registry

Kubernetes on z/OSCP Overview
Worker nodes
Control plane appliance [CPA] (locked down)
Pods
Sysplex distributor
Setup zCPA with z/OSMF workflow
…workflows/zcpa_provision.xml
zFS instance directory and VSAM data sets
Classify by WLM
VIPARANGE ZCPA statement
ZCPA Security Setup using BCZSECS2 sample in SYS1.SBCZSMPL
Setup Kubernetes Worker Nodes
Procs for CRIO and kubelet from SBCZSMPL
Set SYMDEF in IEASYMxx with &K8SVER value
Security setup BCZSECS3 in SBCZSMPL
User ids for kubelet and crio and various access rules
Permanent and temporary filesystems
Add to filesystem in BPXPRMxx
Configuration files
CRIO, KUBELET and env for KUBELET
Syslogd
Update config to store CRIO and KUBELET log files or keep them separate
Version Health Check

Deadly Sins of IT Presentations
By Anastasiia Didkovska, nastasia@de.ibm.com

Cluttered foils, too much text, reading off slides
Impact
Information Overload
Too much info that is hard to consume
Too much text on slide causes people to pay too much attention to text, not to speaker
Want focus to be on speaker
Know Your Goal - inform, educate (demo, examples, problems, solutions), inspire (share your emotions)
align goals with people in your audience
Discard unimportant - one deck for your presentation, second deck with details for after-talk delivery
Give time and space - one topic per slide, make pauses to give people time to absorb information (hand out gift cards or treats for questions)
Questions are good, follow up later if your answer is weak
Messy slides
Clarity
A lot of text - change to short paragraphs with visuals
5-6 elements (heading, subheadings, images, text)

- Too many fonts - use templates to simplify fonts, sizing should be consistent
  - spaces between lines and between letters
  - Contrast between focus and less focus area - particularly for tables and columns and rows
  - Consider whether to have headings or not
    - Focus on info text or image
- Too many colors - emotions, less is more, stick to 2-3 colors
- Too busy, hard to read
- Graphics can convey info

Poor structure

- Action
  - What? Share the observation
  - so what? Show impact
  - Now what? Ask for action after presentation
- Persuasion
  - Problem - state the issue
  - solution benefit - show gains
- Inspiration
  - My Story - tell your personal story to engage audience
  - Our story - tell what we all have in common
  - The future - show how we can build future together
- Select what works for you
  - Slideshare website
  - Secret Sauce
    - Story makes presentation more memorable

Aimless facts

- Why are you presenting info? Why does audience need to know this info?
- More data does not mean more impact, include in a story instead
- Ask audience for involvement to help them remember facts

Communication Gaps

- Components - verbal, non-verbal, visual (35%, 40%, 25%)
- Non-verbal by getting out from behind podium
- strategic silence (good for audience, reduce “mm’s”, “ah’s”)

Inform with clarity

Time

Make visually clean
Plan structure
Add engagement
Connect

- Audience has 2 precious resources - attention and time

Time

Plan, Prepare, Adapt

Great presentation isn’t about the slides - It’s your chance to inspire and drive change

Applying PTFs using z/OSMF: What’s New With Software Update

- By Kurt Quackenbush IBM

37 attendees
Software Management is the z/OSMF App to install and deploy software
Software Update is the z/OSMF App to install SMP/E-managed software updates (aka PTFs)
installed software is known to zOSMF Software Management and Software Update as a Software Instance (target zone plus)
UI96759 in May2024 for z/OSMF 3.1 made good enhancements to Software Management

Software Update
Install by Name, or By Source ID, or By Fix Category
SU Process
Prepare Updates>Resolve Holds>verify updates>pre-install summary>install updates>
REWORK value on IBM Updates (PTFs) yyyyddd
Export during update saves to file on your computer, not the mainframe

Make the IPL work for You

By Ray Bowdish, DTS Software

Changed IPL setup to simplify moving from one z/OSMF release to another
LOADxx column specific parameters
Tip: have comment line with column ID to help get specific parts coded correctly
IEASYMxx different syntax rules
Set your system symbol values
IODFxx usually one per sysplex
IEASYSxx - PROG, SSN, SMS, IZU BPXPRMxx, VATLSTxx, …
GRS, PAGE
Do not use APF and LNK - use PROG instead
COMMNDxx optional commands issued during IPL
No JES commands as JES is not up
VTAMxx (VTAMAPPL command processing)
Optional process to use VTAMAPPL to issue commands like JES commands and other
IEFSSNxx subsystem definitions
defined SMS before PRIMARY subsystem statement
IGDSMSxx Storage Management Subsystem
DFSMS CDS, EAV support, PDSE

What's New in BCPii: Resiliency Improvements and …

By Steve Warren of IBM

z/OS Base Control Program internal interface (BCPii)
Allows authorized z/OS applications to have HMC-like control over systems in the process control (HMC)
Set of authorized APIs is provided
Does not use internal network (not TCPIP)
GDPS uses non-z/OS BCPii
z/OS components
Resiliency enhancements
Today heartbeat check periodically
IBM z16 New Event: Shutdown Event
SE in CPC is shutting down soon, orderly reboot or other action
New Display BCPii command
D BCPII,ALL (or CPC or CPC=ALL or CPC ….)
OA62934 implements these new functions
BCPii REST Service
New APIs via HWIREST but old APIs remain but will not be enhanced
IBM Z Hardware Management Console Web Service API
See IBM Documentation>systems hardware>IBM Z>Model z16-A01>Library Overview>HMC Web Service API
HWIEVENT remains the same (for now)

27Feb2025 Thursday

Leveraging Generative AI as a System Programmer or Developer

By Brenna Fernandes, Eduardo Rocha of Kyndryl, Sommya Kameswaran of IBM

Watsonx orchestrated platform

Intro

- Generative AI can create data as well as report on known data
- Agentic AI performs actions on your behalf
- Small Language Models (SLM) trained with less resources
- Large language Models (LLM) trained on larger data sets using more resources
- Retrieval-Augmented Generative AI (RAG) augments with new data after training on older data

Leveraging Generative AI as Developer

- Generative AI use cases for applications
  - Discover, document, convert, (new) develop and manage (future)

1. Turn off autocomplete
   - During chat, gives you more chance to review output
   - Fine tune response
   - Enables to ask questions and learn
   - Write the code yourself to help you learn
2. Turn on autocomplete (some of the time)
   - Repetitive, structured code
3. Instruct AI to behave in a certain way
   - AI model will give responses based on your instructions
   - Control how data is presented
   - Allows you to fine tune how it responds and its behavior
4. Provide as much context as needed
   - Get useful and more applicable responses faster
   - Higher quality responses
   - Less follow up prompts
5. Request evidence and references
   - Helps with research
   - Allows you to learn more about the topic
   - Provides you with material to validate the response
6. Ask follow up questions
   - Allows you to learn more
   - AI still has previous context so you don’t need to explain everything again
7. Confront the AI if something doesn’t add up
   - Not every response will be 100% accurate
   - If you tell AI it’s wrong, it will try again
8. Have AI help you build the prompt
   - “example: ask 5 yes or no questions around this topic to fine tune your responses”
   - Don’t know what you don’t know
   - Better results faster
   - Less need to do previous research
9. Request code snippets
   - Good for quick-start
   - Might be just enough if you’re already experienced

Leveraging Generative AI as System Programmer

1. Early system programmer can ask about how to perform a specific task
   - Ask assistant for overview on task
   - Follow reference link in documentation and validate info
   - Talk to more experienced people for help with new info
2. Load procedures and domain specific data via RAG AI system
   - Extends GAI capabilities
   - Provide easy and quick access to documentation and procedure information
   - Combines relevant info from different sources as ingested by RAG
3. Ask for code snippets
4. Diagnosing errors on z/OS

Use AI to provide explanations
Help with error code interpretation
Recommend course of action
5. Need help with commands that you don't use often
Give AI hint of what you are trying to accomplish and what command to use
Ask questions to deepen understanding and verify command
Give AI context and let it build command for you
6. Use AI with Caution
Never provide internal code to AI without employer permission
If you issue dangerous or disruptive command, it's your ID on the line
When not sure, check with more experienced SysProgs

zGranny personality prompt
z/OS questions

Addressing mainframe skills is a top priority
79% of respondents need mainframe resources and skills to get work done
91% of respondents plan to hire Mainframe talent in next 1-2 years, investing and growing Mainframe IT team
IBM watsonx Assistant for Z
Mainframe experience, reimagined
Make existing staff more productive
"Garbage in, garage out" so be sure models are trained on right data
Conversational AI
Quick and accurate answers to questions about IBM Z domain-specific and your own doc
Integrate with live Z system
Live updates from system and integrate automation with skills
Configurable assistant
Personalize based on business process and job roles
Seamlessly integrate your own doc, processes, and best practices to proprietary questions
Consolidate automation and drive the AI through natural language conversations
Access live information from Z system with an assistant integrated across the Z stack
Benefits: reduce learning curve, increase productivity, increase efficiency
Key user cases
Incident Analysis - integrate with ServiceNow
Subsystems patching - create service ticket, patch and close ticket
Troubleshooting - use chat to explain and run automations to fix it
Operational insights - identify performance issues and solutions
With Slack Integration
Integrated automation

wAZ (Watson Assistant for Z) is RAG for System Z only

Planet Mainframe zRoadshow

By Frank Kyne and Mark Wilson of Planet Mainframe
56 attendees (almost full room)
MW has 23 motorcycles !

Importance of questions and metrics
IMS PH64674 to honor TPIPE max
Never being embarrassed to ask questions
Use PFA to monitor troublesome applications
ETL experiences and lessons
Db2 Table unload with LOCK=YES puts SHARE lock on table being unloaded
"Rows and columns - how complicated can it be?"

unload parallelism on input but only one output, have to hardcode how parallel to be, why not allow Db2 to determine how much to do based on table and output values?
What do you do via FTP? How much data per day? Is data secure? Are they efficient?

Crypto cards and PCI Compliance and other things

Be sure your hardware maintainer ALWAYS checks with your security coworkers before applying any MCLs to Crypto Cards
See Watson Tuning Letter 2021-4 about crypto cards

Interesting APARs

zCX OA66764 and OA66765 deliver zCX 2.0 to remove a license fee requirement
Several pre-reqs, see AD25-0785 announcement letter
See SHARE 2025 DC sessions about zCX
WLM APAR OA66312 (2.5-3.1) delivers Health Check (WLM_SCLASS_SYSSTC)
See WLM for z16 session at SHARE 2025 DC
System Recovery Boost for capped LPAR honors cap on CP speed
Use IEASDBS started task to use SRB at shutdown
OA66790 2.4-3.1 AT-TLS connections terminated - APAR includes recovery information
CF Service Levels for z16 includes new MCL fixes and performance improvements
Not disruptive but you must rebuild structure to take advantage
Quite a few fixes for CF z16, don't rush but don't wait a year
Use automation to report daily CF level for change references
SOD April 2024
FICON connectivity security
Growing use of z/OS Function Registry
Several APARs
Horrible Display Command, keeps asking for more information
Filter OPERLOG messages to speed research
SDSF>LOG O>FILTER MSGID EQ FXE*I to see only E or I or W messages

SHARE Emeritus membership

https://www.share.org/Connect/Membership/Join-SHARE

YAML (Yet Another Markup Language)

Human-readable data serialization language that is often used for writing configuration files, may simplify PARMLIB

z/OSMF Guild

Good source of information about z/OSMF and its Apps

IBM WSC z/OS System Programmer Hot Topics

By Meral Temel, IBM WSC z/OS Technical Engineer

See handout for a wealth of links to z/OS information and tools

Summary of z/OS Recent CD announcements
OA67191 (open) Detect missing directories that could led to mount failures during IPL, commands…
Continuous Delivery (CD) provides enhancements - stay current
Statement of Directions in handout
https://www.ibm.com/support/z-content-solutions/
System Recovery Boost (SRB)
Update parameters for boost support for System Dumps
consider using SRB for dumps. RPBMINSZ dump option needs to be coded
WLM update to use SRB for middleware services
compatibility matrix for z/OS 3.1
https://www.marnasmusings.com/2024/01/beyond-matrix-clicking-your-way-through.html
Use Health Checks
Prepare for Coupling Facility (CF) failures using ARM and other mechanisms

Z Next Preview: Deploy and Capture Value from the New Chipset

By Faezeh Gholami of IBM
Lunch and Learn session

IBM aspires that skills for Z can be used on other platforms
AI revolution is here, Enterprise AI is from IBM, is not public
IBM Z is a full stack offering
ZNext fueling growth with AI, automating and transforming for efficiency, securing the most important data
- 1-4 frames, 4 compute drawers
- Simplified system I/O architecture, significant memory growth, increased I/O subsystem density

Telum II has 8-5.5 Ghz 5nm chips with 10-36MB level 2 cache, 43B transistors, is 2nd gen AI
On-chip Data Processing Unit
- Reduces latency, up to 32 Telum II in coherent SMP system
- Up to 192 PCIe slots, same drawer as in z16
- 4 port FICON other increases
- reduced power for iO management
- Increased I/O subsystem density
- Floor space saving and freaked? reduction

8 cores
- Branch prediction improvements
- Registers increased to 160 from128
- Improved storeback and write

40% cache growth
- 1 for DPU, 10 L2 cache

Improved on-processor AI acceleration
- 24 TOPS per chip
- 192 TOPS per drawer, 768 TOPS per system
- 1 accelerator per chip, but can be shared with other 7 cores
- Support LLM computer primitives
- Supports Int8, FP16 datatypes

AI acceleration on zNext
- Real-time multiple-model AI only on zNext
- Predictive AI inferencing, speed and scale is critical, precision and accuracy
- Generative AI acceptable performance
- On-chip for SLM and Spyre for LLM - much more power efficient
- Compared to Nvidia chip - IBM not building GPUs for LLM

Powered by IBM Telum II and Spyre Accelerator
Quantum is a service, a cloud offering - not for on-premises
Predictive AI plus LLMs and GenAI
- TII has 1 AI accelerator, Spyre accelerator is 32 AI accelerators on PCIe card
- Sprye enables GenAI on Z
- 32 cores, 2MB scratchpad, 55% effective TOPS utilization
- 300+ TOPS, 75w PCIe gen5 x16 adapter, 128GB of LPDDR5 memory
- Up to 48 adapters per system

AI acceleration on zNext
- Telum II AI only chip
- In-drawer intelligent routing for remote AI processing, 8x possible

Enterprise-ready software stack
- Watsonx and Red Hat OpenShift
- Spyre card helps keep private data on platform

Advanced AI - Benefits improved accuracy, client loyalty, greater ROI, improved efficiency
zNext Technology Highlights see April 8 IBM Z Day

What a z/OS Guy Learned About AWS Over 10 Years - session 64186

By Scott Chapman of Enterprise Performance Strategies, Inc.

EPS: Pivotor reporting and analysis software and services, education, consulting
Free z/OS performance seminars
Several EPS performance presentations at this SHARE

Pivotor is EPS data reporting tool & service designed specifically for z/OS performance reporting-runs in AWS

In 2014 IT at EPS = Linux servers on AWS, DP has grown 20+x since then

mainframe users don't have much experience with the "cloud" and cloud people have little mainframe knowledge

Cloud computing definitions
- Basically outsourcing of various types
- "Someone else's computer"
- Pay as you go model - larger operational expense but avoid capital expense

Cloud Migration strategies (less to more "cloudy")
- Re-host - move server to cloud
- Re-platform - move some functions to new cloud-native service
- Re-factor - change applications to be cloud-native
- More cloudy
  - Move savings - questionable
  - More vendor lock-in
  - Less control
- More potential for hidden and unexpected dependencies

Cloud repatriation
- Bring processing back to your own site at certain scale
- AWS markup is substantial
- easiest for IaaS situations

Multi-cloud
- bad idea for multiple reasons; more management overhead, less scale discounts, data transfer profitable for cloud guys

AWS Services
- Over than 200 services
- EC2 = Elastic Cloud Compute = virtual server instances
- EBS = elastic block store = virtual disk volumes (connect to EC2 instances)
- S3 = Simple Storage Service
- VPS = Virtual Private cloud = virtual network
- SNS = simple notification service = email, text, notification
- CloudWatch - cloud monitoring
- CloudTrail - cloud logging
- Lambda - server-less code conversion environment
- Accounts - AWS things cannot be shared between accounts
- Organization group of accounts bundled together for billing and control
- Instance server
- AMI = Amazon machine Image = image of a server
- vCPU = Virtual CPU, usually just a thread on a core
- Bucket - globally unique name grouping S3 objects
- AV - Availability Zones = group of datacenters in close proximity

AWS strengths
- Cost starts at zero, pennies for very small services
  - "In the cloud, you only pay for what you forgot to turn off"
  - Pennies add up quickly - 10 cents an hour with storage 8 cents per GB/month
- Services add up
- Very dynamic capacity, cost-effective to test things

- Turn off servers when you're done!
- Clouds are not infinite
  - Very large requests may not get fulfilled right away
  - Not all services or instance types are available in all regions

S3 is pretty great

- No instance of S3 standard storage losing data in 18 years!
- Great for backups (active use requires more care)
- Inexpensive - avoid express option-too expensive
  - Charge for access, binary gigs for storage instead of decimal gigs
- S3 API-compatible competitors such as B2 and R2
- Pricing complicated by per-request costs and multi-block objects
- Performance somewhat variable

Choices

- Multiple ways to solve a problem
- Multiple relational DBs including Db2
- Testing is recommended!

Server scaling not granular

- AWS lots of EC2 instance size options but…
- changing instance type requires shutting down instance
  - Partially an OS limitation
- Expectation of scale-out not scale-up
  - Cattle not pets
  - Scale out can require more management
    - Charged for what you forgot to turn off!

Pricing is complicated

- AWS saw IBM's software pricing models and said "Hold my Beer!"
- Multiple options and dimensions
- Some pricing dimensions can't be known until you try
- Use savings plans or reserved instances to reduce instance costs
- Prices vary by region
- https://www.duckbillgroup.com are good for AWS consultations

Batteries not included

- Backup not included, usually cost extra

Isn't cloud highly available by default?

- No, High Availability must be configured and paid for

Support

- 3-10% extra on top of your bill

Account manager?

- Maybe if you spend $1m per year

Performance can be variable

- Burst performance prone to variability
- EBS volumes are also Network-attached storage
- cpu performance fairly stable if not unstable
  - Specter/meltdown issue in 2018 was exception to that
- Other services also have pay for performance option

Mainframe Strengths

- JES(!) - batch processing, z/OS excels at batch management
- Db2 - best database in the world is db2 on parallel Sysplex
  - others have poor performance, eventually consistency, lack of metrics
    - Migrations are far harder
- WLM - awesome piece of technology
  - Much, much more difficult to manage disparate workloads without it!

Vertical Scalability

- Run everything on one system does simplify things
- Network latency with in AZ is low, not cross-memory fast
- AWS has very large instances, but OS limitations will keep one workload per server

Shifting work with Parallel Sysplex makes maintenance easier!

Data replication

Mainframe data replication technologies are exceptional!

Full DR in AWS is way more complicated

Enqueues

Not there

Building locking mechanisms is hard

SMF

Lots of metrics but not as broad and detailed

Mainframe challenges relative to cloud

Doesn't start at $0 (and goes too high)

High initial costs repel small customers

Existing customers struggle with software costs

Mainframe can be cost competitive for large workloads

Box trucks versus a train

Spin up server and have TB of space in AWS is nice

Lack of people not as much a mainframe problem as touted

Conclusion

AWS playing can be cheap but be careful

Setup billing alerts!

Stop EC2 server when not used

Being Aware of Changes in z/OS 3.1 Sooner Rather Than Later

By Shigeki Kimura, IBM Japan, zMigration Technical Team Load

12 attendees

Migration and then focus on exploitation

No surprise is his goal

z/OS 3.1 from 2.5 differences

Useful new features in z/OS 3.1

JES2

now STC can be cancelled by $CS command, be careful if using range of tasks numbers (RESTRICTED JESCANCEL option for JOBCLASS)

TSO/E failure message

New message at logon if data set is enqueued - includes dsname but no info about address space or job holding the enqueue

JCL EXEC statement

ABDISPCC support for abnormal data set disposition

Shipped in 2.4-3.1 PTFs

CPENABLE parameter

SYSTEM option default is 0,0 but SYSTEM automatically uses recommended value

ibm.com/support/pages/node/6353717

SDSF

MEMLIMIT display in SDSF panels

DA and AD shows enhanced MEMLIMITSRC new column

Source of MEMLIMIT value

APAR OA63030 enhances RSMDATA HIGHVIRT

Upgrade issues

BPXF287I message during initialization

Message even if no HFS is defined

Remove HFS from BPXPRMxx to stop message

IFA832I with CC08 by IFASMFDL Options(Archive)

in z/OS 2.5 include 0:2047 instead of 0:255 so all SMF records are recorded
Otherwise cc=08

LLA
Enforcement of SYSTEM Service Class
z/OS 2.5 cannot set to SYSTEM but 3.1 forces SYSTEM Service Class regardless of setting
F LLA,REFRESH might interfere with other services during high CPU times

D IPLINFO
IEE254I message with z/OS 3.1 and APAR OA63507 shows Validated Boot status
IEE254I is now 10 lines instead of 9 so may affect automation

New Health Check
SUP_ASVT_ABOVE_16M to encourage ASVT above line
Print Services Facility with Channel-attached printer must leave ASVT in 24-bit storage

Enforcement of SSD-capable Sysplex CDSes
Must be SSD-capable CDSes before IPLing z/OS 3.1
Will not IPL if SSD is not capable, then IPL fails every time
D XCF,C,TYPE=SYSPLEX shows if supported but value not there if not supported

z/OS Data Gatherer related path & DDDEF
New DD name and Data Set name

JOBLOG day/date messages
New date message shows 00:00:00

JES2 TGs and JOEs resource limits
Defaults action is WAIT, and can be NONE and FAIL
New messages do not recommend override
Some jobs may need to be changed to NONE

JES2 installation exit 2 and 52
Customize JES2 input processing
Moved to earlier in processing, JCTJOBID does not exist so exit might fail
Instead use JCTJOBFL to check job type

DFSMStvs now base element in 3.1
CPAC.PARMLIB still has entry for DFSMStvs marked disabled - see TechNote
Will be removed from IFAPRD00 in future

ISPF EDIT Compare
DSNAME for SAVE changed from ISPFEDIT to EDIT

RACF IRRUT200
DSORG PSU
z/OS 2.5 with PTF and in 3.1, RACF DB can be in VSAM data set
IRRUT200 now calls IDCAMS instead of IEBGENER to copy VSAM DB
If ICEGENER has alias for IEBGENER, might fail because IDCAMS does not add 25% to output data set size

SDSF SR panel
Julian date but in z/OS 2.5 and 3.1 now accepts mm/dd/yyyy

OMVS segment not defined for SDSFAUX
Panel updated in z/OS 2.5 to show OMVS values but needs OMVS segment defined for issuer

SDSF MEMLIMIT
Must be 2GB at a minimum for MEMLIMIT to work
0M or 1M causes error

SDSF confirm Action pop-up
process action character default was 1, now has no value until PTF APPLYed to restore default

SDSF batch restriction
SDSF batch job can be invoked with PGM=SDSF and ISFAFD
RGEN can generate JCL for SDSF

Bit Bucket x’45’ (69th since 1983)

by various presenters

Fully Wired Systems Programmer Rebooted (in honor of Sam Knutson)

- By Donna Hudi of Phoenix Software
- Resources - see handout
  - IBMMain discussion group
  - System Z Enthusiasts Discord
  - Open Mainframe Project
  - https://interskill.com/?noredirect=en-US for Mainframe training
  - IBM Z Xplore Skill Depot ibm.com/z/resources/mainframe-skills
  - Open Mainframe Project Education
    - Zowe free training at interskill.com/zowe/
    - Openmainframeproject.org/projects/cobol
  - CBTTape https://www.cbttape.org
    - discussion group on Discord Z enthusiasts
  - Added to Open MF Project
    - Zones to train LLM with Mainframe programming languages like COBOL
    - Z open tools
  - John Erhman v2 assembler programming book
    - https://www.cbttape.org/ftp/asmbook/alnv200.pdf

CBT Tape https://www.cbttape.org

- By xxx and xxx
- Users sharing code since 1970s via CBT Tape
- Amazing assembler code
- CBT Tape Search Tool being developed
  - Targeting non-MF platform
  - WGET to download all CBT files
  - Windows XMIT utility to extract and convert to ASCII
  - Apache Solr (http server) widely used open-source tool for search repository
  - Format files for indexing by Solr
    - Structure CBT data to simple JSON format
    - Schema for all fields in the files
    - Curl used to create http commons
    - 49283 files indexed 2.28 GB
    - standard query format
  - Django Python framework for webUI
  - Apache HTTP server serves static or dynamic
  - configure virtual host
- file 43 - see Bit Bucket x'3E' about existing index CBTView indexes files

IPCS Treasure Hunt

- Undocumented IPCS commands
  - Enable Sysprogs and system admins to perform diagnostic tasks
- IPCS is the dark art in the realm of mysticism, and the arcane
  - 23 unsupported functions in 2.6i of IPCS
  - DUMPINFO (IEAVDUMP)
  - LOGDATAS (ieavlogd)
  - TCBMAP (IEAVTCBM)
    - Options like RBINFO
  - VSMINFO (IGVVSMIN)
    - Classic address space virtual storage diagram
- In z/OS 2.5, APAR OA64245 provided new 48 unsupported IPCS tools to speed on-site diagnostics (written in compiled REXX)
    - IPCS IEAVHELP
  - FINDDATA(BLSXFIND)
    - Searches actual dump to find data string
  - Save area formatters (five)

LISTPSW (BLSXLPSW)
SYSTRACZ (IEAVSYSZ) inserts columns in trace output for location area and module name
VSMINFO (IGVZSMI) works with 64-bit code

Send BeckyParchman@bmc.com your session ideas