

SHARE 2022 Dallas March 28-30, 2022 Notes

By Ed Webb of SPARTA

28Mar2022 Monday

32875 MVS Program Opening and Keynote

By Ed Jaffe of Phoenix Software International, John Shebey of IBM Support, and John Petreshock , IBM z/OS Product Manager
60+ attendees in-person

See Peter Fandel's (Rocket Software) handout:

Zowe 2.0 is coming (v1 is in maintenance mode for 2 years)

Integrated Security configuration enhancements, high availability
Configuration consolidation

Team and automatic team configurations

Explorer: improved APIs

API Mediation Layer

App Framework

Angular 6>12

Corejs 2>3

Typescript 2>4

Systems

Zwe server command -install -configure

<https://www.zowe.org>

See John Shebey's (IBM) handout:

RSM APAR OA61960 HIPER/PE fixing

Z/OS 2.4 RSM support of UNIX MMAP Service APAR OA60306

All users of z/OS 2.5

Problem: Deadlock (IPL may be required)

RSU2201

XCF APAR OA62794 HIPER

z/OS 2.5 greater than 2048 structures in Couple Data Set can lose CDSes

PTFs available March 2, 2022

Red Alerts - none in 2021

==>>August 31, 2022 - unsecured and anonymous ftp upload of

documentation to IBM Testcase and ECU rep servers will be disabled
IBM Support file Transport ID is required

XRC (z/OS Global Mirroring) being removed after z/OS 2.5

@IBMSupport on Twitter

See IBM MediaCenter for z/OS for support-related videos

See April Hickel's (BMC) handout:

2021 BMC Mainframe Survey

customers and non-customers of IBM mainframe

16 years of survey

1345 respondents (22% year over year) from 21 countries

Government, tech, financial, etc.

45% are 5 years or less in MF

30-49 and 50-64 were largest groups

In 2020, increase in transaction volume, number of databases, increase in data volume

More changes to database objects, more volatility of unpredictability, increase in rate of application change

Perspectives on Platform

92% platform of long-term growth and workloads, extra large shops house more than 50% of their data on the platform, 64% for large and extra-large shops view platform as one for new growth (10K MIPS are large, 50K MIPS are extra-large)

MIPS are growing

70% are flat or growing, 1/3 decline

Next 12 months 75% growing, 25% decline

Security, Cost optimization, staffing and skills, and application modernization

Many shops require 99.99% uptime (only 52 minutes a year down)

Extra-large shops are not worried about costs as much Security, application modernization, staffing, AI/Machine Learning

Strengths are security, availability, centralized data serving environment,

new technology available on platform (7% increase)

Enterprises are noted as champions and laggards (investing or flat, or declining)

Champions are investing in DevOps, skill level (AI Ops), leverage IBM academic initiatives, cite new tech as platform strength

nnnnn What's New in z/OS 2.5: The Big D Edition

By Gary Puchkoff of IBM

60+ attendees

See handout

System Recovery Boost

IPL and Shutdown Boost is enabled by default on z15

Sysplex Recovery for specific situations requires enablement

ICSF (Crypto) is available without web-download

4Q enhancements

zCX is 98% ZIIP-enabled

Larger GID/UID ranges

IBM Z and LinuxONE container registry for vetted zCX applications

AI on Z apps

IBM zCX Foundation for Red Hat OpenShift - New product 1Q2022

Statement of Direction (SOD) - z/OS Containers for traditional z/OS applications

IBM V2.5 moving to IBM Semeru Java DK V11 (64-bit only) by V2.5 end of life (2026)

Available in Nov. 2021

ISPF Enhancements

Built-in https client is Web enablement toolkit

z/OSMF Desktop UI

System programmer toolkit, not an application developer toolkit

Chrome, Firefox, Edge - ask IBM if you have trouble with other browsers

File compare coming in 1Q2022

IBM z/OS Management Services Catalog

Mundane task automation for entry-level system programmers

User enhancements encouraged

z/OS Release Upgrade Enhancement

z/OS V.25 Upgrade Workflow

now part of z/OS - no GitHub download required, PTF-serviced

z/OSMF Software Management Installation of ServerPac

2Q2022 withdraws ISPF-based ServerPac, also known as CustomPac ServerPac

Late news: After July 10, 2022, to install z/OS V2.5 with ServerPac, it will be z/OSMF Software Management only.

z/OSMF Software Update Task - PTFs, RSUs

z/OSMF lots of other enhancements

SOD SMF.py for python and Jupiter notebooks

z/OS Anomaly detection and mitigation

PFA and RTD enhancements

z/OS Cloud Provisioning and management (CP&M) enhanced to provide new z/OS system (single system now with Sysplex coming)

zERT Policy enforcement (z/OS Encryption Readiness Technology)

IBM GDPS Logical Corruption Protection and recovery

Safeguarded copy of data for secure recovery

DFSMSHsm can have separate instance to manage Unix files only

SOD Data Set File System - use z/OS data sets from z/OS Unix

Available soon

PDSE member compression - automatic, transparent to user

Security enhancements - lots of them!

RACF Health Checks

Data Privacy for Diagnostics (dump data for IBM and vendors)

z/OS requirements are now Ideas based on AHA platform:

RFE is now Ideas <https://ideas.ibm.com>

Use SHARE requirements to submit requirements

Here's link to User Requirements satisfied by z/OS 2.5:

<https://www-01.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r5-user-req?OpenDocument>

z/OS Education Assistant for z/OS 2.5 materials at z/OS github:

<https://github.com/IBM/IBM-Z-zOS/tree/main/zOS-Education/zOS-V2.5-Education>

Nnnnn NFS/zFS Update

By Kershaw Mehta of IBM

12 attendees

See handout

OA61716 z/OS 2.5 MacOS client support for NFSv4 - see slide 3 for details

MVSLOGIN, MVSLOGOUT, and SHOWATTR binaries supplied by IBM

OA61128 z/OS 2.4 and 2.5 add RPM support to build client utilities on RHEL, SLES, and AIX

OA62357 for Z/OS 2.4 and 2.5

AT-TLS support for NFS Server

Eliminate explicit MVSLOGIN - secured server/client (implicit mvslogin)

ZCX and clients using NFS v4

access zFS or z/OS data sets

OA62860 for z/OS 2.4 and 2.5

MacOS and Linux users running NFS V4

File system remounts after NFS server restarted

Windows 10 and 11 have not adopted NFS V4 yet

ZFS updates

OA59435 for z/OS 2.3 and 2.4 included in z/OS 2.5 zfsadm chaggr command to update more attributes particularly using wildcards

Each file changed reported as completed

OA59145 for 2.3 and 2.4 included in z/OS 2.5

65 second wait at IPL avoided if zFS file is marked as correctly backed up

zFS High Availability Support

New support for RWSHARE zFS file systems to avoid requiring applications to handle recovery errors (re-open file to establish a new owner)

New keyword on MOUNT parameter for RWSHARE file systems
HA or NOHA

IOEFSPRM HA=ON or OFF for all RWSHARE filesystems

not applicable to automove=unmount or automove=no file systems

zfsadm fsinfo to HA attribute (use -SELECT HA to find all with HA or NOHA to see non-HA)

Potential performance hit to HA file applications but IBM has not found any

z/OS 2.3 and up

00378 What's New in z/OSMF V2R5?

by Gary Puchkoff of IBM

z/OSMF trial

IBM.com link in handout

<https://www.ibm.com/account/reg/us-en/signup?formid=urx-34578>

z/OSMF One Stop Hub

<https://ibm.github.io/zOSMF/>

Videos and marketplace page and Redbooks

nnnnn IBM SMF Explorer - The Modern Way to Work with SMF Records

By Dorian Czichotzki, IBM Germany

50+ attendees

Introduction

SMF analysis today

SMF data > Pre-processing (CSV/database) > Tooling > Analysis

Limited pre-processing knowledge, data offloading, time

consuming, quick prototyping is often hard

Tool experts retiring

IBM SMF Explorer

framework for SMF data access using Python

Fetches pre-processed SMF data into Pandas DataFrames

Features

Filtering, sorting, multiple features

Goals

Accessing with “modern” programming language

Making data processing transparent

No z/OS skill required to get started

Quick prototyping

Components

Definition of data source (z/OS Data Gatherer RESTful API)

Field definitions

Data pre-processing - transforms data to useful scales or basis

Virtual fields - made up fields that integrate expert knowledge, decompose or aggregate

Flag fields interpreted

Samples - group similar, define relevant fields

z/OS components can provide plug-ins for their own data

Pre-processing, virtual fields, samples

Jupyter Notebooks

Interactive PDFs for programmers

Code in notebook executed with output directly shown

A main deliverable of SMFpy

Standardized file format allows shared notebooks

Build community around Notebooks - share via GitHub

Demo

IBM SMF Explorer 1.0 plans

SMF 99, 113, 70-79

Jupyter Notebook Tutorials

LPAR Topology Report

How shipped

pip installable package

GitHub Repository

Free unpriced feature of z/OS 2.5

Getting started tool but licensed under z/OS license

Report samples are Apache open source

nnnnn Upgrade to z/OS 2.5: Planning and Technical Actions

By Marna Walle of IBM

31+ attendees 80+ online

See handout

Also Mark Wallen is new IBMer for Upgrade Presentation

Most upgrade actions can be done now

zACS (authorized code scanner) also on 2.4 via PTFs

zWIC (with RMF license or separately)

APARs for RUCSA-related health checks

z/OS2.5 upgrade workflows OA60711

SMF30numberofdataspacesHWM in z/OS 2.4 and 2.3 for decrease in default data spaces

HCD upgrades actions for z/OS 2.5

Removed pre-z10 definitions

RMF - watch out for data set name changes

ADG advanced data gatherer

SGRBxxxx for DG and ADG

HCR77D2 ICSF removed some really old parts but no application changes needed unless you want to

z/OSMF PH11606 Diagnostics Assistant upgraded

SDSF Security removed from ISFPARMS - may take a while so do it now

RACF TSO HELP not available

SSH upgrade to 7.6p1 at 2.4 level

2.3 and 2.2 had painful changes during upgrade

Java 8 64-bit is required for z/OS 2.5 and Java 11 will be required before end of z/OS 2.5

Be aware; FIXCAT will be provided

nnnnn Installing z/OS 2.5 Using Software Management

By Kurt Quakenbush

40+ attendees 72 online

<https://www.ibm.com/support/z-content-solutions/serverpac-install-zosmf/>

IBM Will Announce in 2Q2022 when old ServerPac is going away

IBM Software Manufacturing changes required before old ServerPac is withdrawn but it will happen

Late News: After July 10, 2022, to install z/OS V2.5 with ServerPac, it will be z/OSMF Software Management only.

>> Use FIXCAT IBM.DrivingSystem-RequiredService to get latest PTFs for z/OSMF Software Management
z/OS V2R3 HSMA234 = UI79666
z/OS V2R4 HSMA244 = UI79664
z/OS V2R5 HSMA254 = UI79663

Delivering data sets with 40% or more free space in System Libraries

Merge>Add Data Set action - available last week (mid-March 2022)

Now a Save Action to Resume later

3 IBM-provided workflows should be run after Portable Software Instance is deployed

nnnnn IBM Responses to SHARE Requirements

By Mike Shorkend, Barbara McDonald of IBM
26 attendees (lots of IBMers)

SSMVSE11036 declined RFE#51776

Cheryl's??

AHA ZOS-I-926 sample

29Mar2022 Tuesday

nnnnn Data Leakage Protection (DLP)

By Mark Wilson of BMC

12 attendees

See handout

DLP in the Network

2017 says by 2021 90% of shops will have DLP protection

FTP, SMTP, IND\$FILE, Connect Direct, http/s, many other attack vectors

Is READ access to data OK?

UACC NONE by default; if it can be read, it can be copied

Monitor Network activity in realtime

TCPIP profile restrict ports, network zone and SAF resource, enable in filtering, zERT

RACF (SAF) SERVAUTH Class

IP filtering

Intrusion Detection Services

TRMD

Defense Manager

Dynamic z/OS firewall

Runs as a daemon

ZERT

TCPIP profile, connection monitoring, detail and summary modes

AT-TLS

Policy Agent managed

IBM preferred method for encrypting connections

Network Management APIs (NMIs)

Monitoring, poll monitoring, assembler and C

Exit Routines

FTP exits

SMF Records

Record Type 119

SMF-based NMIs

Plenty of tools but rarely deployed

Worry about cloud, database, network,

Use these tools to get defense in depth and real-time monitoring

Not perfect, but bad actors are determined and have time, so it's important to try

2nnnn Run the RACF and Crypto Health Checks

By Eysha Shirrine Powers and Ross Cooper of IBM

26 attendees

Zero Trust Architecture

Enterprise monitors and measures the integrity and security posture of all owned and associated assets frequently or in realtime

z/OS System Integrity Statement

"...unless allowed by the installation"

RACF

APF and other data sets protected ?

Security settings set correctly

Operational security settings

ICSF

Crypto configuration

Report on weak keys

IBM Health Checker for z/OS

identify potential problems

IBM ships dozens of Health Checks, vendors ship some as well

HZSPROC requires access to FACILITY BPX.SUPERUSER

PARMLIB(HZSPRMxx)

SDSF CK or IOF CK command

ICSF Health Checks

ICSF_xxxx 9 checks

RACF_xxx 27 checks

ICSFMIGxxxx

ICSF_KEY_EXPIRATION

CSFKDSL and CSFDMR

Retained key

CSFRKL

RACF_SENSITIVE_RESOURCES

Review ICSF APF, Linklist, ICSF dataset report

RACF_CSFKEYS_ACTIVE

If not active, all crypto keys available to everyone

RACF_CSFSESV_ACTIVE

If not active, allow access to all ICSF services

ICSF_COPROCESSOR_STATE_NEGCHANGE

Detects degradation of crypto co-processors or accelerator

ICSF_DEPRECATED_SERV_WARNINGS

See if services are no longer supported

ICSF_KEY_EXPIRATION

warns of upcoming key expiration or if key has expired

ICSF format changes based on new requirements

Quantum-safe keys are 10K long

Conversion programs available

ICSF_MASTER_KEY_CONSISTENCY

Warns if not consistent and status of co-processors

ICSF_OPTIONS_CHECKS

Verifies CHECKAUTH settings

CK filter by OWNER IBM RACF

RACF_SENSITIVE_RESOURCES

Profile reviews including UACC, WARNING, other attributes

Data sets - APF, RACF base, PARMLIB,

Other Resources in General Resource Classes

FACILITY, OPERCMDS, TSOAUTH, UNIXPRIV, SURROGAT

RACF_RRSF_RESOURCES

Are INMSG/OUTMSG data sets secure?

User-written RACF Resource Checks

RACFHC Class names the RESOURCE Check

ADD CHECK(nnnn,name) PARM(....)

RACF_GRS_RNL

Verify that RACF ENQs are in SERNL or SIRNL lists

RACF Password Hashing

Masking

DES

KDFAES is recommended

RACF_ENCRYPTION_ALGORITHM

Verify KDFAES is in effect
RACF_PASSWORD_CONTROLS
MIXEDCASE, REVOKE, INITSTATS, INTERVAL
Enhanced PassTickets in PTFs for OA59196 or base z/OS 2.5
Key stored in ICSF
Older PassTickets are masked
RACF_PKTDI....

RFE/Ideas <https://ideas.ibm.com/?interaction=raised>

z/OSMF Security Configuration Assistant

nnnnn IBM HMC 2.15.n including Remote Code Load

With xxxxx IBM
25 attendees
See handout

One week from HMC 2.16.nn (April 5) with z16
May 4th, 2021 announcement

Remote Code Load Option for IBM Z Firmware
Update Controls for Setup and Monitoring with connection to HMC
Uses existing zRSF Call Out Connection Infrastructure
Requires Opt In Security Configuration by Client and scheduling on
IBM Resource Link
96% success rate => if exception, SSR dispatched immediately
View schedule on ResourceLink
No client interaction - IBM is still responsible for completing the
work
Minimum of 2 day out schedule, better to schedule 7 days out

z16 will be last to default to on-site service, zNext will be remote only by
default, fee for on-site service

LDAP Group Membership

Link HMC user authority levels to LDAP group membership
Can elevate user privileges
Provide unique userids for access to HMC

BCPii automation

V1 SNMP APIs to allow z/OS apps to have HCM-like control over systems in process control (HMC) network

V2/HWIREST API Highlights

Still support V1

Robust REST-Like APIs

Book for HMC Web Services API

Operational categories supported, some still in-progress

GitHub [GitHub.com/IBM/BCP-II](https://github.com/IBM/BCP-II)

New features available to z/OS when REST function implemented on HMC

Hardware Management Appliance (HMA)

HMA-only for z16, HMA is optional for z15

HMA is inside the CEC - just run existing HCM connections to CEC rather than to separate HMCs

HMA includes redundant HMCs and Support Elements

For your own control center, just provide your own hardware to do remote access

Recommend only 2 HMCs for a data center, so now get 2 HMA per order (leave off HMA for multiple CECs)

Existing z15 HMCs will work for z16 but after z16 no HMCs can be used

Remote Logging Servers

How to send logs to centralized logging server like Splunk

SSL connections between HMC and sysprog server

Precision Time Protocol

STP PTP changes include external PTP time source

HMC Dashboard always shows Status Bar

HMC Mobile App

Limit per task whether mobile can update or change

HMC tutorials/videos

<https://ibm.biz/IBM-Z-HMC>

66043 CSI - A Better Catalog Search

By Steve Branch of IBM DFSMS

17 attendees

CAMLST and IDCAMS callable interface were insufficient and unformatted
Catalog Search Interface (CSI)

Chapter 11 of DFSMS Catalog Interface Guide

IGGCSI00 in SYS1.LINKLIB or another library

75+ catalog field names

Filter keys

CATSRCHI better than IGGCSIRX

Allows filter key input for name and some field names

>> See website link in handout

<ftp://public.dhe.ibm.com/servers/storage/support/software/dfsms/cattools/>

FTP download tersed file, unterse, and run

%CATSRCHI filter_key FIELDNAMES() TYPES(xxx..) CAT(catalog name)

FIELDNAMES is required

New entry type Z since z/OS 2.2

Returns dynamic data from CAS Control Blocks instead of Catalog contents

CATUCB address of UCB of volume that catalog resides on

nnnnn z/OSMF Pitfalls, and How to Avoid Them in V2.5

by Kenneth Irwin of IBM irwink@us.ibm.com

26 attendees

z/OS Management Facility (z/OSMF)

SYS1.SAMPLIB

common stumbling blocks: Missing userids, permissions, access for plugins, services, and APIs

Solutions in SYS1.SAMPLIB

z/OSMF IZUSEC and IZUMKFS and other jobs to set up security

IZUxxSEC contain security setups for various plugins

IZUNUSEC Nucleus, primarily for ZOWE

IZUISSEC for ISPF service

IZUMSSEC for z/OS Management Services Catalog

If z/OSMF is running, use the z/OSMF Security Configuration Assistant

Costume Properties and Variables

/<USER_DIR>/configuration/local_override.cfg

ZOSMF properties, Java Properties and variables, tracing options

IZU_SSL_PROTOCOL=SSL_TLSv2 (default) TLS v1 to TLSv2

=TSLv1.2 only TLSv1.2 connections

IZU_CIPHERS_LIST JVM-provided are allowed, use this option to list allowed ciphers

Controls how browsers connect to server

JVM_OPTIONS How Java VM operates with the zOSMF Server

Add Java Heap space JVM_OPTIONS=-Xmx4096m (Xmx max heap size)

Bounce Java server to implement change

Symptom java/lang/outofmemory error, investigate entire exception

Between options \n is required

See handout about java options file setup

how do I know if a local_override.cfg exists?

See log for IZUG340I or IZUG020W messages

APAR PH12143 provides function to modify Liberty server server.xml

Included in z/OS 2.5 base

Within \$USER_DIR/configuration

File name is server_override.xml

entries in ASCII !!!

Reported in Server logs

CWWKGnnnA are Liberty messages

Sample for alternate logging definition:

```
<server>
```

```
<logging traceSpecification=.../>
```

```
</server>
```

Most Common Problem is ...

1. Non-secure connections to z/OSMF instance

Message "Warning: Potential Security Risk Ahead"

usually if using self-signed certificate

CertAuth is not TRUSTED within Browser

Accept untrusted certificate

OR

Import Root Certificate Authority into your web browser's Trusted certificates or security exception list

2. Common key ring error message

Run Java's Keytool (see handout sample JCL) under z/OSMF

server's ID

Tip: Run as a step in IZUSVR1 proc to get server's ID

3. Review <USER_DIR>/data/logs/zosmfServer/logs

Workflows disappear

Check for filters including offscreen (scroll right)

Did you change Hostname (workflows associate to a given System name)?

Could host have been removed? Click Systems tab to see if all System entries are there

in Systems tab, actions>discover>system to run System Discover (only adds according to Ken I.)

Space

How to save some?

z/OSMF Diagnostic Assistant Space management (tab)

Set policy to remove z/OSMF log files

MAXTHREADS

Servers terminate if MAXTHREADS is exceeded, Ken suggests to 1000

RACF ALTUSER to set MAXTHREADS per user

See JES2 and TLSv1.2 section of handout

APAR PH44934 see handout page

Add LogonPanel.jsp to link value

z/OS Java v11 support not yet implemented in z/OSMF

TLSv1.3 in Java8 not yet implemented in z/OSMF

z/OSMF Logs page in handout

367 IBM Change Tracker for z/OS 2.5

by Marne Walle of IBM and Chris Taylor, 21st Century Software
52+ attendees

New Priced Feature function coming in z/OS 2.5

21st Century is the development partner for IBM

SOD 15Mar2022 comprehensive configuration change management tool for tracking, controlling, and managing software changes

Content Solution page with technical details planned at a future date

Install on z/OS 2.5

Overview of IBM z/OS Change Tracker

Problem - no auditing of system changes, and who made change

Personas - primary stakeholders

z/OS system Programmer, Risk and compliance

Customer value - realtime, system-wide change tracking and control with member level recovery of realtime changes, with fingerprinting for members to verify integrity

More secure zOS and resilient IT environment

Automated process to system software change control

Reduce costs to meet auditing and compliance requirements

improve quality and reliability and reduce system outages

Key features

Automatic real-time monitoring of change activities

Detection and recoding of key elements of changes

Automatic member-level backup for protected sources

Member-level recoverability with a view of previous member versions and their changes

not recovering down system via the down system, use other sysplex system

Core functions

Protection security and integrity

Recovery - resilience

Audit - control

Fingerprint/tokenization - compare software across z/OS environments; cost saving

Notification via e-mail

Started Task on each member of Sysplex

ISPF Interface (generates batch jobs)

z/OSMF interface is future goal

CYGPARMs member for parameters

Monitoring and Protecting

Protect critical system libraries (can use patterns) with change history

VSAM KSDS is repository

Fingerprinting the software environment

Reference tokens

High-level compares

Recovery

Audit

Snapshots

Collections of data sets single file to entire DASD volume

Includes planned future deliverables with local and remote
z/OSMF configuration Workflow to setup Change Tracker
RACF FACILITY Class CYGxxxx

30Mar2022 Wednesday

nnnnn Using z/OSMF Management Services Catalog

By Marna Walle of IBM, Travis Biro of IBM

21 attendees + 32 online

See handout

Creating a service and making changes does not alter the base
workflow.xml

runAsUser for steps in workflow is available

Switch to privileged user for a step but run rest in user authorized

Enable z/OS Management Services Catalog

PH40810 PTF UI78078 for z/OS V2.5 and UI78079 for z/OS V2.4

SYS1.SAMPLIB member IZUMSSEC for Security configuration

Use z/OSMF General settings to enable z/OS Management Catalog

ZOROW z/Open Repository of Workflows to find more samples to build into
Services

See zMSC survey link: <https://www.surveygizmo.com/s3/6762738/IBM-z-OS-Management-Services-Catalog-March-2022-Survey>

See z/OS Lab SHARE handouts as well

nnnnn zERT Function

By Chris Meyers of IBM, Keziah of IBM

30+ attendees

TCP/IP Cryptographic Protection for z/OS

TLS/SSL

AT-TLS Policy-based

VPN via IPSec and IKE (Internet Key Exchange)

Secure Shell with OpenSSH (secure FTP)

zERT encryption readiness technology

- Central collection point

- Discover security attributes

 - Stream observation

 - Advisory observation (current IP protocols are ZERT aware)

- Collected in memory, reported by SMF119 records

- No data or keys are collected

Only monitors TCP and EE connections that terminate on local TCP/IP stack

zERT Network analyzer stores data in DB2 database and produces reports

Policy-based Enforcement

SMF119 subtype 11 for zERT policy enforcements records

zERT aggregation assigns a Unique security session identifier for every unique TLS/SSL, SSH, IPSec and unprotected security session

USERID is one that opened the socket (client switching userids like ftp are not recorded by zERT)

zERT Network Analyzer (NWA)

- Userids

 - z/OSMF userid IZUSVR is what zERT runs under

 - Userid for login to z/OSMF controls zERT exported files

 - Database userid (usually dedicated) for zERT to connect to DB2 (JDBC connector) - right permissions in DB2

Currently no network analyzer for TLS connection with Db2 but see slide 32 of handout for setup to provide some protection

Setup DB2 nulled with release and keep connect settings per slide 33

Best for NWA to reside on same system as its DB2 database

Run NWA on non-production system to save cpu time on production system

- NWA is Java-based, ZIIP-eligible

PH35304 for z/OS 2.5

IBM.biz/cscommunity

Networking badges available

Nnnnn RACF 2.5 Update

By Ross Cooper of IBM

23 attendees

RACF Database

Primary, Backup, Multiple data sets possible

2021 SOD Encrypted VSAM Linear Data Set database for RACF

V2R5 RACF supports a non-encrypted VSAM database

Non-shared, single data set, AIM3

RACF APIs are not changed

Applications that read and write to RACF database may need changes

RACF Health Checks

5 new ones in V2.5

RACF_PROTECTALL

RACF_ERASE_ON_SCRATCH some DASD storage can do this without EOS-enabled

RACF_PTKTDATA_CLASS warns if passticket is masked in database instead of encrypted in ICSF

RACF_SYSPLEX_COMMUNICATION

RACF_ADDRESS_SPACE

PassTickets

Authorization token in placed of RACF password

Frequently used for Session Manager

Symmetric secret keys

migrate from KEYMASKED to KEYENCRYPTED

RALTER PTKTDATA MYAPPL SSIGNON(ENCRYPTKEY) so RACF will move it to ICSF

Enhanced PassTickets (drop in for existing passtickets)

Updated from DES to HMAC with SHA-512

Expanded character set (lower as well as uppercase with numerical)

TYPE UPPER or MIXED (use UPPER if PASSWORD is not MIXED yet)

Default is MIXED

Applications don't need any changes

Migrate soon though legacy deprecation is not announced yet

PassTicket Auditing

SMF type 80 Audit records

Passticket Migration

See handout for method and cautions

See APARs OA59196 and OA59197 for V2R3 and V2R4 that rolls Enhanced Passtickets back to these releases

RACF Administration Authority

RACF AA granted in many ways

User attributes

Profile Owner

ALTER access to a discrete DATASET profile basically gives OWNER authority to that user

Restrict ALTER access using FACILITY IRR.ALTER.classname (*)
UACC(NONE)

Grant authority on single user basis if needed

Certificate Fingerprint Support

How to track certificates in a standard way

Now RACF shows SHA-256 fingerprint (hash)

RACDCERT certificate list commands

RACF Database unload...

SMF RACF records updated with fingerprint

Identity Token Support

Added in V2R4

JSON Web Tokens

Improving multi-factor logon experience

Kerberos FIPS Support

IBM MFA product integrates with RACF

RFE/Ideas <https://ideas.ibm.com>

nnnnn Watson & Walker Roadshow

by Frank Kyne of Watson&Walker

55+ attendees

Sort Accelerator

Use SMF TYPE=FULL instead of IBM recommendation for zSort

Look at online record code information

Syncsort (company is named Precisely) APAR TZ04284 MFX 3.1

Turned on by default, maybe should turn off to start

Does not say why Sort wasn't use

Db2 enables zSort by default

SMF Type 113 extended counter 255 records SORTL calls

Use zBNA to find candidates for zSort

IBM.Function.ZSort FIXCAT

LPAR Design Tool

Z16 uses Telum chip

Enable SMF 113 HW Instruction

written by an IBMer and his customer

What's Happening with SMF

SMF.py is now SMF Explorer - python looks at SMF

SOD maybe G.A. later this year

SMF and Machine Learning means SMF experts and data scientists need to work together

See handout for session videos to review

IBM Data Gatherer in z/OS 2.5 has new GRBSMFR service

ZEBRA in Open Mainframe incubator project

SMF reporting via open source code

CF Monopolization Avoidance

See Mark Brooks z/OS Parallel Sysplex Update from this SHARE

Will be updated and uploaded later this week

z/OSMF items

Hub for all system programmer activities on z/OS

z/OSMF Policy Editor (APAR PH40176 for 2.4, base of 2.5)

Powerful capabilities for CFRM management

See Meet the New zOS CFRM Policy Editor

z/OSMF Management Services Catalog

brand new and not perfect, but try and recommend changes

z/OSMF File and Dataset REST API vs FTP

Andrew Rowley EasySMF product to compress SMF, download to desktop, and analyze

service definitions not changeable by user, affects whole sysplex even if mixed zOS releases

Turn on SMF 98 records is IBM recommendation

00393 Bit Bucket x'3F' (z/OS Hidden Treasures)

SHARE 138

nn attendees

Ed Jaffe

Z/OS UNIX Backup Catchup

After 2.5 years, HSM z/OS UNIX file backup support may work
(OA61080, OA61711, others)

Run 2 HSMs - one for classic, and one for File mode for z/OS UNIX
Use Java backup commands not traditional HSM HBackup

Done in Flash

Fast-replicating HSM Full volume Dumps for Non-SMS volumes

FRBACKUP to flash copy SMS-managed volumes and then backup to
virtual tape

Simulate function for Non-SMS Volumes

Manually (automate) flash copy non-SMS volumes

Then when HSM file mode starts backup of flash copy volumes, it
also includes the non-SMS flash copy

Note that backup reports show Flash Copy volser, not real volser
like SMS-managed volumes

Art Gutowski at Huntington.com

Check Syntax and Datasets at the Door

ISPF is Dead?

IBM's little-known Symbolic PARMLIB Parser

Included as-is with ISPF (not supported)

Install from SYS1.SAMPLIB

Exec isppinst (see MVS Init and Tuning book)

SYMCHECK or IPXCHECK to scan member content

Mike Shorkend (self-employed)

JOB Groups and SCHEDULE JCL statement

JES2 JOBGROUP, GJOB

Dynamic uses SCHEDULE BEFORE/AFTER/DELAY

Workload Interaction Correlator (WIC)

RMF licenses can use WIC at not extra charge

SMF Type 98 written by WIC, DB2, CICS, IMS

Correlation might have you find root cause of operational issues

SMF log stream mode

In-memory resource for WIC records

SMFPRMxx WIC keyword (default is NOWIC)

SET SMF or SETSMF WIC (requires auth)

IFAPRDxx to enable WIC

D SMF,WIC

HIS (HW Instrumentation Services)

D HIS,WIC and issue F HIS,WIC,INMEM=.... To save SMF data to file

James Lund (Texas A&M)

If You Wanna Be Happy for the Rest of Your Life

Make a PhD Grad Your ~~Wife~~ Sysprog

Death of Chief Sysprog and 2 retired, then down to one (James)

Difficult to find replacement, eventually Texas A&M PhD from Venezuela

Dived in, learned fast,

Take a chance, train a newbie, advertise at local universities