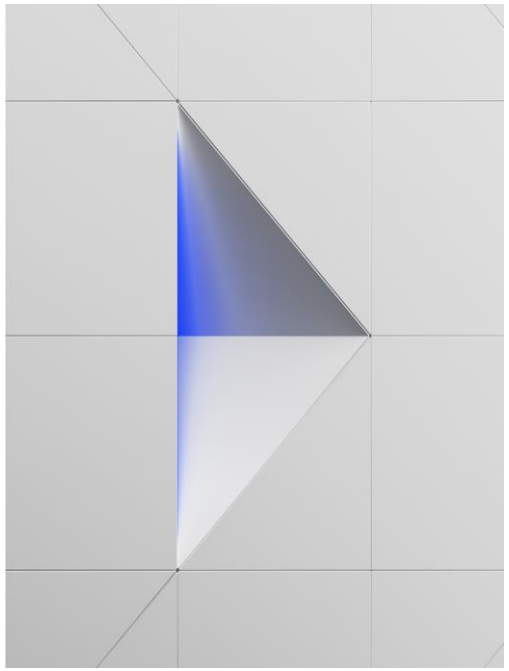
# What is new in z/OS 3.2- Preview Edition

Meral Temel
WSC z/OS Technical Engagement Leader
Meral.temel@ibm.com

Daniel Synder
WSC z/OS Technical Enablement Specialist
daniel.snyder@ibm.com

# Contents




z/OS zHW Support
z/OS Release & CD
z/OS 3.2 Preview Edition
- Overview
- Details on some enhancements

z/OS HW Support Features & Functions
z/OS 3.1 Recent CD Enhancements & Critical Announcements

List of Enhancements in Table Format
Useful information




z/OS 3.2 Preview Content:
Statements regarding IBM future direction and intent are subject to change or withdrawal, and represent goals and objectives only, until z/OS 3.2 GA announcement in few months.

# Please Note Disclaimers

IBM’s statements regarding its plans, directions, and intent are subject to change or withdrawal without notice and at IBM’s sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.

The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user’s job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

# z/OS Support Summary

| Release | z13<br>Z13s<br>WdfM | z14<br>ZR1<br>WdfM | z15<br>T01 T02<br>WdfM | Z16<br>A01<br>A02 | Z17<br>ME1 | End of Service | Extended Defect Support |
|---|---|---|---|---|---|---|---|
| z/OS V2.3 | X | X | X | X[3] | | 9/22 | 9/25[2] |
| z/OS V2.4 | X | X | X | X | X[3] | 9/24 | 9/27[2] |
| z/OS V2.5 | X | X | X | X | X | 9/26[1] | 9/29[2] |
| z/OS 3.1 | | X | X | X | X | 9/28[1] | 9/31[2] |
| z/OS 3.2[4] | | | X | X | X | 9/30[1] | 9/33[2] |

Notes:

[1] - All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

[2] - Extended support dates are projected and are subject to change or withdrawal without notice.

[3] – Toleration Support only

[4] – General Availability is planned for 9/30/2025

WdfM - Server has been withdrawn from Marketing

**Legend**

| |
|---|
| **Defect support provided with IBM Software Support Services for z/OS** |
| **Generally supported** |


z17 ME1

**z/OS V2.4 only has toleration support for z17 + PTFs** (Must have IBM Software Support Services offering purchased)

# z/OS 3.2 Preview Announcement

[IBM z/OS 3.2 Preview Announcement](#) 8 April 2025

https://www.ibm.com/docs/en/announcements/preview-zos-32?region=US

IBM | Documentation | Search IBM Documentation

Was this topic helpful?

## Preview: IBM z/OS 3.2 plans to unlock the value of IBM z17

Published: 8 April 2025 AD25-0004 Software

### Planned availability date

3Q 2025

Previews provide insight into IBM plans and direction. Availability, prices, ordering information, and terms and conditions will be provided when the product is announced. Availability within a country is subject to local legal requirements.

### Overview

Preview and Release announcements are in general announcement websites but they also have link in z/OS Community Page

All previous announcements can be found out in this [link](#)

**All z/OS Quarterly CD announcements can be found in [z/OS Community Page](#) . Please subscribe!**

[IBM Continuous Delivery Model Announcement](#)

[IBM z/OS Continuous Delivery Redpaper](#)

https://community.ibm.com/community/user/ibmz-and-linux

IBM | Community

IBM Z & LinuxONE Neighborhood | Learn | Connect | Grow | Contribute

## z/OS Announcements

[IBM z/OS 3.2 Announcements](#)

- Preview: z/OS 3.2 Announcement

---

[IBM z/OS 3.1 Announcements](#)

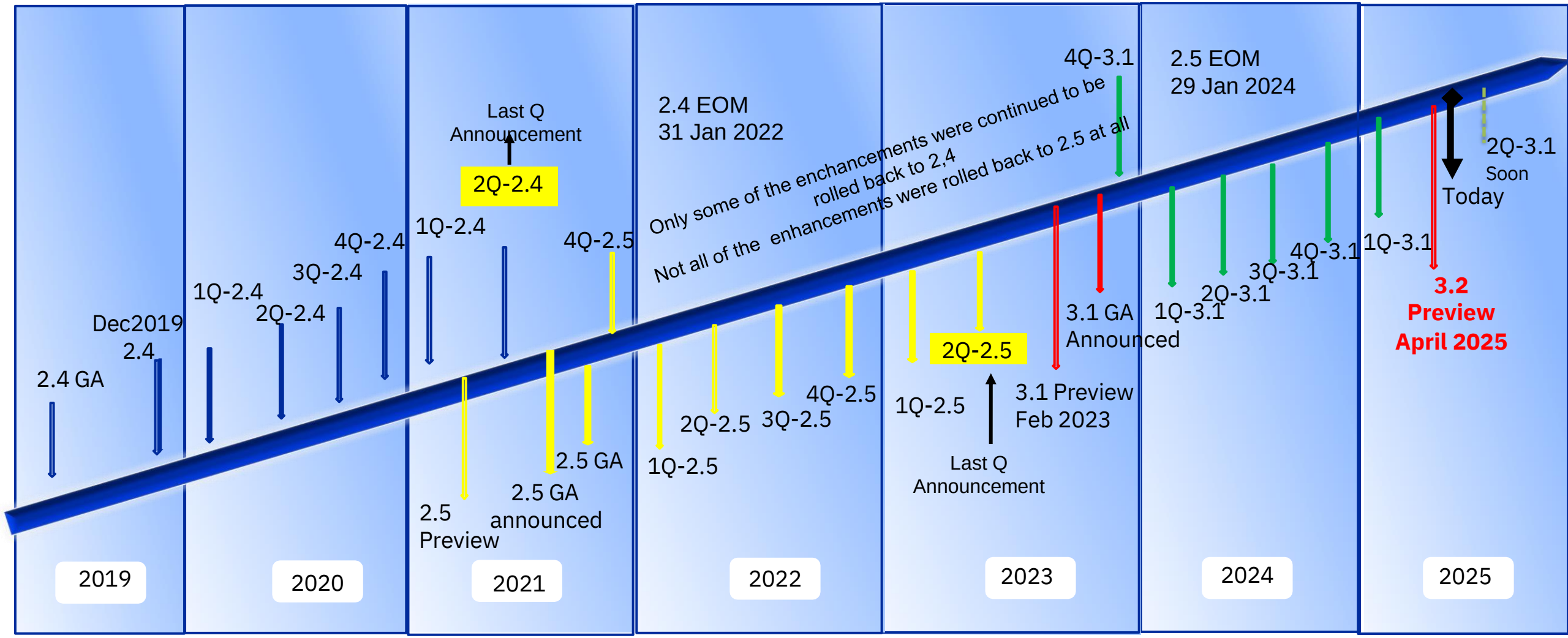
The new version of z/OS® is an AI-infused, hybrid cloud operating system built for created collaboratively with key enterprises, z/OS 3.1 is designed to be a resilient critical workloads.

Below is a list of all z/OS 3.1 release and continuous delivery announcements. **Pl published through the z/OS Community page. To stay up to date, we encourage announcement!**

- Preview: z/OS 3.1 Announcement
- z/OS 3.1 Release Announcement
- z/OS 3.1 4Q 2023 Announcement
- z/OS 3.1 1Q 2024 Announcement
- z/OS 3.1 2Q 2024 Announcement
- z/OS 3.1 3Q 2024 Announcement
- z/OS 3.1 4Q 2024 Announcement
- z/OS 3.1 1Q 2025 Announcement

# z/OS Continuous Delivery

## How can I continue to get the latest enhancements ? ? What is the ‘NEW’ benefit of being in current release!!!



# IBM z/OS 3.2: A highly securable and scalable operating system for running mission-critical applications

*IBM z/OS 3.2, the next release of its flagship operating system for IBM Z, is designed* ***for hybrid cloud and AI****, including* ***support for IBM z17****,* ***new AI-infused capabilities****, and* ***enhancements to simplify IT management****. With IBM z17, the next release of z/OS is intended to* ***fuel innovation and growth****,* ***secure clients' most important data****, and* ***automate and improve operational efficiency****.*

## 3.2 Overview

### AI-infusion

Drive greater impact and deliver business growth with deep insights by using secure AI on critical data

### Transforming for Efficiency

Leverage industry standard technology to efficiently build, deploy, and manage workloads

### Cyber Resiliency

Strengthen security posture and leverage cyber resiliency capabilities to safeguard data

# Z Hardware Support

## IBM z17 (9175) Model ME1 Functions & Features

| |
|---|
| One hardware model, Five Features, 1-4 19” Frame System, Maximum 8 cores/chip, 2 chips/DCM<br>1 integrated I/O accelerator/chip. 5.5Ghz. |
| Up to 85 user partitions, 32 TB per partition, 208 CPUs/zIIPs/IFLs per partition, up from 200.<br>• Up to 16 TB per z/OS LPAR as of z/OS V2.5 |
| •2 CP chips on a Dual Chip Module (DCM), 5.4 GHz<br>•L1 Private 128K instruction & 128K data<br>•L2 Shared 36 MB / core, 270 MB effective shared<br>•10 x Private/Shared 36 MB L3 caches |
| 684 GB HSA, 64 TB maximum, 16 TB per drawer |
| Channel Subsystem scalability<br>•Up to six (6) Channel Sub Systems (CSSs)<br>• 4 Subchannel Sets per LCSS |
| HiperDispatch Enhancements |
| IBM Z Integrated Accelerator for AI |
| IBM Spyre AI Accelerator ( HW available: 4Q2025) |
| Hardware Instrumentation Services (CPUMF) |
| New machine instructions |
| Network Express |
| Crypto Express8S |
| OSA Express7S 1.2 1/10/25 Gb |
| BCPii support for z/OS Identity Mapping |

(z/OS support in blue)

| |
|---|
| Integrated I/O architecture – DPU |
| Enhanced QDIO ( EQDIO – New OSH CHPID Type ) |
| ICA-SR 2.0 for short-reach coupling<br>• 4 CHPIDs/port for CS5<br>• Same limits as z15/z16 with 48 adapters/96 ports. |
| Coupling Express3 LR 10Gb/25Gb optics for long-reach<br>• 4 CHPIDs/port for CL5/CL6<br>• 32 adapters, 64 ports per CEC |
| CF Level 26<br>•Parallel Sysplex scalability, virtualization, consolidation, and density enhancements.<br>•Removal of support for CF Flash Memory and CF images using dedicated GP processors. |
| Max coupling CHPIDs per CEC of all types: 384 |
| 10 GbE and 25 GbE RoCE Express 3 SR and LR (CX6-DX) |
| FICON Express 32- 4P ( 32G 4 port) |
| zHyperLink® Express 2.0<br>• Maximum 16 Adapters /32 ports |
| IBM Flexible Capacity for Cyber Resilience |
| TFP for Hardware<br>• Workload Classification<br>• Replacement Capacity |
| Power Consumption Reporting |

# Z Hardware Support

## IBM z17 (9175) Model ME1 Functions & Features & IBM z16 (3931) Model A01 Functions & Features

One hardware model, Five Features, 1-4 19” Frame System, Maximum 8 cores/chip, 2 chips/DCM
1 integrated I/O accelerator/chip.
5.4Ghz.

Up to 85 user partitions,
32 TB per partition,
208 CPUs/zIIPs/IFLs per partition, up from 200.

Up to 16 TB per z/OS LPAR as of z/OS V2.5

Channel Subsystem scalability
•Up to six (6) Channel Sub Systems (CSSs)
• 4 Subchannel Sets per LCSS

IBM Z Integrated Accelerator for AI

HiperDispatch Enhancements

Hardware Instrumentation Services (CPUMF)

New machine instructions

IBM Flexible Capacity for Cyber Resilience

IBM System Recovery Boost

Integrated I/O Architecture ( DPU)

IBM Spyre AI Accelerator ( 4Q2025)

Network Express

BCPii support for z/OS Identity Mapping

Power Consumption Reporting

TFP for Hardware
- Workload Classification
- Replacement Capacity

| | |
|---|---|
| •2 CP chips on a Dual Chip Module (DCM), 5.5 GHz<br>•L1 Private 128K instruction & 128K data<br>•L2 Shared 36 MB / core, 270 MB effective shared<br>•10 x Private/Shared 36 MB L3 caches | •2 CP chips on a Dual Chip Module (DCM), 5.2 GHz<br>•L1 Private 128K i & 128K d<br>•L3 Shared 32 MB / core, 192 MB effective shared |
| 684 GB HSA, 64 TB maximum, 16 TB per drawer | 256 GB HSA, 40 TB maximum, 10 TB per drawer |
| Max coupling CHPIDs per CEC of all types: 384 | Max ICP CHPIDs per CEC – 64;<br>Max coupling CHPIDs per CEC - 384 |
| ICA-SR 2.0 for short-reach coupling<br>• 4 CHPIDs/port for CS5<br>• Same limits as z15/z16 with 48 adapters/96 ports. | ICA-SR 1.1<br>Max ICA SR per CEC 48 adapters/96ports (same as z15) |
| Coupling Express3 LR 10Gb/25Gb optics for long-reach<br>• 4 CHPIDs/port for CL5/CL6<br>• 32 adapters, 64 ports per CEC | Coupling Express2 LR 10Gb (CX6-DX) PCIe adapter |
| CF Level 26<br>•Parallel Sysplex scalability, virtualization, consolidation, and density enhancements.<br>•Removal of support for CF Flash Memory and CF images using dedicated GP processors. | CF Level 25<br>•Retry buffers for cache and lock commands<br>•Cache residency time metrics<br>•Scalability improvements<br>•CF Request latency/performance improvements |
| 10 GbE and 25 GbE RoCE Express 3 SR and LR (CX6-DX) | 10 GbE and 25 GbE RoCE Express 3 SR and LR (CX6-DX) |
| zHyperLink® Express 2.0<br>• Maximum 16 Adapters /32 ports | zHyperLink® Express1.1<br>• Maximum 16 Adapters /32 ports |
| FICON Express 32 -4P | FICON Express 32S |
| OSA Express7S 1.2 1/10/25 Gb | OSA Express7S 1.2 1/10/25 Gb |
| Crypto Express8S | Crypto Express8S |

One hardware model,
Five Features, 1-4
19” Frame System

Up to 85 user partitions, 32 TB per partition,
200 CPUs/zIIPs/IFLs per partition, up to 224 Pus

Up to 16 TB per z/OS LPAR with z/OS V2.5

Channel Subsystem scalability
•Up to six (6) Channel Sub Systems (CSSs)
•4 Subchannel Sets per CSS

IBM Z Integrated Accelerator for AI

HiperDispatch Enhancements

Hardware Instrumentation Services (CPUMF)

New machine instructions

IBM Flexible Capacity for Cyber Resilience

IBM System Recovery Boost

z/OS Validated Boot

# IBM z17 Upgrade – Critical Resources

Check for these and possible new IBM HW documents when z17 is announced and documents are available.

- ✓ IBM z17 Technical Guide (Redbook)
- ✓ IBM z17 Technical Reference (Redbook)
- ✓ IBM z17 PR/SM Book ( Resourcelink- now IBM Documentation website )
- ✓ IBM z17 Installation Planning Book (Resourcelink – now IBM Documentation website)
- ✓ IBM z17 IOCP Guide ( Resourcelink - now IBM Documentation website)
- ✓ IBM z17 HMC , SE User Guides ( Resourcelink - now IBM Documentation website)
- ✓ IBM z Connectivity Handbook (Redbook)
- ✓ **Resourcelink IBM z17 Customer Exception Letter**
- ✓ CPU Measurement Facility Extended Counters Book (Resourcelink- now IBM Documentation website)
- ✓ IBM z Functional Matrix Redpaper ( Look for new version of this one : IBM Z Functional Matrix)

- ✓ ***z/OS z17 Upgrade Workflow for z/OSMF***, provided with APAR **OA66926** on V2.4 and higher
  - Only contains the z/OS steps for upgrading to z17
  - Installs into the /usr/lpp/bcp/upgrade directory, file z17_zOS_Upgrade_Workflow.xml
  - Recommended format as z/OSMF offers interactive assistance, and will run associated health checks.
  - Updates will be marked with FIXCAT IBM.Device.Server.z17-9175.RequiredService

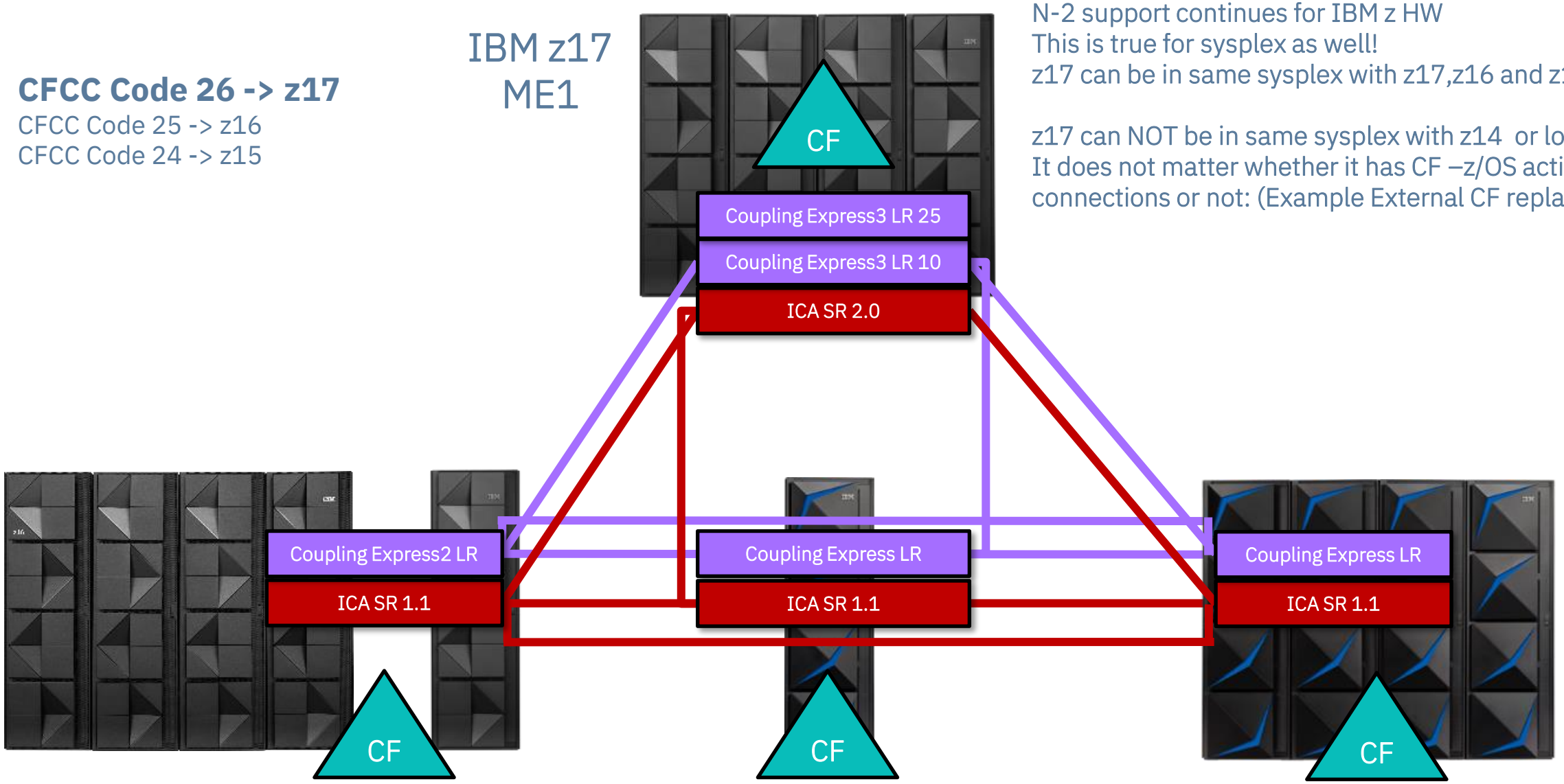
- ✓ ***z/OS z17 Upgrade Workflow Exported*** format
  - Single flat file, HTML format, to be found on IBM Documentation website
  - For those that don't wish to use z/OSMF, but no interactive assistance
  - Identical content to the z/OS z17 Upgrade Workflow for z/OSMF

HW publications in resourcelink has moved to IBM documentation website

# IBM z17 Coexistence

**CFCC Code 26 -> z17**
CFCC Code 25 -> z16
CFCC Code 24 -> z15

IBM z17
ME1




N-2 support continues for IBM z HW
This is true for sysplex as well!
z17 can be in same sysplex with z17,z16 and z15

z17 can NOT be in same sysplex with z14 or lower models.
It does not matter whether it has CF –z/OS active connections or not: (Example External CF replacement)

# IBM z17 – Where to find which feature is supported via PTF or base

Which z17 features and functions are supported by which z/OS release and whether via PTF or base.
In addition to our presentations , these are mentioned in related zHW PR/SM book.  This table will be updated for z/OS 3.2.
IBM z17 PR/SM Planning Guide Chapter 1 has table : [IBM Z and Linux One: PR/SM Planning Guide]

| Support for z17 | z/OS 2.4 | z/OS 2.5 | z/OS 3.1 |
|---|---|---|---|
| Base support[1,2] | PTF | PTF | PTF |

| Support for z17 | z/OS 2.4 | z/OS 2.5 | z/OS 3.1 |
|---|---|---|---|
| **Processors:** The maximum number of processors that can be configured per server:<br>For the IBM z17 Model ME1 (9175):<br>• Up to 208 processors can be configured as CPs, zIIPs, IFLs, ICFs, or optional SAPs<br>• The sum of CPs and zIIPs configured in a single z/OS LPAR cannot exceed:<br>– 208 on z/OS 2.4 or later in non-SMT mode<br>– 128 cores/256 threads on z/OS 2.4 or later in SMT mode | Yes | Yes | Yes |
| Two-way simultaneous multithreading (SMT) for zIIPs, IFLs, or SAPs. | Yes | Yes | Yes |
| Up to 40 TB of Redundant Array of Independent Memory (RAIM) per server | Yes | Yes | Yes |
| Up to 16 TB per z/OS LPAR through usage of the 2 GB large frame area (LFAREA).[3] | No | Yes | Yes |
| Up to 4 TB per z/OS LPAR | Yes | Yes | Yes |
| **Channel subsystems:** The maximum number of channel subsystems (CSS) that can be configured per server.<br>For the IBM z17 Model ME1 (9175)<br>• Up to six channel subsystems<br>• Four subchannel sets per CSS | Yes | Yes | Yes |
| HiperDispatch enhancements | Yes | Yes | Yes |
| IBM Z Integrated Accelerator for AI | PTF | PTF | PTF |
| Crypto Express8S toleration | PTF | PTF | PTF |
| Crypto Express8S support of Quantum Safe algorithms | PTF | PTF | PTF |
| OSA Express7S 1.2 1G/10G/25G | Yes | Yes | Yes |
| ICA-SR 2.0 for short-reach coupling:<br>• 4 CHPIDs/port for CS5<br>• 48 adapters, 96 ports per CPC | PTF | PTF | PTF |
| Coupling Express3 LR 10Gb/25Gb optics for long-reach coupling:<br>• 4 CHPIDs/port for CL5/CL6<br>• 32 adapters, 64 ports per CPC | PTF | PTF | PTF |

| Support for z17 | z/OS 2.4 | z/OS 2.5 | z/OS 3.1 |
|---|---|---|---|
| Support for 384 coupling CHPIDs and 64 ICP internal coupling channels | PTF | PTF | PTF |
| 10 GbE and 25 GbE RoCE Express 3 SR and LR (CX6-DX) | PTF | PTF | PTF |
| FICON® Express32G<br>• FICON Express32G LX<br>• FICON Express32G SX | Yes | Yes | Yes |
| Hyperlink® Express 2.0<br>• Maximum of 16 adapters / 32 ports | Yes | Yes | Yes |
| IBM Flexible Capacity for Cyber Resilience | Yes | Yes | Yes |
| New IBM z17 instructions (assembly language support) | PTF | PTF | PTF |
| CPU measurement facility (CPU MF) new extended counters | PTF | PTF | PTF |
| z/OS BCPii and HMC/SE enhanced security | No | No | PTF |
| Workload level sustainability and power consumption reporting | No | No | PTF |
| Workload Classification Pricing | No | PTF | PTF |
| Replacement capacity records for Tailored Fit Pricing for IBM Z Hardware (TFP-HW) | No | PTF | PTF |
| SCRT replacement capacity reporting | PTF | PTF | PTF |
| Integrated I/O architecture:<br>• Network Express<br>• Enhanced QDIO | No | PTF | PTF |
| ICSF clear key HMAC support through CPACF | No | PTF | PTF |
| IBM Z Deep Neural Network (zDNN) support for new NNDA instructions | No | PTF | PTF |
| IBM Open XL C/C++ for z/OS | No | Web | Web |

| Support for z17 | z/OS 2.4 | z/OS 2.5 | z/OS 3.1 |
|---|---|---|---|

**Notes:**

1. For z/OS 2.4 systems, this support requires the purchase of an extended support contract for IBM Software Support Services, plus PTFs.
2. To obtain the base support PTFs, use the required service fix categories (FIXCATs). For the IBM z17 Model ME1, use FIXCAT value IBM.Device.Server.z17-9175.RequiredService plus the FIXCATs for earlier processors

   Exploitation of many functions is provided by PTFs. To obtain the PTFs for new functions, use the appropriate exploitation fix category (FIXCATs). For the IBM z17 Model ME1, use the following FIXCAT value:

   • IBM.Device.Server.z17-9175.RecommendedService

   Recommended service PTFs are fixes that are recommended by IBM Support. To obtain the PTFs for recommended service, use the appropriate fix category (FIXCATs), as follows:

   • IBM.Device.Server.z17-9175.Exploitation
   • For the IBM z17 Model ME1, use the following FIXCAT value: IBM.Device.Server.z17-9175.RecommendedService
3. Starting with z/OS 2.5, z/OS supports an architectural limit of 16 terabytes (TB) of processor storage per LPAR. If more than 4 terabytes (4 TB) is defined to a z/OS LPAR, all memory beyond 4 TB is taken from the 2 GB large frame area. For information about the large frame area and the associated LFAREA parameter, see z/OS MVS Initialization and Tuning Reference. Earlier supported releases of z/OS support up to 4 TB of processor storage per LPAR.

# Z Hardware Support (z17)

## IBM z17 highlights (CD)

- Memory
  - Up to 16 TB of memory per z/OS instance, used by select middleware
    - Max memory per z17 drawer is now 16TB ( in z16 it was 10TB)

| | z17/z16 | z15 |
|---|---|---|
| LPAR Limit | 32 TB | 16 TB |
| z/OS 3.2 supports | 16 TB | 16 TB |
| z/OS 3.1 supports | 16 TB | 16 TB |
| z/OS 2.5 supports | 16 TB | 16 TB |
| z/OS 2.4 supports | 4 TB | 4 TB |

- All online real storage defined to the LPAR, more than 4 TB is part of the 2 GB LFAREA, in addition to what was specified in LFAREA.
- Allows 2 GB LFAREA to exceed the prior 4 TB limit. Real memory is available only for 2 GB pages.
- Adjust applications that make use of 2 GB frames to use more frames if applicable, such as Java, DB2, zCX. For AS that can not support 2 GB, consider using Dedicated Memory.

- Instructions
  - New z17 instructions for the compiler to accelerate numeric formatting, and hardware support for new numeric conversion instructions (exponents and arithmetic common in financial applications)
  - Enhancements to the Perform Locked Operation (PLO) instruction to provide a replacement solution for constrained transaction execution support
- Coupling Facility
  - A new level of coupling facility support, CFLEVEL 26, which provides Coupling and Parallel Sysplex enhancements such as:
    - Coupling limits enhancements (ICP buffers per CHPID increased from 7 to 8)
    - Support for new Coupling Express3 10GB/25GB long-reach coupling link
    - Support for new ICA SR 2.0 short-reach coupling link
    - Removal of support for CF Flash Memory (VFM) and CF images using dedicated GP process
- Enhanced CPACF support
  - Clear Key acceleration using a new CPACF instruction

# Z Hardware Support (z17)

## IBM z17 highlights (CD)

- Network Express card
  - Single card supports both OSA (for enhanced QDIO) and RoCE communications
  - New OSH CHPID for OSA EQDIO and new FID type NETH for RoCE support in z/OS Communications Server support
  - New Network Express cards are highly recommended to be used in z17:

    On new built z17 systems, new Network Express 10G/25G cards should be used, with the exception of the following limited cases where OSAExp7S 1.2 should be used:
    * OSAExp7S 1.2 1G for OSC CHPID type (connection to console)
    * OSAExp7S 1.2 10G/25G if using
      - z/OS 2.4
      - zVM Vswitch Layer3
      - VSE
  - Network Express cards have numerous advantages over the previous OSAExp7S:
    - ❑ Better RAS, latency and performance
    - ❑ Lower power consumption
    - ❑ Double the number of ports, which helps to reduce the number of cards, together with the new FICON, enabling space and energy savings.
- System Recovery Boost Enhancements ( Dynamic I/O Activation and more )
  (CD 2Q25 (3.1) – OA66655 and OA66837)



# Z Hardware Support (z17)

## Tailor Fit Pricing for Hardware for zIIPs (Workload Classification Pricing)

- Scale new workloads on z/OS with optimized TCO with the agility of cloud-like pricing for zIIP capacity
- Unlock a pool of always-on subscription zIIP capacity for AI inferencing on z/OS, zCX Classic and zCX for OpenShift workloads
- Consumption-based pricing delivers greater agility to be able to meet the dynamic demands of new workloads
- Does not require Tailor Fit Pricing for Software as a pre-requisite

### Tailored Fit Pricing for Hardware, with workload classification

New technology on IBM z17 enables z/OS to automatically classify, measure, and price workloads distinctly.

| | |
|---|---|
| Classification | New workloads are automatically assigned to a workload class: *AI inference workload* \| *z/OS Container Extensions workload* |
| Measurement | Each workload class's consumption is distinctly measured and reported. |
| Pricing | Optimized TCO for AI and zCX workloads with Tailored Fit Pricing for Hardware and new workload classification technology. |

### Use cases

**AI inference**

Leverage real-time, high-performance AI capabilities while keeping data secure and processing workloads efficiently.

**z/OS Container Extensions**

Run Linux-based applications natively in z/OS to modernize workloads while keeping data and applications close to core systems.

**zCX for OpenShift**

Extend OpenShift container orchestration to z/OS environments, enabling hybrid cloud and Kubernetes-based modernization.

# Z Hardware Support (z17)

## Exploitation of new z17 Telum II AI Accelerator (CD)

- The IBM z17 system is built with the IBM Telum II processor, which was introduced at the 2024 Hotchips Conference in August 2024
- 2nd Generation IBM Z Integrated Accelerator for AI on the Telum II processor provides Additional LLM (encoder) acceleration, Quantization (INT8) in addition to existing FP16, expanded Neural Network Primitives and in-drawer intelligent routing to other accelerators
  - IBM Deep Learning Compiler (DLC) to be enhanced to enable deep learning models to be deployed on IBM z17 exploiting more primitives .
  - IBM Z Deep Neural Network library (zDNN) software library is enhanced to support new accelerator capabilities

## Exploitation of IBM Spyre Accelerator (*Future* – Planned to be available 4Q2025)

- The IBM z17 system is built with the IBM Telum II processor, which was introduced at the 2024 Hotchips Conference in August 2024Along side the IBM Telum II processor IBM also announced the IBM Spyre™ Accelerator2. A purpose-built enterprise-grade accelerator offering scalable capabilities for complex AI models and generative AI use cases is being showcased. It features up to 1TB of memory, built to work in tandem across the eight cards of a regular IO drawer, to support AI model workloads across the mainframe.
- The IBM Spyre™ Accelerator expected to be available 4Q 2025 via PCIe card, will provide additional AI compute capabilities to complement the Telum® II processor. Together, they will create optimized environments to support multi-model methods of AI. The Spyre™ Accelerator is specially engineered to bring generative AI capabilities to the mainframe including running assistants, leveraging enterprise data contained in the system.

# Z Hardware Support (z17)

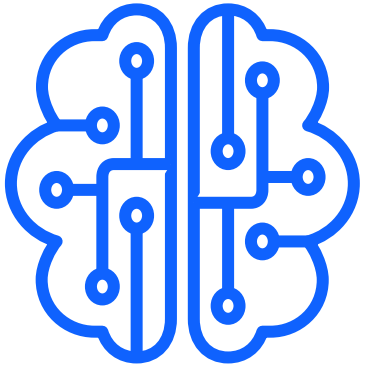
## z/OS BCPii server-side authentication support

## (Hardening Security between z/OS BCPii and HMC/SE) (Future CD2Q2025 OA65929)

- z/OS BCPii supports a new authentication model to allow map z/OS userIDs to HMC users and their granular authorizations instead of using SAF security controls
- Requires usage of the HWIREST BCPii API as well as both the location of where the BCPii application is running and the target or the request to be at z17 level

# AI Infused z/OS

Drive greater impact and deliver business growth with deep insights by using secure AI to unlock the potential of critical data



z/OS support for Telum II, AIU, and Spyre AI Accelerator to enable ***AI capabilities for mission-critical transactions*** to accelerate insights with near-zero latency, while ensuring data privacy and system availability.

A robust ecosystem of AI functionality including ***IBM AI Toolkit for IBM Z and IBM LinuxONE*** and ***IBM Db2 Analytics Accelerator.***

***EzNoSQL Python APIs*** for sophisticated data analysis and predictive modeling for z/OS and core business applications, extracting value from critical data to derive predictive business insights.

***DFSMS Object Access Methods (OAM)*** modernize access and management of unstructured data on z/OS, while allowing distributed environments simple access to core business data through industry standard ***REST APIs***.

# Transforming and Automating for Efficiency

Gain transparent, trustworthy insights, and leverage intelligent automation to efficiently manage z/OS and simplify technology infrastructures

Significantly reduce technical complexity and skill requirements with traceable AI-driven guidance and recommendations and to improve performance through network packet batching intelligence and new ***Workload Manager (WLM) Policy Advisor*** functionality.

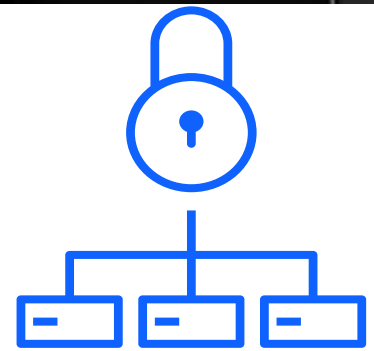
Greatly simplify the management of ***PARMLIB*** by driving automatic and consistent syntax validation of many z/OS PARMLIB members using ***REST APIs***, reducing risks of errors with little skill or effort needed.

Enable the ***automation of software update installations*** with a new set of ***REST APIs*** added to the ***z/OSMF Software Update application***, as well as implement a new application link that can instantly start a software update install process for an identified PTF from an external application.

A new set of ***REST APIs and user interface*** for storage management to create a consistent and intuitive interface to perform ***z/OS storage management*** tasks, reducing manual steps, skills, and time needed for new users to be productive.

# Cyber Resiliency

Protect mission critical data by leveraging quantum-safe cryptography, pervasive encryption, integrity scanning, and simplified security management to discover security posture insights.



***Granular data set encryption support for basic and large format data sets***, along with support to move data without decrypting and uncompressing, and support for ***direct encryption to tape*** to progress the quantum-safe, pervasive encryption journey.

Ecosystem support for ***IBM Threat Detection for z/OS*** (TDz) to enable the use of data access-based threat detection AI, with ***RACF userid containment***, to provide an additional mitigation option against potential cyberthreats.

Stronger ***crypto in-flight updates on z/OS*** and provide ***RACF-centralized digital certificates*** with multiple altnames, to better serve emerging industry standards at scale.

***IBM z/OS Communications Server Sysplex Distributor*** technology to distribute work across multiple ***z/OS Container Extensions*** (zCX) instances, providing higher availability, scalability, and improved resilience to Linux containers on z/OS.

# Application Development Ecosystem

## Python AI Toolkit for IBM z/OS 1.13 [5698-PAL] (3.1 CD 1Q25)

- Industry-leading IBM-owned Python packages relevant for AI and ML workloads available on z/OS, with optional IBM Elite Support
- Unlocks verified open-source software with supply chain security
- Familiar, flexible, and agile package installation process leveraging PyPI

IBM Z Content Solutions | Journey to open data analytics

### Enhanced zIIP Eligibility (CD)

- The zIIP eligibility list is extended to include Python-based applications
  - This change will assist clients, especially those working in Python for AI, to continue scaling up smoothly
  - Up to 70% of Python execution can be zIIP-eligible

## AI Toolkit for IBM Z and LinuxONE [Available on Passport Advantage]

- Popular used open-source AI frameworks with optional IBM Elite Support, fully adapted for IBM Z and LinuxONE
  - Includes IBM Z Accelerated for TensorFlow and IBM Snap ML, IBM Z Deep Learning Compiler, IBM Z Accelerated Serving for TensorFlow, IBM Z Accelerated for NVIDIA Triton Inference Server and just recently IBM Z Accelerated for PyTorch (4Q24)

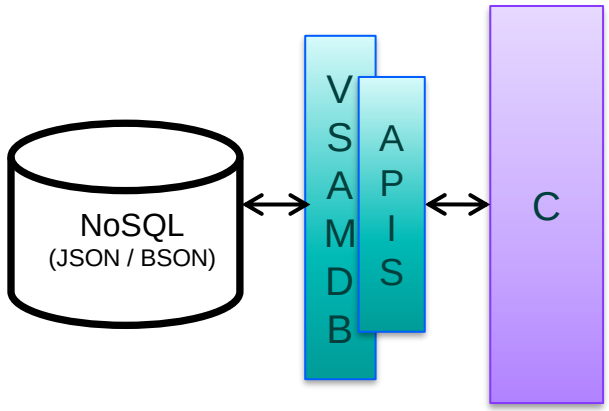
## IBM Synthetic Data Sets [Available on Passport Advantage] (3.1 CD 1Q25)

- A family of artificially-generated data sets designed to enhance predictive AI model training and LLMs to benefit IBM Z and LinuxONE enterprises
- 3 data sets:  Payment Cards; Core Banking and Money Laundering; Homeowner's Insurance
- Free trial available for PoC; Paid medium sized data sets (Pro); Paid larger-sized data sets (Enterprise)



# EzNoSQL Updates




## EzNoSQL APIs (CD)

- NoSQL for z/OS provides a key:value document store on z/OS and allows applications the ability to store open standard BSON/JSON (UTF-8) objects.
- EzNoSQL provides a set of modern APIs, with a C-based, key-value interface, to simplify the application effort needed to access NoSQL VSAMDB data sets on z/OS in real-time, at scale, and with consistency.
  - C, JAVA and now Python (CD 4Q24 (3.1) – OA66418) languages supported with a simple key-value interface to a NoSQL database
- New support to scan NoSQL documents sequentially using a new ordered index parameter (CD 1Q24 (2.5) – OA64954)

Content Solution website (https://www.ibm.com/support/z-content-solutions/eznosql) has everything needed to get started!

# Automatable z/OSMF Software Update (z/OS 3.2 )

- Automate software update installations via a new set of REST APIs is planned to be added to the z/OSMF Software Update application.

- Planned to ship Ansible roles and sample playbooks that leverage these new REST APIs as part of the Ansible Certified z/OSMF Collection

A new set of APIs to perform software update installation via the z/OSMF Software Update application.

  - Start a software update process
  - Retrieve the status of a software update process
  - Resume a suspended software update process
  - Cancel an in-progress software update process
  - Copy the saved output for a software update process


Reminder: Statements regarding IBM future direction and intent are subject to change or withdrawal, and represent goals and objectives only until z/OS 3.2 GA announcement is published.

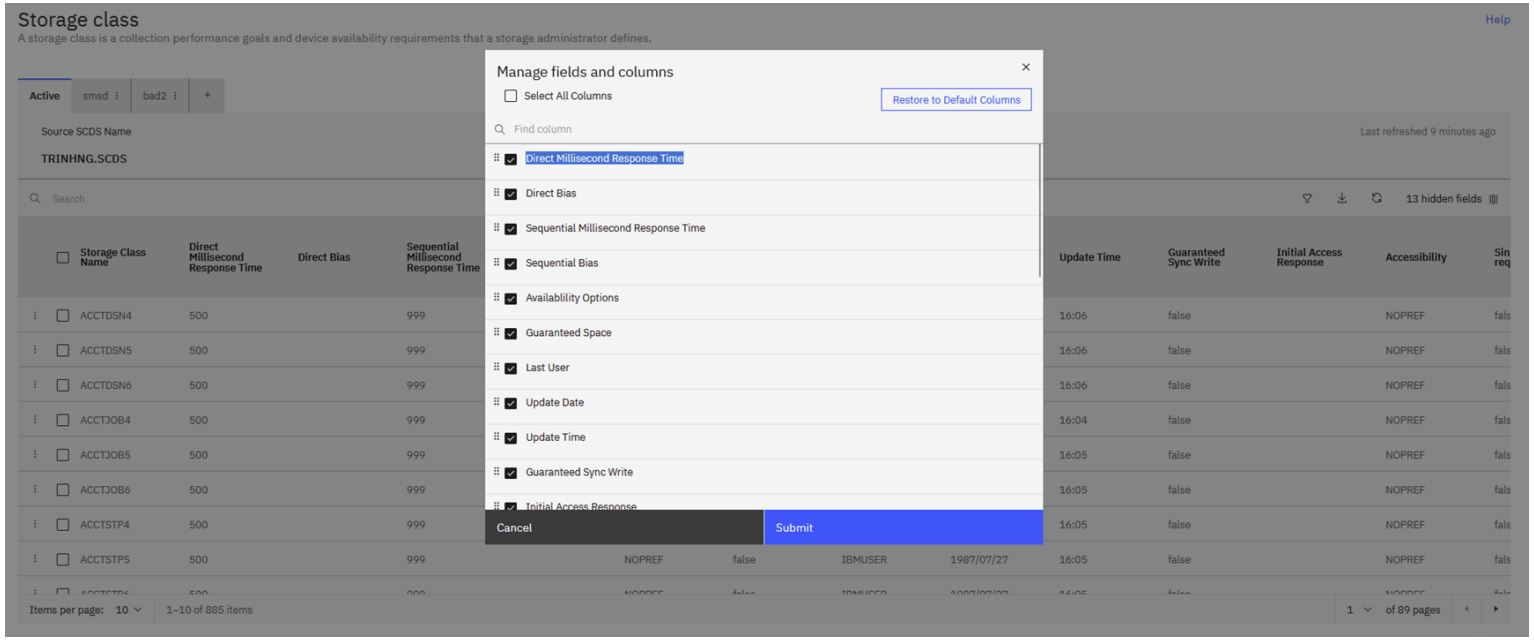


# z/OSMF Storage Management Plug-In (z/OS 3.2 )

- New user interface for DFSMS Storage Management (as a future alternative to ISMF)
  Instead of ISPF Panels using zOSMF for SMS (System Managed Storage) configuration management
- Storage Management REST API updates:
  - Ability to specify a Source Control Data Set
  - New API to retrieve Automatic Class Selection (ACS) routine source
- SMS changes to save and retrieve ACS routine source
  - ACS source saved to configuration when translated/validated on new release
  - Console command to export the saved source (if available) to a sequential dataset or pds member


This is beginning of a simplification journey and it is also a foundation for automation



# SRB Enhancements ( CD and z/OS 3.2)

- System Recovery Boost Enhancements ( Dynamic I/O Activation and more )
  (CD 2Q25 (3.1) – OA66655 and OA66837)

- System Recovery Boost Background:

System Recovery Boost support ( Available for z15 & z16 & z17)

IPL and Shutdown boost
- Speed boost –run the general-purpose processors at full speed if they are running sub-capacity normally
- zIIPboost –allow general purpose work to run on the available zIIPs for increased capacity
- Up to 60 minutes of boost at IPL and up to 30 minutes of boost at shutdown

Sysplex Recovery (2.4CD 3Q2020)–support for recovery process boosts
- Sysplex partitioning –boost surviving systems for recovery
- CF structure recovery –boost systems participating in structure recovery
- CF data sharing member recovery –boost all systems recovering
- Hyper Swap –boost systems participating in HyperSwap processing
- Up to 30 minutes per LPAR per Day

For z16 only, additional recovery process boosts added **(CD 2Q2022)**
- Client-selected middleware starts and restarts
- SVC dump processing
- HyperSwap configuration load and reload

Common Forgotten Items :

1 ) Do not forget to consider using SRB for dumps.RPBMINSZ dump option needs to be coded in addition to OPTIMIZE=YES. z/OS 3.1 has OPTIMIZE=YES as default.
2) WLM policy needs to be added to get benefit from your selected middleware starts and restarts

# SRB Enhancements

| Boosts are:<br>1. Speed: subcap can run fullcap<br>2. zIIP: allowing workload onto zIIPs<br>On by default in IEASYSxx BOOST=SYSTEM | SMP/E FIXCAT IBM.Function.SystemRecoveryBoost — Updated 10 April 2025 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | z16 and z17 | | | | | | | | | | |
| | z15 | | | | | | | z16 and z17 | | | |
| | System Recovery Boost | | | Recovery Process Boost* at MCL P46602.005 for IBM z15 Driver 41C (Bundle S29) | | | | Recovery Process Boost* | | | |
| | IPL Startup | Standalone Dump (no zIIP boost) | Shutdown | Sysplex Partitioning – planned or unplanned removal | CF Structure Recovery – rebuild or duplex | CF Datasharing Member Recovery-disconnect or failure from locking resources | Planned/Unplanned HyperSwap | SVC Dump | STC start/restart | HyperSwap configuration load | Dynamic I/O Activate |
| **Intended Duration** | 60 min | 60 min | 30 min | 2 min | 1 min | 1 min | 2 min | 2 min | 5 min | 2 min | 2 min |
| **Basis of use** | Auto | Auto | `S IEASDBS` | Auto | Auto | Auto | Auto | `CHNGDUMP SET,SDUMP, RPBMINSZ` threshold | WLM service definition `BOOST` attribute | Auto | Auto |
| **z/OS 2.3** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | | | | |
| **z/OS 2.4** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | |
| **z/OS 2.5** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | **PTF** | |
| **z/OS 3.1** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **PTF** |
| **z/OS 3.2** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** |

*Recovery Process Boost limited to 30 min per day per LPAR in aggregate. In V2.4 and higher, can be enabled or disabled with `S IEASRB,CLASS=RP,REQ=DISABLE|ENABLE`

GDPS provides configuration and orchestration parallelization in GDPS V4R2 and higher.

# Summary of z/OS 3.1 Recent CD Announcements

## IBM z/OS 3.1 1Q 2025 enhancements

- Semeru 21 Migration : -> Semeru 17 (EOM) on October 6th, 2025 (EOS) on September 30, 2026.
- zCX Sysplex Distributor Support for OpenShift ( 2.5 and 3.1 - OA66817, OA65756, PH62487, and/or PH49323)
- z/OS UNIX File System Health Checker -> OA67191 (Open) Detect missing directories that can lead to mount failures during IPL, commands...
- Multiple VIPA ranges for z/OS Container Platform (zOSCP) (2.5 and 3.1 - PH63940)
- Free entitlement of zCX with zCX 2.0 (OA66764 & OA66765)
  zCX longer requires usage entitlement via the IBM Container Hosting Foundation
  https://www.ibm.com/docs/en/announcements/withdrawal-from-marketing-container-hosting-foundation-zos-replacements-available?region=US

## IBM z/OS 3.1 4Q 2024 enhancements

- z/OSMF Desktop enhancements.-> Show more informational attributes of data sets and jobs, save data sets with specific encoding, and compare the uncatalogued data sets.
- z/OS Data Gatherer Enhancements -> Mon III data accessible via z/OS Data Gatherer Monitor III REST services
- Base Component for IBM z/OS (AIB) Enhancements. -> AIB can now register to ARM ( Automatic Restart Manager)
- EzNoSQL Python API support. -> In addition to C or Java, Python API support is available
- TLS 1.3 Support for Transparent Cloud Tiering (TCT). -> Latest TLS version support
- z/OS Container Extensions (zCX) 2.0 Enhancements. -> Support for dynamic VIPA network communication and ElasticSearch containers
- SMFLIM enhancements. -> (OA66028) New attribute to modify region limit for both above and below the line storage
  A stop processing attribute that allows for more granular control over the matching of the REGION rules is available.
  Additions to the existing filter REQMEMLIMIT to provide more control over matching the source of the MEMLIMIT value.

# Summary of z/OS 3.1 Recent CD Announcements

IBM z/OS 3.1 3Q 2024 enhancements

- z/OS DFSMS enhancements. -> Ability to convert a newly allocated encrypted data set to non-encryption during the first open
- Cloud Data Access (CDA) enhancements. -> Enhancement to ensure the validity of the data being sent to an S3 Cloud provider
- z/OS BCPii enhancements. -> (OA62934) console messages when it loses communication with a CPC, re-establishing, stopping attempts
  Display BCPII command enhancement to show status of the communication
- IBM Customized Offerings Driver enhancement. -> Updates to include a subset of a z/OS V2.5, including selected functions in z/OSMF and IBM 64-bit SDK for z/OS Java

# z/OS 3.1 Release Overview

## *Usability and Skills*

z/OSMF File compare utility, upload/download, Security Configuration assistant, Sysplex Mgmt and CFRM Policy Editor (CF structure sizing), Release Upgrade, ServerPac improvements, z/OSMF remote sysplex, Parmlib Syntax REST APIs, z/OSMF WLM Policy Advisor, Assembler exit reduction...

## *Application Development*

Artificial Intelligence, z/OS Container Extensions, Red Hat OpenShift, z/OS Container Platform, JSON Parser improvements, ISPF member generations, ABO, Java 11, 17 & 21, Node.js, Python, Go, Enhanced zIIP usage...

## *Enhancing Security*

RACF DB encryption, RACF custom fields, ICSF/Crypto, zACS monitor, compliance support, GIMZIP code package signing/validation, z/OS Validated Boot, CCA 8.2 updates...

## *Scalability & Performance*

Greater than 4TB memory, Dedicated Memory Pools, RMF UI improvements, CF performance and scalability, RMF reporting enhancements, RMF data gatherer enhancements...

## *Data Serving & Storage*

Cloud Data Access, EzNoSQL APIs, TCT enhancements, DFSMSrmm z/OSMF plug-in, simplified Catalog recovery & management, DFSMShsm & SMS enhancements, NFS Server enhancements, Union File System, Data Set File System...

## *Availability*

Anomaly Mitigation, PFA and RTD improvements, System Recovery Boost, XCF Notepad resiliency...

## *Systems Management*

AI infused z/OS, JES2 expanded policy support, Change Tracker, z/OS System Provisioning Service, z/OS Management Services Catalog, zWIC, SDSF new displays...

## *Networking*

zERT, RDMA over ROCE 3, SyslogD, FTP security, zERT reporting, SMTP AUTH...

# z/OS Announcements

## New no-charge products included with z/OS orders
## IBM SDK for Phyton, ZOAU, Open Enterprise Foundation for z/OS

July 1st 2024 Announcement

IBM Open Enterprise SDK for Python, IBM Z Open Automation Utilities (ZOAU), and IBM Open Enterprise Foundation for z/OS are available on July 1st , 2024, as bypassable requisites for z/OS 3.1.

As part of the optional z/OS products, these offerings are available at a no-cost license with no-cost Software Subscription and Support (S&S).

Effective on July 1st, 2024, both Open Enterprise SDK for Python S&S (5655-PYS) and Z Open Automation Utilities S&S (5698-PAS) are reduced to no cost.

If you are interested in adding these products separately outside of the new streamlined z/OS 3.1 order flow, then you can request them via 5698-PA1 (IBM Z Open Automation Utilities), 5655-PYT (IBM Open Enterprise SDK for Python) and 5655-OEF (IBM Open Enterprise Foundation for z/OS).

For more product-related information, find the corresponding webpages for Open Enterprise SDK for Python, Open Enterprise Foundation for z/OS, and Z Open Automation Utilities (ZOAU).

# IBM Semeru V11 and Java 17 and Semeru 21 and z/OS

**Background:**

z/OS 3.1 was designed with IBM Semeru 11 and later in mind. Java 8 was supported on z/OS 3.1

At GA, z/OS 3.1 had an overall dependency on 'IBM Semeru 11 RunTimeCertified Edition 64 bit only. Most z/OS 3.1 Functions at GA : z/OSMF, SDSF, RACF,CommServer, SCRT, HCD...

IBM has issued a statement of direction indicating a future plan to deliver IBM Semeru Java 17. ( **As of April 1 2024 Completed**)

IBM Semeru 11 was the most current level of Java available on z/OS at GA.

As of April 1 2024 Except Inforprint Server, all components supported Java 17.( IBM Semeru 11 is not orderable)

Java 17 was needed for all components of z/OS 3.1

## z/OS 3.1 z/OS functional dependency moves to Semeru 21 on March 31, 2025

- Another subsequent release of IBM Semeru Runtime Certified Edition for z/OS is anticipated to be required in the lifecycle of z/OS 3.1 in the future
- For other IBM products which have a dependency on Semeru 17 and 21, see here.

Officially published in z/OS 3.1 Planning for Installation, Software requirements for running z/OS 3.1. USE THIS DOCUMENT!

**Semeru 17 EOS is planned for Sept 30, 2026**

Semeru 11 has announced End of Service for November 30, 2025

**Java Semeru 11 was no longer orderable on Shopz with z/OS 3.1 as of April 1, 2024.**

**Java 8 has not been orderable since January 29, 2024**.

**Clients must move z/OS functions from Semeru 17 to Semeru 21 between March 31, 2025 and September 30, 2026**

Client applications that previously used the 31-bit Java SDK might need to be modified to run in 64-bit mode.
Learn more → https://www.ibm.com/products/semeru-runtime-certified-zos

**Use SMP/E FIXCAT IBM.TargetSystem-RequiredService.Semeru.** to find the fixes you need.**

# Latest Compiler Offerings on z/OS

IBM Enterprise COBOL for z/OS 6.4

IBM Automatic Binary Optimizer 2.2

IBM Enterprise PL/I for z/OS  6.1

z/OS 3.1 XL C/C++ (*entitled also to IBM Open XL C/C++ 1.1*)

- New IBM Open XL C/C++ 2.1 compiler (CD 2Q24 (2.4))
  - This new release adds 32-bit non-XPLINK and XPLINK compilation modes, z/OS batch support, and additional features to expand C/C++ development capabilities on z/OS.

IBM Semeru Runtime Certified Edition for z/OS 17 & 21

IBM Open Enterprise SDK for Node.js – z/OS 20

IBM Open Enterprise SDK for Python v3.12

IBM Open Enterprise SDK for Go v1.22

# SDSF Updates ( z/OS 3.1)

```
MENU 3.1      WSCZPLEX   SYSB
AND INPUT ===>
NAME        Description
AD          Address space diagnostic
APF         APF data sets
AS          Address space memory
BPXO        OMVS options
CF          Coupling facilities
CFC         CF connections
CFD         Couple data sets
CFS         CF structures
CFSA        CF structure activity
CK          Health checker
CS          Common storage subpools
CSR         Common storage remaining
DA          Active users
DASH        Dashboard
DEV         Device activity
DYNX        Dynamic exits
EDT         Eligible device table
ELOG        Event log
EMCS        Extended consoles
ENC         Enclaves
ENQ         Enqueues
ENQC        Enqueue contention
ENQD        Enqueued data sets
FS          File systems
GT          Generic tracker
H           Held output queue
HELP        SDSF help facility
I           Input queue
INIT        Initiators
JC          Job classes
JES         Job entry subsystems
JG          Job groups
JRG         JES resource groups
JRI         JES resource information
JRJ         JES resource by job
JRJC        JES class resource limit
```

```
MENU 3.1      WSCZPLEX   SYSB
AND INPUT ===>
NAME        Description
LINE        Lines
LLS         Link list sets
LNK         Link list data sets
LOG         System log
LPA         Link pack data sets
LPAR        Logical partitions
LPD         Link pack directory
MAS         Members in the MAS
MEM         Memory contents
MFD         Module fetch data sets
MFJ         Module fetch jobnames
MFM         Module fetch statistics
NA          Network activity
NC          Network connections
NODE        Nodes
NS          Network servers
O           Output queue
PAG         Page data sets
PARM        Parmlib data sets
PC          PC routines
PLEX        Sysplex information
PPT         Program properties
PR          Printers
PROC        Proclib data sets
PROD        Product enablement
PS          Processes
PUN         Punches
RAC         RACF classes
RACG        RACF groups
RACO        RACF options
RACP        RACF profiles
RACU        RACF users
RDR         Readers
REPC        WLM report classes
RES         WLM resources
RGRP        WLM resource groups
```

```
MENU 3.1      WSCZPLEX   SYSB
AND INPUT ===>
NAME        Description
RM          Resource monitor
RMA         Resource monitor alerts
SE          Scheduling environments
SMFD        SMF data sets
SMFO        SMF options
SMFS        SMF subsystems
SMSG        SMS storage groups
SMSV        SMS volumes
SO          Spool offload
SP          Spool volumes
SR          System requests
SRVC        Service classes
SSI         Subsystem information
ST          Status of jobs
SVC         SVC routines
SYM         System symbols
SYS         System information
SYSP        System parameters
UCB         Unit control blocks
ULOG        User session log
VMAP        Virtual storage map
WKLD        WLM workloads
WLM         WLM policy data
XCFA        XCF application servers
XCFM        XCF groups and members
XCFP        XCF signaling paths
```

98 main panels in z/OS 3.1

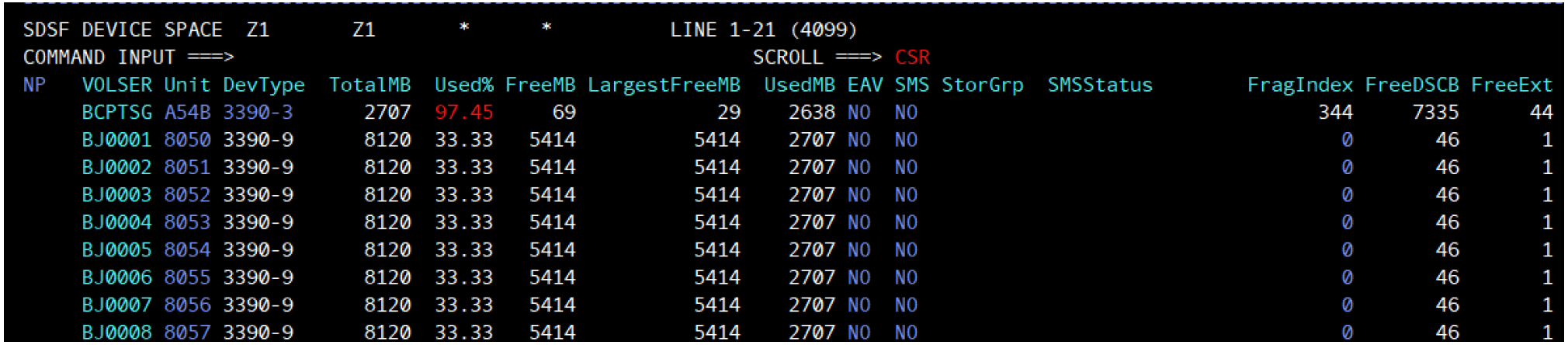
**(z/OS 3.1 )**

| | | | |
|---|---|---|---|
| **CF** | Coupling facilities | **RAC** | RACF classes |
| **CFSA** | CF structure activity | **RACG** | RACF groups |
| **EDT** | Eligible device table | **RACO** | RACF options |
| **ELOG** | Event log | **RACP** | RACF profiles |
| **JRG** | JES resource groups | **RACU** | RACF users |
| **JRJC** | JES class resource limit | **SMFD** | SMF data sets |
| **LPAR** | Logical partitions | **SMFO** | SMF options |
| **MFD** | Module fetch data sets | **SMFS** | SMF subsystems |
| **MFJ** | Module fetch jobnames | **UCB** | Unit control blocks |
| **MFM** | Module fetch statistics | **XCFA** | XCF application servers |
| **PLEX** | Sysplex information | **XCFP** | XCF signaling paths |
| **PPT** | Program properties | | |
| **PROD** | Product enablement | | |

# SDSF new functions in z/OS 3.2

| AW | Address space WLM class | Jobs |
|---|---|---|
| CAT | Catalog data sets | System |
| CMO | Common memory objects | Memory |
| DEVS | Device space | Devices |
| FXE | Function Registry | System |
| JRU | JES resource by userid | JES |
| MFP | Module fetch paths | Program |
| NAP | Network port activity | Network |
| RACD | RACF data sets | Security |
| RACF | RACF information | Security |
| RACR | RACF RRSF nodes | Security |
| RLOG | RACF log | Log |
| SMFL | SMF log streams | Measure |
| SMFR | SMF real time resources | Measure |

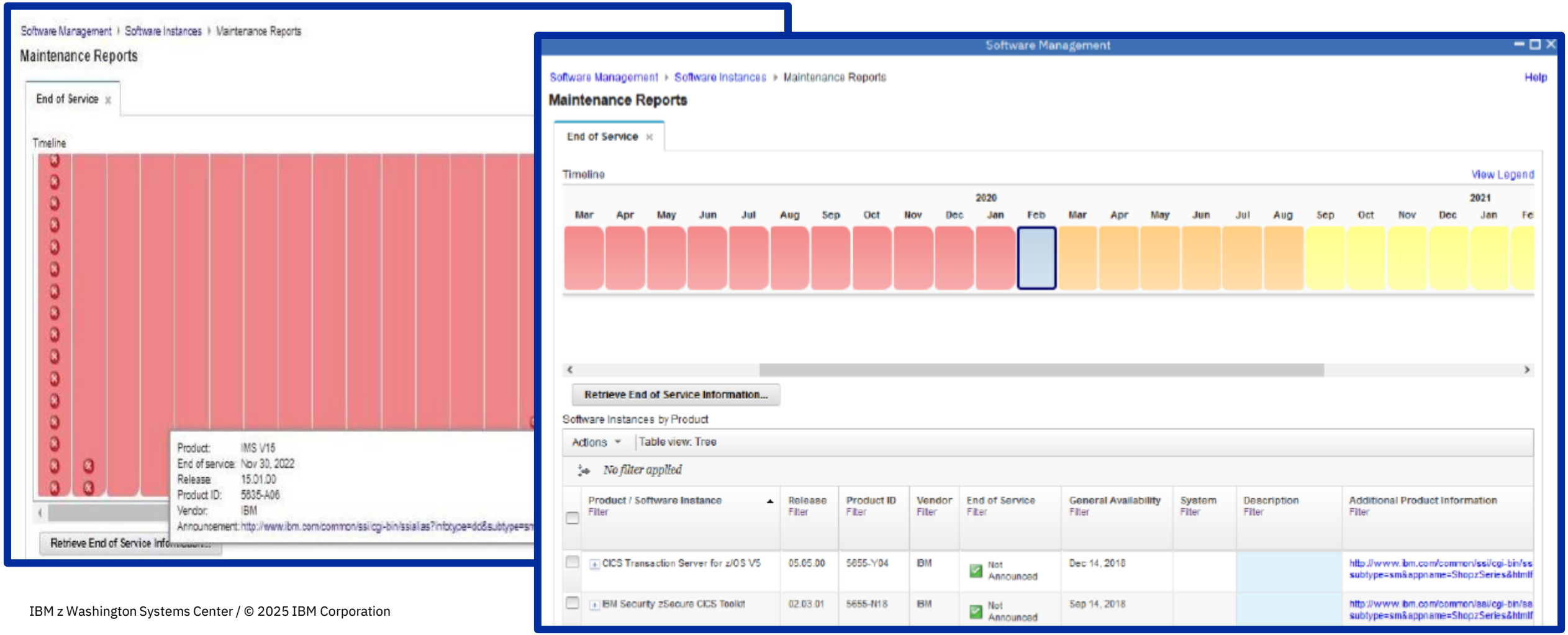
Reminder: Statements regarding IBM future direction and intent are subject to change or withdrawal, and represent goals and objectives only until z/OS 3.2 GA announcement is published.



# End Of Service Dates For IBM Products

- http://www.ibm.com/software/support/lifecycle/
- Use **z/OSMF Software Management** to look at the End of Service report

OK. This looks nice but I have never used z/OSMF to install all my existing product .
How can I get benefit from this ? – See Next Slide



# How to register existing SMPE CSIs to z/OSMF

z/OSMF makes thing easier to do a SW update / apply maintenance.

For z/OS 3.1 update we need to check all IBM products SMP/E CSI for missing fixcat report related to fixcat **IBM.TargetSystem-RequiredService.z/OS.3.1**

We can do it easy if SMP/Es are manageable with z/OSMF ? What about products that we did not use z/OSMF to install. How can I use z/OSMF to manage those ?

z/OSMF has many advantages but how I can use this capability for my existing CSI datasets / installed products?
How can we define a SW instance for existing installed SW in SW Management z/OSMF Plug-in ?

It is easy !. Follow the few steps:

1) Open the Software Management Task in z/OSMF
2) On the SW Management main panel Click ‘Software Instances’
3) On the Sofware Instance pane click Actions - > Add
4) Give a name and optionally write description
5) Enter System and Global CSI name of the existing /installed product
6) Select one or more zones and click Finish!

Common Assumption

1) I did not install my products with z/OSMF , I can not get benefit from z/OSMF capabilities and can not use SW update task . Let me install new versions via z/OSMF then I can start using those. These are not in my interest for now, since I did not install any product via z/OSMF yet.

Wrong!. You can register your current SMP/E CSI and start managing products via z/OSMF which also includes seeing EOS dates from z/OSMF and all other nice items like SW update , applying maintenance from z/OSMF SW update plug-in

# Summary Of z/OSMF Updates - z/OS 3.1 & CDs and z/OS 3.2 Preview

## Reduce learning curve and improve efficiency

- Modernized z/OS daily operations, start with data set, USS file and job operations
- NEW plugin– AI Control Interface for z/OS
- Higher efficiency and less error-prone for Sysplex CFRM policy editing
- Simplify security configuration and trouble shooting
- Incident Log supports PDUU with HTTPS
- Systems task supports validating connection status

## Easy to drive z/OS operations

- Enhanced Storage Management REST API
- NEW REST API for retrieving OPERLOG/SYSLOG messages
- NEW REST API for CFRM Policy operations
- NEW REST API for SCA based Security Validation and Security Provisioning
- NEW REST API for retrieving runtime value of z/OS Symbols
- Enhanced REST data set and USS file API and published tunning guide
- Enhanced REST Jobs API
- **Unleash z/OSMF capability to Ansible via Ansible collectionibm_zosmf**

## Enhanced Workflow engine for persisting, streamline and collaborating z/OS tasks

- Workflow supports signing steps and run steps with different user id
- Policy based Workflow Archive
- Flexible cross sysplex communication by supporting basic authentication
- Improved workflow UX
- Improved workflow management
- Supports polling REST API workflow step
- Enhanced Workflow Editor

## Improved z/OSMF management

- Verify security setup of z/OSMF nucleus with job or start command
- WLM CIM dependency removal
- NEW z/OSMF Configuration Trial

## Highlights with z/OS 3.2

- New DFSMS Plug-in
- Automation of z/OSMF Software Update Tasks

# Critical Resources

# Critical Resources

## *IBM z Content Solutions Center*

Single Engaging place for everything you need to understand and use functions and products!
https://www.ibm.com/support/z-content-solutions/

**Automation & Management**
- ServerPac Installation Using z/OSMF
- IBM z/OS Change Tracker
- Red Hat Ansible Certified Content for IBM Z
- Software update with z/OSMF
- z/OS Management Services Catalog

**Optimization**
- Cloud Infrastructure Center
- Cloud Provisioning and Management for z/OS
- Integrated Accelerator for zEDC
- Journey to LinuxONE
- Journey to sustainability with IBM LinuxONE
- Resilience
- System Recovery Boost
- Tailored Fit Pricing for IBM Z


**Modernization**
- Automating and shift-left testing for z/OS hybrid applications
- Continuous delivery and deployment
- Continuous integration for the hybrid cloud developer experience
- Discover and plan for z/OS hybrid applications
- EzNoSQL for z/OS
- IBM Z and Cloud Modernization Stack
- IBM Z Distribution for Zowe
- Z Digital Integration Hub
- z/OS Cloud Data Access
- z/OS Connect
- z/OS Container Platform
- z/OS Container Extensions (zCX)
- zCX Foundation for Red Hat OpenShift

**Security**
- ServerPac Installation Using z/OSMF
- IBM z/OS Change Tracker
- Red Hat Ansible Certified Content for IBM Z
- Software update with z/OSMF
- z/OS Management Services Catalog

**Prediction**
- AI Infusion into z/OS
- IBM Open Data Analytics for z/OS
- Journey to AI on IBM Z and LinuxONE
- Journey to open data analytics
- Machine Learning for IBM z/OS

Currently in IBM z Content Solutions

# GitHub For Presentations
# IBM z/OS Education Assistance

- What's new 3.1  GA and preview edition pdfs. +80 specific topic files

- 86 pdfs about details of the items related to V2.5
- 82 pdfs about details of the items related to z/OS 3.1 for now.
- z/OS 3.2 pdfs will be here after GA announcement.

z/OS github entry
(https://github.com/IBM/IBM-Z-zOS/tree/main/zOS-Education/zOS-V2.5- Education)

z/OS github entry
(https://github.com/IBM/IBM-Z-zOS/tree/main/zOS-Education/zOS-3.1- Education)

IBM-Z-zOS / zOS-Education / **zOS-3.1-Education** /

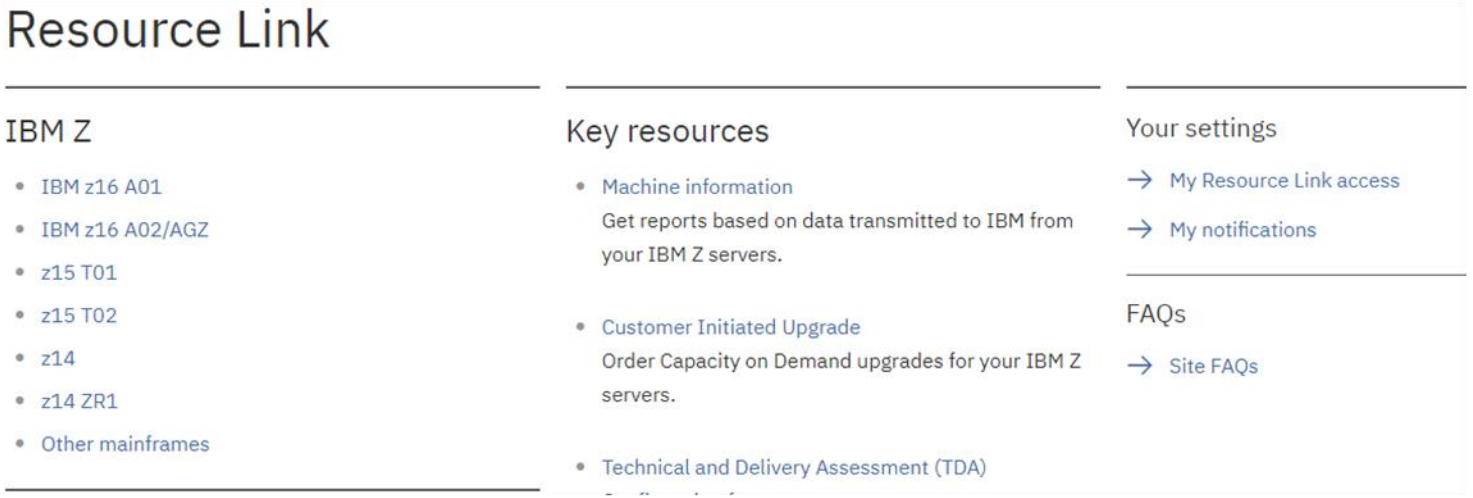
- IEA 3.1 zOSMF RTD REST API support.pdf
- IEA 3.1 zOSMF Run Workflow Signed Steps as Different User.pdf
- IEA 3.1 zOSMF SCA provision REST API and one-click fix.pdf
- IEA 3.1 zOSMF SCA supports SDSF.pdf
- IEA 3.1 zOSMF SCA validation REST API.pdf
- IEA 3.1 zOSMF Storage Management Class REST.pdf
- IEA 3.1 zOSMF Storage Management REST API Add volume to storage group.pdf
- IEA 3.1 zOSMF Sysplex CFRM policy editor REST API support.pdf
- IEA 3.1 zOSMF Sysplex CFRM policy editor enhancements and CF Sizing integration.pdf
- IEA 3.1 zOSMF WLM Policy Advisor.pdf
- IEA 3.1 zOSMF Workload Management support for WLM Policy Advisor.pdf
- IEA 3.1 zOSMF data set and file REST service enhancements.pdf
- IEA 3.1 zOSMF zERT Network Analyzer.pdf
- New SDSF functions in zOS_3.1.pdf
- SDSF Hidden Treasures.pdf
- What you need to know for Upgrading to zOS 3.1 - Oct 2023.pdf
- What's New in zOS 3.1 - GA Edition.pdf
- What's New in zOS 3.1 - Preview Announce Edition.pdf

# *My Notification – Subscription by HW & SW Products/Solutions*

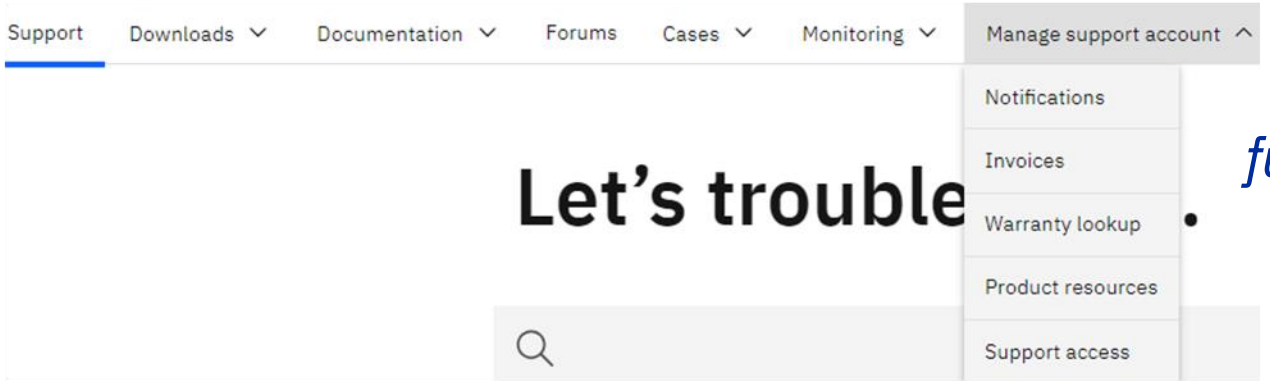
You can get notifications related to SW & HW Announcements , product updates ,alerts and more …

Here is just two options to do this:

1)




2)



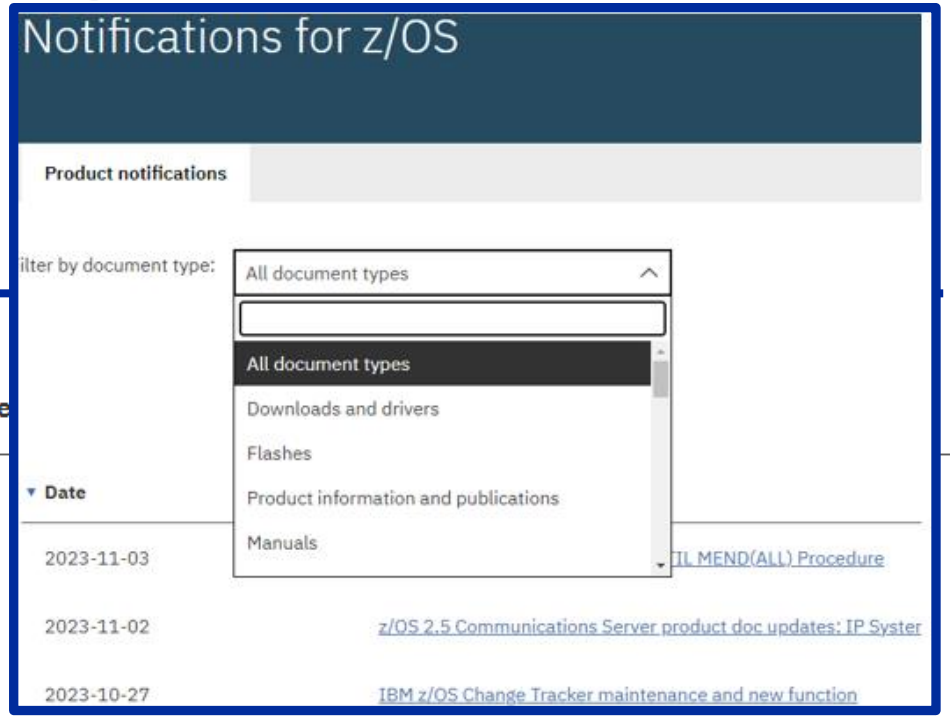

*There maybe more use cases in future for My Notification : Please start getting benefit today*

# *My Notification – Subscription by HW & SW Products/Solutions*

- You can choose which HW/SW products to subscribe out of mnay HW/SW entries

## ❑ z/OS

| | | | | |
|---|---|---|---|---|
| **XML Toolkit for z/OS** | → View | Links | Edit | — Unsubscribe |
| **z/OS (all current and future products)** | → View | Links | Edit | — Unsubscribe |
| **z/OS Change Tracker** | → View | Links | Edit | — Unsubscribe |
| **IBM z16 (3931-A01)** | → View | Links | Edit | — Unsubscribe |
| **IBM z16 (3932-A02)** | → View | Links | | |




## ❑ All Announcements

| ▲ Product | Notifications | RSS/Atom fe |
|---|---|---|
| **All Announcements** | → View | Links |

For just announcements you can use  above 2 options or directly from link

# *My Notification – Subscription by HW & SW Products/Solutions*

- Via ‘view’ option – historical entries can be seen filtered by doc type

z/OS → View

z/OS AI Services → View

Filter by document type: Technotes

Redbooks
Technotes
Problem solving information
Technotes(FAQs)
Preventative Service Planning

| Date | |
|---|---|
| 2023-11-03 | TIL MEND(ALL) Procedure |
| 2023-09-28 | Securing and Encrypting Network Traffic to z/OS Communications Server with Policy Agent Wo |
| 2023-07-08 | HiperSockets and Shared Memory Communications |
| 2023-01-03 | Running RMM with HSM or TSM (ADSM) |
| 2022-12-06 | WebSphere Application Server V9.0 Sample Installation Jobs for z/OS |
| 2022-11-10 | How to interpret EDC5xxxI and EDC8xxxI messages; C runtime messages. |
| 2022-10-26 | DFSMSrmm Enabling PDA Tracing in RMM |
| 2022-09-23 | DFSMShsm does not expire eligible data sets |
| 2022-09-13 | Creating Compressed Format PDSEs |
| 2022-08-30 | DFSMShsm Recycling volumes from one library to another and HSM is using many many more t |

- Via ‘Edit’ option - Control your subscription

Links Edit Unsubscribe

Links Edit Unsubscribe

## Select document types

Select the types of documents for which you want to receive notifications. Fields marked with an asterisk (*) are required.

- [x] Webcasts
- [x] News
- [x] Problem solving information
  - [x] Technotes(Troubleshooting)
  - [x] Known Issues
  - [x] Technotes(FAQs)
  - [x] Technotes
  - [x] APARs (Authorized Program Analysis Reports)
  - [x] Preventative Service Planning
- [x] LifeCycle
- [x] Downloads and drivers
- [x] Product information and publications
  - [x] Redbooks
  - [x] White papers
  - [x] New Function APARs
  - [x] Product lifecycle
  - [x] Product documentation
  - [x] Newsletters
  - [x] Manuals
- [x] Red Alerts
- [x] Flashes
- [x] Fixes
  - [x] High-Impact / Pervasive (HIPER)
- [x] Download
- [x] Install
- [x] Plan
- [x] Troubleshooting

# Critical Resources

*For Each Solution in IBM z Content Solutions Center:*

*Introduction - Big Picture- Get Started – Documentation – FAQs -Technical Resources …*
*Sample Solution - z/OS Container Extensions*

## z/OS Container Extensions (zCX)

Everything you need to get started quickly.

Get started ↓ | Play ov

### Big picture

- Introduction
- Big picture
- Get started
- FAQs
- Documentation
- Technical resources
- Related solutions
- What's new

1. Decide whether zCX is the right solution for you.

2. Prepare zCX instan

4. Deploy your first Linux container in your zCX instance.

5. Manage instance.

## How to get started

**Choosing zCX** | Planning for zCX | Provisioning a zCX instance | Deploying a Linux container | Managing your zCX instance

**Overview**

Use the following resources and references to consider whether zCX is the right solution for your IBM z/OS system.

Use this infographic to determine if zCX is a good fit for your software →

Learn about how zCX is similar to and different from Linux on IBM Z →

See what others think about zCX →

---

Start the zCX Trial to experience zCX in your own environment without purchasing IBM Container Hosting Foundation for z/OS or IBM Container Hosting Foundation (hardware feature code 0104). The zCX Trial enables full zCX capability for 90 days on your z/OS 2.4 and z14 or higher. Download APAR OA58969 to start the trial.

Learn more about the zCX Trial →

Download APAR OA58969 →

# z/OS Continuous Delivery – New Function Subscription

z/OS embraces continuous delivery through new function APARs
- Get weekly emails when APARs close with My Notification: start at https://www.ibm.com/support/entry/portal/support
- Look on the web, updated monthly: https://www-03.ibm.com/systems/z/os/zos/installation/zosnfapars.html

New Function APARs for the z/OS Platform

z/OS Library

When new function APARs are introduced in the IBM service stream, you can find them here collected in a convenient reference format. Use this information to review the latest enhancements from IBM and determine which ones to implement.

The APAR information is collected in the following files:

You can see the APAR details directly with one click

| File name | Description |
|---|---|
| **mvsstore.zosnewfu.html** | New function APARs for the past 12 months (HTML) |
| **mvsstore.zosallfu.html** | New function APARs for the past five years (HTML) |
| **mvsstore.zosnewfu.csv** | New function APARs for the past five years (CSV) |

Subscribe

- *z/OSMF,SDSF,DFSMS are one of the first implementers of CD.*
- All z/OS Components are participating in CD!

# Critical Resources

*For Each Solution in IBM z Content Solutions Center:*

*Introduction - Big Picture- Get Started – Documentation – FAQs -Technical Resources …*
*Sample Solution – Integrated Accelerator for zEDC*

## Integrated Accelerator for zEnterprise Data Compression (zEDC)

Everything you need to get started quickly.

Get started | Play overview | Transcript

- Introduction
- Big picture
- Get started
- Documentation
- Technical resources
- Notes
- Related solutions
- What's new
- Rate this content

Welcome to the Integrated Accelerat
technical resources.

The Integrated Accelerator for zEDC,
III, reduces the cost of storing, trans
Express adapter with on-chip compr
for the z15, up to 8 times faster appl
compared to a z14 with zEDC Expres

If you enabled compression selectiv
compression more pervasively, inclu

- Storage (SMF logstreams, BSAM
  processing and zFS data)
- In-application compression usin
- Databases (Db2® LOBs, Db2 arch
- Network transmission (Sterling D
- Linux

## Big picture

1. Assess data and applicati
compression.

4. Test and assess compres

## How to get started

z/OS data | z/OS zFS data | z/OS applications | z/OS databases | Network transmission | Linux

**Overview**

Use z/OS® data compression for SMF logstreams, BSAM and QSAM data sets, and DFSMShsm and DFSMSdss processing. For compression of zFS data, see the z/OS zFS data tab.

**Planning**

**If you have not been using zEDC**, plan for the following.

Compression of data:

- At the data set level, using the COMPACTION option of a data class.
- At the system level, using the COMPRESS parameter in the IGDSMSxx member of parmlib, which defines options for the storage management subsystem (SMS).

Compression during DFSMShsm and DFSMSdss processing:

- During migration and backup, using the ZCOMPRESS parameter of the SETSYS command.
- Of dump data, using the ZCOMPRESS parameter of the DEFINE DUMPCLASS command.

**If you have been using zEDC**, review your definitions for restrictions that you might remove, to apply compression more broadly. For example:

- Compression of sequential data sets that is selectively enabled by application.

# C3 ( Comprehensive Content Collections)

The following **comprehensive content collections (c3s)** provide all of the product documentation for a function in one place. When there is a content solution associated with a c3, the title of the c3 is a link to the content solution homepage.

https://www.ibm.com/docs/en/zos/3.1.0?topic=z-content-solutions

https://www.ibm.com/docs/en/zos/2.5.0?topic=z-content-solutions

Content solutions help you get started and provide a single location for all of the technical content about the function, including videos, workflows, articles, and more.

This is pdf version of IBM z Content Solutions' function/solution specific docs.

| Title | Abstract Link | PDF Link | Last Updated |
|---|---|---|---|
| Cascading FlashCopy | Abstract | PDF | September 2023 |
| Cloud Provisioning and Management | Abstract | PDF | September 2023 |
| Infusing AI into IBM z/OS | Abstract | PDF | December 2023 |
| Integrated Accelerator for zEDC | Abstract | PDF | September 2023 |
| JES2 Email Delivery Services | Abstract | PDF | September 2023 |
| JES2 Small Environment and NOTIFY Enhancements | Abstract | PDF | September 2023 |
| Pervasive Encryption for IBM Z | Abstract | PDF | September 2023 |
| RACF Support for IBM Z Multi-Factor Authentication (IBM MFA) | Abstract | PDF | September 2023 |
| Remote Pair FlashCopy for XRC | Abstract | PDF | September 2023 |
| System Recovery Boost | Abstract | PDF | December 2023 |
| Tailored Fit Pricing for IBM Z | Abstract | PDF | January 2024 |
| Validated Boot for z/OS | Abstract | PDF | November 2023 |
| z/OS Compliance Data Collection | Abstract | PDF | September 2023 |
| z/OS Container Extensions | Abstract | PDF | December 2023 |
| z/OS Trusted Key Entry Workstation (TKE) | Abstract | PDF | September 2023 |
| z/OS Workload Interaction Correlator | Abstract | PDF | September 2023 |


# *IBM Z Trial Updates*

https://www.ibm.com/z/trials

https://early-access.ibm.com/software/support/trial/cst/welcomepage.wss?siteId=1135&tabId=2999&w=1

IBM Z software trials include pre-configured environments and guided scenarios that demonstrate the real-world value and usage of z/OS applications.
Over 20 different IBM Z products are included, and scenarios are designed to engage users of all experience levels.

**Recently added and updated trials**

| | |
|---|---|
| IBM Z Development and Test Environment → | IBM Application Discovery and Delivery Intelligence → |
| IBM Application Delivery Foundation for z/OS → | IBM Db2® Administration Foundation for z/OS → |
| IBM CICS TX → | IBM Db2 AI for z/OS → |

Have you tried any z trials ?


# *IT Operations Software Trials*

https://www.ibm.com/z/trials

- NEW! IBM z/OS Data Gatherer and IBM SMF Explorer
- IBM z/OS Automation via Red Hat Ansible Certified Content for IBM Z
- IBM z/OS Management Facility (z/OSMF Configurations)
- IBM z/OS Management Facility (z/OSMF Core Services)
- IBM z/OS Management Facility (z/OSMF Plug-ins)
- IBM Z ChatOps
- Zowe
- IBM Service Management Unite Automation
- IBM z/OS Workload Interaction Navigator
- IBM Z OMEGAMON for JVM

# List of Fixcats / Recent and Some nice ones

*How can I find out if there is any new fixcats exists? In addition to learning it during periodic maintenance applying a new ptf in new fixcat*

For All Fixcats and Descriptions Check Website [IBM Fix Category Values and Descriptions]

| Fix Categories | Description |
|---|---|
| IBM.Coexistence.z/OS.3.1 | Fixes that allow z/OS V2.4 and z/OS V2.5 to coexist with, and fallback from, z/OS 3.1. |
| IBM.DrivingSystem-RequiredService | Fixes required on a z/OS driving system to install a new release of z/OS or other software products. May include fixes for z/OSMF, SMP/E, or other components and products used during the software installation process. |
| IBM.TargetSystem-RequiredService.z/OS.3.1 | Fixes required on other IBM products to allow them to run on z/OS 3.1. |
| IBM.Function.HealthChecker | Fixes that enable Health Checks introduced in the service stream. |
| IBM.z/OS.AIFramework | Fixes and enhancements for AI Framework for IBM z/OS, AI System Services for IBM z/OS, and AI use case providers. |
| IBM.Function.DFSMSCloudDataManager | Fixes for IBM z/OS DFSMS Cloud Data Manager. |
| IBM.Function.DFSMSCloudStorage | Fixes for the DFSMS cloud storage functions. |
| IBM.Function.EzNoSQL | Fixes and support for EzNoSQL for z/OS, and fixes for other z/OS software to support EzNoSQL for z/OS. |
| IBM.Function.GDPS.PPRC-HyperSwap-Manager | Fixes for the GDPS/PPRC HyperSwap Manager solution offering. |
| IBM.Function.PricingInfrastructure | Fixes to enable and to fix z/OS software pricing infrastructure. |
| IBM.Function.SafeguardedCopy | Fixes for the Safeguarded Copy function. |
| IBM.Function.SMFLogstream | Fixes that enable SMF recording to logstream. |
| IBM.Function.SMFRecord | Fixes that create new SMF records, or modify, enhance, or discontinue recording of existing SMF records. |
| IBM.Function.SystemRecoveryBoost | Support and fixes for the IBM z System Recovery Boost function. |
| IBM.Function.UNIXFileBackup | Fixes for the z/OS UNIX file backup and restore function. |
| IBM.Function.ValidatedBoot | Support and fixes for the Validated Boot for z/OS function. |
| IBM.Function.zCX | Fixes for IBM z/OS Container Extensions (IBM zCX). |
| IBM.Function.zCX-OCP | Fixes for IBM zCX Foundation for Red Hat OpenShift. |
| IBM.Function.zEDC | Fixes that enable or exploit the zEnterprise Data Compression function. |
| IBM.Function.zHighPerformanceFICON | Fixes that are required to exploit High Performance FICON. |
| IBM.Function.zHyperLink | Fixes for the zHyperLink function. |
| IBM.Function.ZSort | Fixes and enhancements to exploit the IBM Integrated Accelerator for Z Sort. |

*You can check this website to see newly created Fixcats*

# Critical Resources

## *List of Fixcats / Recent and Some nice ones*

For All Fixcats and Descriptions Check Website [IBM Fix Category Values and Descriptions]

| Fix Categories | Description |
|---|---|
| IBM.Device.Server.z16A02-3932.Exploitation | Fixes that are required to exploit the capabilities of the IBM z16 Model A02 server. |
| IBM.Device.Server.z16A02-3932.RecommendedService | Fixes that are recommended to run z/OS and other software products on the IBM z16 Model A02 server. These fixes are identified in the Recommended Service section of the hardware PSP bucket. |
| IBM.Device.Server.z16A02-3932.RequiredService | Fixes that are required to run z/OS and other software products on the IBM z16 Model A02 server. |
| IBM.Device.Server.z16-3931.Exploitation | Fixes that are required to exploit the capabilities of the IBM z16 server. |
| IBM.Device.Server.z16-3931.RecommendedService | Fixes that are recommended to run z/OS and other software products on the IBM z16 server. These fixes are identified in the Recommended Service section of the hardware PSP bucket. |
| IBM.Device.Server.z16-3931.RequiredService | Fixes that are required to run z/OS and other software products on the IBM z16 server. |

**IBM z17**

| Fix Categories | Description |
|---|---|
| IBM.Device.Server.z17-9175.Exploitation | Fixes that are required to exploit the capabilities of the IBM z17 server when running z/OS and other software products on the IBM z17 server, or running z/OS in a sysplex which includes an IBM z17 server. |
| IBM.Device.Server.z17-9175.RecommendedService | Fixes that are recommended to run z/OS and other software products on the IBM z17 server when running z/OS on the IBM z17 server, or running z/OS in a sysplex which includes an IBM z17 server. |
| IBM.Device.Server.z17-9175.RequiredService | Fixes that are required to run z/OS and other software products on the IBM z17 server when running z/OS on the IBM z17 server, or running z/OS in a sysplex which includes an IBM z17 server. |

*New z17 Fixcats!*

Common Issues :

Before implementing a new SW/HW function / device:

1) Make sure you received recent HOLDDATA . Receive HOLDDATA automatically and periodically.
2) Check this website and if there is fixcat , apply those ptfs in that fixcat

# z/OS Sponsor User Program

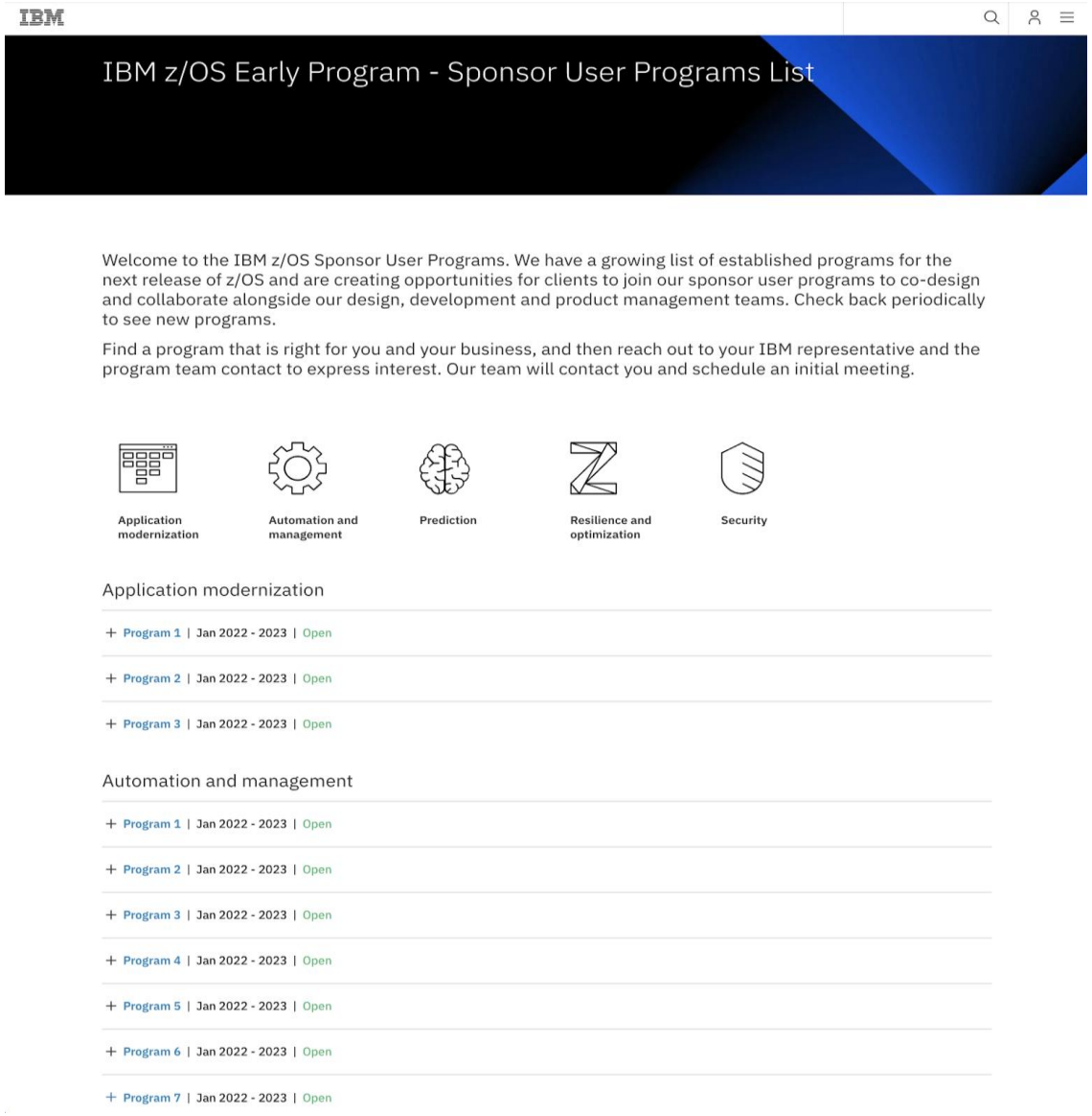
## Are you interested in learning more about how to influence the future of z/OS?

As a sponsor user, you can focus on a specific project. You can participate in a variety of activities such as design reviews and provide user experience feedback on existing tasks and tools.

You choose your level of involvement.

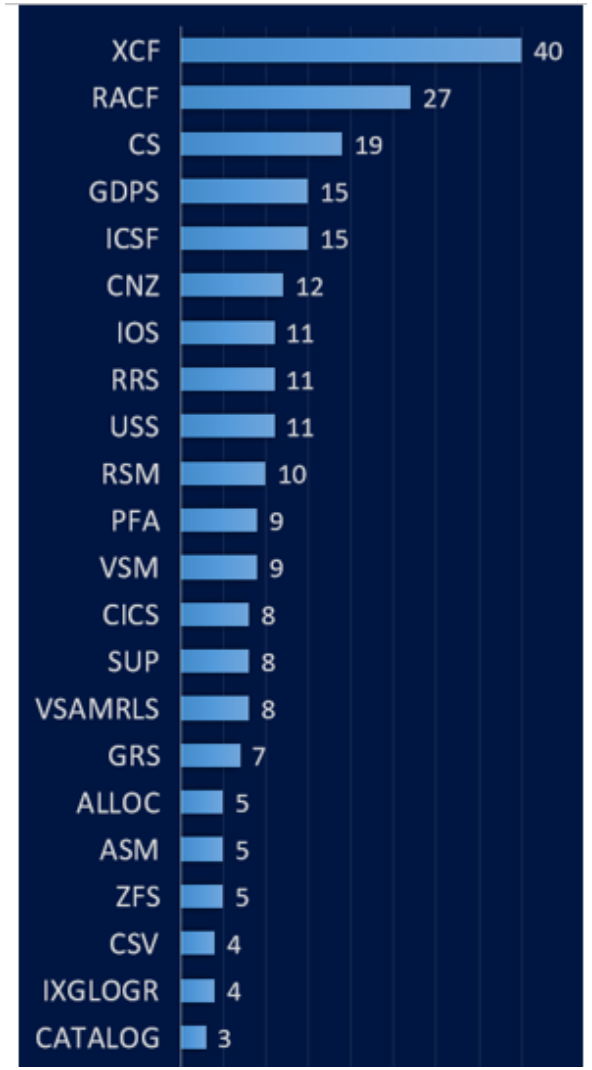
Some benefits include previewing and influencing upcoming functions and products to ensure we meet your user needs.

Contact zos@ibm.com with your information and request to be invited to our IBM z/OS Sponsor User Programs List website.



# *Inappropriate Health Checker Policy*

## # Of Health Checks Group By Owner





Currently **286** Base Health Checks exist that will help you improve your resiliency.

How to Print Health Checks Information in Batch Mode

SYS1.SAMPLIB(Hzsprint)

```
//HZSPRINT EXEC PGM=HZSPRNT,TIME=1440,REGION=0M,PARMDD=SYSIN
//SYSIN DD *
CHECK(*,*) ,EXCEPTIONS
//SYSOUT   DD SYSOUT=A,DCB=(LRECL=256)
```

| | |
|---|---|
| CHECK(*,*) | Shows all HCs |
| CHECK(*,*), EXCEPTIONS | Shows HCs with exceptions |

Common Issues : Questions to ask

1. Are you tracking IBM.Function.HealthChecker fixcat ?
2. Are you monitoring HC alerts ? Do you have automation for HC alerts ?
3. When did you last check your policy to make sure you activated back HCs temporary deactivated before?
4. Did you deactivate or decrease the priority of critical HC – I know let me check that later -?
5. What is the default setting for new HCs according to your policy ?

# Common Issues : Migration HCs

## *Not activated Migration Health Checks*

Migration Health Checks should be used prior to your upgrade to the new z/OS release to assist with your upgrade planning, and re-run after your upgrade to verify that the upgrade action was successfully performed

| | |
|---|---|
| zOSMIGREC_ROOT_FS_SIZE | *For 3.1* |
| XCF_SYSPLEX_CDS_CAPACITY | *For 2.5 and 3.1* |
| XCF_SYSSTATDET_PARTITIONING | *For 3.1* |
| RSM_MEMLIMIT | *For 2.5 and 3.1* |
| ALLOC_TAPELIB_PREF | *For 3.1* |
| SUP_ASVT_ABOVE_16M | *For 3.1* |
| ZOSMIGV2R4_NEXT_WLM_SERVCOEFF | *For 2.5 and 3.1* |
| ZOSMIGV2R4_NEXT_VSM_CHECKREGNLOSS | *For 2.5 and 3.1* |
| JES2_UPGRADE_CKPT_LEVEL_JES2 | *For 2.5 and 3.1* |
| SDSF_ISFPARMS_IN_USE | *For 3.1* |
| SDSF_CLASS_SDSF_ACTIVE | *For 2.5 and 3.1* |
| RMF_DDS_OPTS | *For 2.5 and 3.1* |
| USS_HFS_DETECTED | *For 2.5 and 3.1* |

| | |
|---|---|
| ZOSMIGV2R4_NEXT_CS_OSIMGMT | *For 2.5 and 3.1* |
| ZOSMIGV2R4_NEXT_CS_DCAS_NTVSSL | *For 2.5 and 3.1* |
| ZOSMIGV2R4_NEXT_CS_TN3270_NTVSSL | *For 2.5 and 3.1* |
| ZOSMIGV2R4_NEXT_CS_FTPSRV_NTVSSL | *For 2.5 and 3.1* |

| | |
|---|---|
| ZOSMIGV2R5_NEXT_CS_LSA | *For 3.1* |
| ZOSMIGV2R5_NEXT_CS_OSADLH | *For 3.1* |
| ZOS31MIG_SSH_CONFIG | *For 3.1* |
| ZOS31MIG_SSHD_CONFIG | *For 3.1* |
| ISPF_WSA | *For 2.5 and 3.1* |

VERY USEFULL!

Check Missing PTFs in FIXCAT IBM.Function.HealthChecker and apply ptfs to get all Health Checks and activate them (Migration HCs are usually come as inactive )

*Please Revisit Your Health Checker Policy and plan for actions for the HCs that you decreased Severity or WTO type once upon a time for the ones you might said 'lets decrease it so that we will get rid of alarms and we will check them later ' and forgot them totally ☹. (Some common usage issue )*



***Health Checks can be directly invoked by the z/OS 3.1 Upgrade Workflow when using z/OSMF***

# *New Health Checks*

**New in z/OS 3.1:**
WLM_SCLASS_SYSSTC ( OA62316) CD 1Q-2025 ( z/OS V2R5 and z/OS 3.1)
ZFS_CACHE_PERFORMANCE(APAR OA63911, applies to z/OS 3.1 and V2R5) **CD 1Q-2024**
ZFS_EXCEPTIONS (APAR OA63911, applies to z/OS 3.1 and V2R5) **CD 1Q-2024**
ICSF_CLEAR_KEYS
ICSF_STATUS
IXGLOGR_LOCALBUFFERUSAGE (APAR OA64676, applies to z/OS V2R5 and z/OS 3.1)
RSM_FREEMAINEDFRAMES
SUP_ASVT_ABOVE_16M

**Changed in z/OS 3.1:**

RACF_PASSWORD_CONTROLS (added password phrase interval)
VSAMRLS_QUIESCE_STATUS (APAR OA64048)

**Changed in z/OS V2R5:**

RACF_SENSITIVE_RESOURCES
XCF_TCLASS_CLASSLEN

**New in z/OS V2R5:**
VSM_CheckRegionLoss
RACF_ADDRESS_SPACE
RACF_ERASE_ON_SCRATCH
RACF_PROTECTALL_FAIL
RACF_PTKTDATA_CLASS
RACF_SYSPLEX_COMMUNICATION
IOS_ENDPOINT_SECURITY_LCUPATHS
ZOSMIGV2R5_NEXT_CS_OSADLH
ZOSMIGV2R5_NEXT_CS_LSA
ZOS31MIG_SSH_CONFIG(APAR OA65071 applies to z/OS V2R4 and V2R5)
ZOS31MIG_SSHD_CONFIG(APAR OA65071 applies to z/OS V2R4 and V2R5)

- If you have statements that suppresses these new HCs, you can not see exceptions. Do not code statements to suppress by default.
- Update your check customization for modified IBM Health Checker for z/OS checks.
- Changes that IBM makes to the checks provided by IBM Health Checker for z/OS can affect any updates you might have made.

# RMF & z/OS Advance Data Gatherer (ADG) Structural Changes

- A new browser-based UI is available with z/OS 3.1 for monitor 3 metrics and reports **(New 3.1 )**
- The new UI supports setting thresholds and issuing alerts **(New 3.1 )**

A new DDS server is coming with 64-bit exploitation and additional security options **(New 3.1)**

**Pre-Req For z/OS V2.5 ( V2R4 to 3.1 effected as well)**

For z/OS V2.5, RMF and z/OS Data Gatherer, had several data sets restructured. Follow the RMF upgrade action to make the necessary parmlib and SYSPROC changes. If you are moving from V2R4 to 3.1 make sure you made all these changes (When the PTFs for APARs OA58281 and OA58759 are applied to z/OS V2.3 or V2.4, the RMF product is restructured into the Data Gatherer and Reporter components)

Some dataset names are changed in linklist,LPA. Procedures are changed.
For all details check in detail z/OS 3.1 Upgrade Workflow

**Pre-Req For z/OS 3.1**

For all details check in detail z/OS 3.1 Upgrade Workflow

**Clients on z/OS V2.4 or later with an RMF license or z/OS V2.5 or later with an ADG license are entitled to use the z/OS Workload Interaction Correlator at no additional charge** ( See Next Slide)

# z/OS Workload Interaction Correlator (WIC)

z/OS Workload Interaction Correlator enables z/OS components and middleware to generate cost-effective and enriched summary data. In z/OS 3.1:

**Clients on z/OS V2.4 or later with an RMF license or z/OS V2.5 or later with an ADG license are entitled to use the z/OS Workload Interaction Correlator at no additional charge.**

**For more information on this entitlement and to view IBM recommended best practices for proactive problem diagnosis, see this IBM Best Practice: Always Collect Correlator SMF Records flash.**

z/OS Workload Interaction Correlator support for z/OS Workload Interaction Navigator Inspector enables subject matter experts to **proactively identify workload anomalies so they have an opportunity to diagnose and address these anomalies before workload impacts, critical situations, and outages occur.** Correlator enables Inspector analysis over the last 8 weeks to transform activity anomalies with context into anomaly signatures and correlate and prioritize them based on workload resilience risk.

z/OS component exploitation of z/OS Workload Interaction Correlator has been extended to include I/O Supervisor (IOS), providing clients with 5-second synchronized, micro-summary, enriched I/O data. This enhancement provides subject matter experts, using IBM z/OS Workload Interaction Navigator, the insights needed to reactively diagnose and proactively avoid I/O-related workload impacts, critical situations, and outages.

| Record Provider | SMF Record Type.Subtype | Min Hardware Requirements | Min Software Requirements | License Requirements |
|---|---|---|---|---|
| z/OS Supervisor | 98.1 | None | z/OS 2.2 with APAR OA55887<br>z/OS 2.3 with APAR OA57165<br>z/OS 2.4 or 2.5 with APAR OA62268 | None |
| CICS | 98.1024 | z14 | z/OS 2.3 with APAR OA57165<br>z/OS 2.4 or above with APAR OA62268<br>CICS 5.4 or above with APAR PH16392 | Correlator[1] |
| IMS | 98.1025 | z14 | z/OS 2.3, IMS 15 with APAR PH15062 | Correlator[1] |
| Db2 | 100.n* | None | Db2 v12 with APAR PH18658 | None |

* Indicates all SMF record subtypes

[1] Indicates an IBM z/OS Workload Interaction Correlator license is required to generate this Correlator record. With Correlator Entitlement, customers running z/OS 2.4 and above with a Resource Monitor Facility (RMF) license or z/OS 2.5 with an Advanced Data Gatherer (ADG) license are entitled to a Correlator license at no additional cost. Otherwise, customers must purchase a separate Correlator license to generate this Correlator record.

Collect SMF 98 records

New Best Practice

# z/OS Requirements

- Engagement is great!.  Add new ideas, Search, Vote and Follow ideas
- In the link below , all requirements that were addressed with z/OS 3.1 can be found

  https://github.com/IBM/IBM-Z-zOS/blob/main/zOS-Requirements-Satisfied/3.1-ideas-delivered.md

- z/OS accepts requirements through the Unified Ideas Portal at https://ideas.ibm.com/

  Directly for **z/OS** at https://ibm-z-hardware-and-operating-systems.ideas.ibm.com/?project=ZOS

- z/OS also accepts requirements through user groups like SHARE

# z/OS Parallel Sysplex Updates

| Enhancements/New Features | Since When & Updates |
|---|---|
| Logger support for single-system logger | 2.4 GA |
| Dynamic activation of I/O configurations for stand-alone Coupling Facilities | 2.4 GA |
| XCF Transport Classes simplification | 2.4 GA |
| Automatic Restart Manager (ARM) support for restarting a system task | 2.4 2Q-2020 / 2.5 GA |
| Coupling Facility (CF) monopolization avoidance | 2.4 2Q-2020 / 2.5 GA |
| System Recovery Boost sysplex recovery enhancements | 2.4 3Q-2020 / 2.5 GA |
| XCF note pad resiliency enhancements | 2.5 4Q-2021 / 2.5 GA |
| Complaince Center Support For XES/XCF | 2.5 2Q-2022 |
| Parallel Sysplex z16 Support –z16 Coupling & Parallel Sysplex Enhancements | 2.5 2Q-2022 |
| CF latency and scalability enhancements ( z16) | 2.5 2Q-2022 |
| CF cache and lock structure resiliency improvements ( z16 CF Level 25 ) | 2.5 2Q-2022 |
| CF cache structure object residency time monitoring and metrics ( z16 CF Level 25) | 2.5 2Q-2022 |
| System Recovery Boost sysplex recovery enhancements ( z16 only updates) | 2.5 2Q-2022 |
| Validated Boot | 2.5 2Q-2023 |
| XCF Storage Constrain Relief | 3.1 / 2.5 CD |
| CF Sizer in z/OSMF CFRM Policy Editor | 3.1,2.5 |
| Upgrade action – sysplex Couple Dataset must support SSD Protocol | 3.1 |

# z/OS Parallel Sysplex Updates

| Enhancements/New Features | Since When & Updates |
|---|---|
| z17 ICA-SR 2.0 Support ( new Adapter, IC buffers from 7 to 8) | 3.2, 3.1, 2.5, 2.4 |
| Z17 Coupling Express3 LR 10Gb/25Gb optics for long-reach coupling (Support for CE3 LR 25 Gb coupling links (CL6). | 3.2,3.1,2.5,2.4 |
| Recovery Process boost for boosting Dynamic I/O Activate ( for z16 and z17) | 3.2, 2QCD-3.1 |
| SRB messaging and SMF enhancements | 3.2, 2QCD-3.1 |
| Removal of support for CF Flash Memory and CF images using dedicated GP processors with z17 | 3.2,3.1,2.5,2.4 |

| Enhancements/New Features 1/3 | Since When & Updates |
|---|---|
| TFP ease of use SOLUT Parameter | 2.4 2Q-2021 / 2.5 GA |
| WLM batch initiator enhancements | 2.5 GA |
| WLM Policy Advisor (z/OSMF) | 3.1 |
| AI-powered WLM | 3.1 |
| IBM z/OS Workload Interaction Correlator | 2.4 1Q-2021 / 2.5 GA |
| New entitlement structure for IBM z/OS Workload Interaction Correlator | 2.5 4Q-2021 |
| z/OS Workload Interaction Navigator Inspector support | 2.5 1Q-2023 |
| zWIC I/O data-IOS Support (z/OS component exploitation of z/OS Workload Interaction Correlator is planned to be extended to include I/O Supervisor (IOS), providing clients with 5-second synchronized, micro-summary, enriched I/O data) | 3.1 |
| zHyperWrite - Uncaptured Volume I/O Statistics | 2.4 GA |
| zHyperLink write statistics | 2.4 2Q-2020 / 2.5 GA |
| Faster Db2 active log writes with Media Manager parallel write support using zHyperLink | 2.5 4Q - 2021 |
| DFSMS zHyperLink write support for multivolume data sets | 2.5 4Q -2022 |
| zHPF VTOC I/O performance | 2.4 2Q-2020 /2.5 GA |
| RMF System Recovery Boost Support Enhancements | 2.4 3Q-2020 / 2.5 GA |
| RMF CF monopolization avoidance support | 2.4 3Q-2020 / 2.5 GA |
| RMF storage class memory (SCM) busy percentage on a z15 | 2.4 3Q-2020 / 2.5 GA |
| RMF ICSF, Cyrpto HW Support | 2.4 2.4 Q4-2020 / 2.5 GA |
| New Healtcheck- Verify the HTTPS (AT-TLS) configuration of the RMF Distributed Data Server (DDS) | 2.4 4Q -2020 / 2.5 GA |

| Enhancements/New Features 2/3 | Since When & Updates |
|---|---|
| RMF - enhanced the Transport Class in XCF Singaling Report,more performance statistics | 2.4 1Q-2021 /2.5 GA |
| RMF and z/OS ADG (Advance Data Gatherer) –New | 2.5 GA |
| RMF and ADG optimizes CF data collection | 2.5 GA |
| RMF and z/OS ADG z16 Support | 2.5 2Q-2022 |
| IBM SMF Explorer with Python | 2.5 4Q-2022 |
| z/OS Data Gatherer SMF REST Services ( z/OSMF) | 2.5 4Q-2022 |
| RMF ( The priced feature ) is enhanced with a new, modern, web-based user interface supporting Monitor III Metrics and Reports | 3.1 |
| The RMF Distributed Data Server (DDS) is enhanced to increase security and the use of 64-bit for memory constraint relief | 3.1 |
| RMF DDS Server is zIIP elligible | 3.1 |
| WLM Implicit Long-Term CPU Protection | 3.1 |
| CPENABLE new ‘SYSTEM’ option | 3.1 |
| WLM policy advisor Enhancements | 3.2, 3.1 |

# JES2 Updates

| Enhancements/New Features | Since When & Updates |
|---|---|
| JES2 new infrastructure – JES2 Policy Based Management (Removing exit needs) | 2.4 GA |
| JES3 to JES2 conversion aids | 2.4 GA |
| single- system image support for policy-based exits | 2.4 3Q-2020 / 2.5 GA |
| JES2 policy enhancements | 2.5 GA |
| JES2 memory usage enhancements | 2.5 GA |
| FTP server JES access control | 2.5 1Q-2022 |
| JES2 Policy Persistence (Store policies in JES2 CKPT – new keyword CDINUM) | 2.5 GA / 2.4 CD |
| JES2 SMF 1153 Records for JES2 Resource Usage | 2.5 GA |
| JES2 64 –bit Checkpoint version | 3.1 GA / 2.5 CD |
| JES2 policy extention ( New input queue exit 20/50) | 3.1 |
| JES2 Job Level Resource Limits and Resource Groups | 3.1 |
| JES2 Complaince Data Reporting | 3.1 |
| JES2 AI Job Selection | 3.1 |
| JES3 is not be delivered in 3.1 (as SOD and announced before ) | 3.1 |

# SDSF Updates

| Enhancements/New Features | Since When |
|---|---|
| SDSF enhancements<br>Extended Operator Console Display,OMVS options,Link pack directory,Coupling (XCF) members and groups, JES2 Subsystems,JES2 resource monitor alerts,Enqueue by data sets,WLM policy information,SC,RC,RG,Workloads, Job memory objects,Job DD names,JES2 Checkpoint information | 2.4 GA |
| SDSF Recover Boost Support | 2.4 3Q-2020 / 2.5 GA |
| SDSF Several New Enhancements with 2.5 GA | 2.5 GA |
| Key new feature Module Fetch Monitoring Planned to show modules fetched, where, when and who | 3.1 |
| Key new feature Significant Event logging Indication of events such as volumes coming on and offline, actions etc | 3.1 |
| z/OS 3.1 many new Primary Displays Planned, viewable field | 3.1 |
| The browser-based UI (in z/OSMF) is planned to be updated to continue to match function with ISPF | 3.1 |
| SDSF is planned to be enabled for the Security Configuration Assistant of z/OSMF to ease security settings | 3.1 |
| Withdrawn of SDSF Assembler Macro usage to configure SDSF (Use ISFPRMXX parm member instead) | 3.1 |

# z/OS Anomaly Mitigation PFA , HZR, ....

| Enhancements/New Features | Since When & Updates |
|---|---|
| z/OS anomaly mitigation | 2.5 GA |
| New Runtime Diagnostics event for detecting and diagnosing active SLIP PER traps | 2.5 1Q -2022 |
| Reduce the impact of first failure data capture (FFDC) on a system | 2.4 GA |
| z/OS Diagnostics Analyzer – Sensitive Data | 2.4 3Q 2020 / 2.5 GA |
| MEMLIMIT diagnostics for CICS and Java | 2.5 2Q-2022 |
| zAIOps and Runtime Diagnostics integration | 3.1 |
| Predictive Failure Analysis (PFA) migration to Semeru 11 | 3.1 |
| PFA Semeru 21 usage | 3.1 2Q2025 |

# DFSMS – DSS,DFP, HSM, Catalog, OAM, Storage Related Items

| Enhancements/New Features | Since When & Updates |
|---|---|
| IEBCOPY support for PDSE member generations | 2.5 4Q-2021 |
| DFSMS archived key support | 2.5 4Q-2021 |
| TS7700 CUIR enhancement | 2.5 4Q-2021 |
| EzNoSQL APIs | 2.5 3Q-2022 |
| Remove temporary catalog aliases Wizard | 2.5 4Q-2022 |

| DFSMS-HSM Enhancements/New Features | Since When & Updates |
|---|---|
| zFS file-level backup and restore capability by DFSMShsm and DFSMSdss backup&restore | 2.4 GA |
| DFSMShsm UNIX File Level Backup and recovery wit EXCLUDE criteria | 2.4 1Q-2020 / 2.5 GA |
| DFSMShsm file mode hosts | 2.4 2Q-2020 / 2.5 GA |
| DFSMShsm recover UNIX files to a new directory | 2.4 2Q-2020 / 2.5 GA |
| Enhanced DFSMShsm EXPIREBV support for UNIX files and directories | 2.5 4Q-2021 |
| DFSMShsm support for read-only file systems during incremental backup | 2.5 4Q-2021 |
| DFSMShsm UNIX file incremental backup enhancement | 2.5 4Q-2021 |
| DFSMShsm TCT full-volume dump | 2.5 3Q -2022 |

# zFS & Unix System Services Updates

| Enhancements/New Features | Since When & Updates |
|---|---|
| Application transparency for unplanned outages affecting zFS file systems shared in a sysplex environment (New Mount Option) | 2.4 GA |
| BPXWMIGF for zFS to ZFS (Files that are in use by the application during the movement process are automatically and transparently moved to the target file system without affecting the application) | 2.4 GA |
| Faster mount of zFS file systems (IPL Time Enhancement) | 2.5 GA |
| wildcard character in the aggregate name on the **zfsadm chaggr** | 2.5 GA |
| Warning Capabillity on z/OS UNIX system limits (Change in default of LIMMSG keyword in BPXPRMxx) | 2.5 GA |
| df utility provide the file system size in megabyte increments, instead of bytes, optionally | 2.5 GA |
| New OVIEW utility | 2.5 GA |
| BPXCOPY utility is enhanced to enable file tagging where the target z/OS UNIX file can be tagged with a CCSID | 2.5 GA |
| rm utility with new options protect from recursively deleting files | 2.5 GA |
| BPXBATCH facility has been enhanced with two new keywords, PGMRC and SHRC, to get the proper return code for the submitted job | 2.5 GA |
| Updates in BPXPRMXX syntax checker, to validate ZFS parameters on the ROOT and MOUNT statements, (validation prior to re-IPLing) | 2.5 GA |
| UNIX component trace ( SYSOMVS CTRACE ) buffer size limit has increased from a maximum of 64 M to 2047 M for improved service | 2.5 GA |
| z/OS UNIX SMF recording function ( __smf_record() ) has been enhanced to provide extended SMF record support | 2.5 GA |
| NEW ! Data Set File System | 2.5 2Q- 2022 |
| su auditing capability by issuing SYSLOGD message | 2.5 2Q- 2023 |
| date utility support for Julian date conversion | 2.5 2Q- 2023 |
| find utility enhancement to print filenames with a null character | 2.5 2Q- 2023 |

# zFS & Unix System Services Updates

| Enhancements/New Features | Since When & Updates |
|---|---|
| grep –r/-R to search directories recursively | 3.1 |
| New utilities **readlink** and **banner** | 3.1 |
| OpenSSH 8.4p1 (Previously it was OpenSSH 7.6p1 ) | 3.1 |
| XML Toolkit V1.11 included in z/OS Base | 3.1 |
| The Xerxes and Xalan XML parsers can now be used within the z/OS Operating system | 3.1 |
| Z Shell on z/OS (Zsh) | 3.1 |
| | |

# z/OS Components Continue

| BCPii - Enhancements/New Features | Since When & Updates |
|---|---|
| BCPii LPAR group control support | 2.4 GA |
| A new z/OS BCPii API named HWIREST | 2.4 2Q 2021 / 2.5 GA |
| BCPii HWIREST support for commands from ISV and TSO/E REXX environments | 2.5 1Q 2022 |
| BCPii and HMC SE Hardening Security ( Server side authentication) | 3.2 ( 3.1 Future CD) |

| zERT- Enhancements/New Features | Since When & Updates |
|---|---|
| IBM zERT Network Analyzer database administration enhancements | 2.4 1Q-2020 / 2.5 GA |
| BM zERT aggregation recording interval | 2.4 2Q-2020/ 2.5 GA |
| zERT policy-based enforcement | 2.5 GA |
| zERT Network Analyzer z/OSMF plug-in is enhanced to support the use of passphrases as an authentication credential for the network analyzer's Db2 user ID on the plug-in's database settings panel. | 2.5 2Q -2022 |
| Enhancements to automatically upgrade application and database settings from previous releases (z/OS 2.4 and z/OS 2.5 ) | 3.1 |
| New tooling is provided to easily upgrade an existing V2R4 or V2R5 zERT Network Analyzer database to the 3.1 schema | 3.1 |

# z/OS Components Continue

| z/OS Communication Server - Enhancements/New Features | Since When & Updates |
|---|---|
| Shared Memory Communications Version 2 (SMCv2) multiple IP subnet support | 2.4 3Q-2020 /2.5 GA |
| Notification of availability of TCP/IP extended services - Critical | 2.5 GA |
| Communications Server exploitation of the IBM Function Registry for z/OS (Regularly store information about the maximum number of SNA applications and sessions in the IBM FunctionRegistry for z/OS. Insight into the amount of SNA application workloads executing on z/OS) – Critical | 2.5 4Q 2022 |
| SMTPD compatibility enhancements for Communications Server SMTP (CSSMTP) (Migrate from SMTPD- CSSMTP) | 2.4 1Q-2020 / 2.5 GA |
| More Granular Control Over the FTP Server JES Mode | 2.5 1Q-2022 |
| z/OS UNIX syslogd support for secure logging over TCP | 3.1 (Rolled back to 2.5) |
| Support for RDMA over Converged Ethernet (RoCE) Express3 | 3.1 (Rolled back to previous releases) |
| Support for Compliance Evidence | 3.1 ( Rolled back to previous releases) |
| Removal of OSA DEVICE/LINK/HOME statements | 3.1 |
| Withdrawal of support of VTAM LSA and TCP/IP LCS devices | 3.1 |
| Communications Server Support for 64-bit Java | 3.1 |
| Persistent Pause Support for Sysplex Distributor DVIPAs | 3.1 |

# z/OS Security

| Enhancements/New Features | Since When & Updates |
|---|---|
| Authorized code scanner – Priced Feature | 2.5 GA |
| z/OS Authorized Code Scanner Enhancements and Authorized Code Scanner Monitor | 2.5 1Q -2023 |
| RACF database encryption | 2.5 2Q -2022 |
| Removal of RACF for z/OS support for RACF database sharing between z/VM and z/OS | 2.5 3Q-2022 |
| ICSF Enhancements - Several - Special PART – z16 Support | 2.5 2Q-2022 |
| Dataset Encryption – Pervasive Encryption Enhancements - Special PART | |
| FIPS compliance support for platform interoperability by completing the FIPS enablement to the UNIX file- based Kerberos database | 2.5 GA |
| Compliance support for z/OS – Announcement with z16 | 2.5 2Q -2022 |

# Notices and disclaimers



**U.S. Government Users Restricted Rights — use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM.**

Information in these presentations (including information relating to products that have not yet been announced by IBM) has been reviewed for accuracy as of the date of initial publication and could include unintentional technical or typographical errors. IBM shall have no responsibility to update this information. **This document is distributedas is without any warranty, either express or implied. In no event, shall IBM be liable for any damage arising from the use of this information, including but not limited to, loss of data, business interruption, loss of profit or loss of opportunity.** IBM products and services are warranted per the terms and conditions of the agreements under which they are provided.

IBM products are manufactured from new parts or new and used parts. In some cases, a product may not be new and may have been previously installed. Regardless, our warranty terms apply.

**Any statements regarding IBM's future direction, intent or product plans are subject to change or withdrawal without notice.**

Performance data contained herein was generally obtained in a controlled, isolated environments. Customer examples are presented as illustrations of how those

customers have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business.

Workshops, sessions and associated materials may have been prepared by independent session speakers, and do not necessarily reflect the views of IBM. All materials and discussions are provided for informational purposes only, and are neither intended to, nor shall constitute legal or other guidance or advice to any individual participant or their specific situation.

It is the customer’s responsibility to insure its own compliance with legal requirements and to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer’s business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer follows any law.

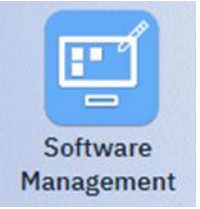
# Notices and disclaimers

- Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products about this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. IBM does not warrant the quality of any third-party products, or the ability of any such third-party products to interoperate with IBM's products. **IBM expressly disclaims all warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a purpose.**
- The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents, copyrights, trademarks or other intellectual property right.
- IBM, the IBM logo, ibm.com and [names of other referenced IBM products and services used in the presentation] are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at: www.ibm.com/legal/copytrade.shtml

# Thank you

# Automatable z/OSMF Software Update (z/OS 3.2 )

- Automate software update installations via a new set of REST APIs is planned to be added to the z/OSMF Software Update application.
- Planned to ship Ansible roles and sample playbooks that leverage these new REST APIs as part of the Ansible Certified z/OSMF Collection




Background:

## z/OSMF Software Management Installation of z/OS 3.1 & 3.2 ServerPac

- Uses a simplified web-based GUI replacing the ISPF CustomPac Dialog
  - Manages allocation and placement of data sets, cataloging, and deployment in z/OSMF Software Management
  - Customization and verification is done in z/OSMF Workflows
  - Data set merge and disconnect Master Catalog on driving system (CD)
  - Remove temporary catalog aliases are supported (CD)
  - REST APIs to run missing critical updates, missing FIXCAT updates, and software update search (CD)
    - Including support in the ibm_zosmf Ansible Collection.
  - A new UUID fetchable from a running z/OS can be used to locate the corresponding SW Instance on an active system (CD)

- IBM (and participating major ISVs) deliver z/OSMF Portable Software Instances as a common installation method for z/OS stack software.
  - IBM z/OS, IMS, Db2, and CICS Transaction Server and associated products, all can be installed with z/OSMF today. CBPDO remains available and is unchanged.
  - z/OS 3.1 ServerPac was only provided as a z/OSMF Portable Software Instance
    - z/OSMF is a driving system requirement for all IBM ServerPacs. (CD)

For more information, see the z/OSMF ServerPac content solution
Try a sample package to be familiar with the install, before you install any ServerPac. Earn a badge!.

# Z Hardware Support (z16)

## IBM z16 highlights (CD)

- Up to 16 TB of memory per z/OS instance, used by select middleware
- 20 new instructions to help improve COBOL and AI applications, including instructions to leverage the new AI accelerator
- A new level of coupling facility support, CFLEVEL 25, which provides Coupling and Parallel Sysplex enhancements
- IBM Z Integrated Accelerator for AI is designed to provide machine learning acceleration with high throughput and low latency
  - IBM Deep Learning Compiler (DLC) enables deep learning models to be deployed on IBM Z, exploiting the IBM Integrated Accelerator for AI.
  - IBM Z Deep Neural Network library (zDNN) is a software library that provides high-level C APIs, which enable simplified exploitation of the IBM Z Integrated Accelerator for AI by AI frameworks and libraries.
- System Recovery Boost Recovery Process Boost for Dynamic I/O Activation processing (CD 2Q25 (3.1) – OA66837)

## Enhanced zIIP Eligibility (CD)

- The zIIP eligibility list is extended to include Python-based applications
  - This change will assist clients, especially those working in Python for AI, to continue scaling up smoothly
  - Up to 70% of Python execution can be zIIP-eligible
- IBM z16 servers can now be configured with more zIIPs (removing the 2:1 max ratio of zIIPs to CPs).
  - This change allows clients to scale up the workloads on zIIPs with z/OS Container Extensions, including with IBM Foundation for Red Hat OpenShift (IBM PID 5655-ZCX/ZCY), and other zIIP-exploiting workloads.

# Z Hardware Support (z16)

## Crypto/ICSF HW Support Enhancements (CD)

- Full Support for IBM z16
  - Support for new Crypto Express 8 Coprocessor
  - New Quantum Safe Algorithms, CRYSTALS-Dilithium 8,7 and CRYSTALS-Kyber
- New TR-31 Export/Import options in support of updated Visa Payment Network requirements
- Enhancements to TR-34 services to support a large Certificate Revocation List (CRL) and allow controlled use of expired certificates.
- Support for IBM z16 GA 1.5
  - Support for operational ANSI X9.143 Key Blocks as a supplement to traditional CCA key tokens.
  - DES, AES, and HMAC key types.
  - KDS support for key blocks on HCR77D2 only, w/ KDSRL format CKDS
  - Services that use these key types will be updated to accept CCA key tokens OR ANSI X9.143 Key Blocks

## z/OS Validated Boot (CD)

- Validated Boot (IPL) of z/OS systems, using digital signatures to provide an IPL-time check that the z/OS system, including z/OS nucleus and LPA load module executables, is intact, untampered with, and originates from a trusted source from the time at which it was built and signed.
- This enables the detection of subsequent unauthorized changes to those software executables, whether those changes be accidental or malicious in nature.
- Designed to meet standards such as the National Information Assurance Program (NIAP) Protection Profiles 4.3.
- Custom Offerings Driver support for z16 and support for (optionally) verifying incoming digitally signed SW packages

# z/OS Version & CD Announcement Letters

| | |
|---|---|
| IBM z/OS 3.1 1Q 2025 enhancements | 18 Feb 2025 |
| IBM z/OS 3.1 4Q 2024 enhancements | 19 Nov 2024 |
| IBM z/OS 3.1 3Q 2024 enhancements | 24 Sep 2024 |
| IBM z/OS 3.1 1Q 2024 enhancements | 24 June 2024 |
| IBM z/OS 3.1 4Q 2023 enhancements | 27 Feb 2024 |
| | 21 Dec 2023 |
| z/OS 3.1 GA Date : 29 September 2023 | |
| IBM z/OS 3.1 GA Announcement | 8 Aug 2023 |
| Preview: IBM z/OS 3.1 | 28 Feb 2023 |
| IBM z/OS V2.5 2Q 2023 enhancements | 20 Jun 2023 |
| IBM z/OS V2.5 1Q 2023 enhancements | 21 Mar 2023 |
| IBM z/OS V2.5 4Q 2022 enhancements | 15 Nov 2022 |
| IBM z/OS V2.5 3Q 2022 enhancements | 20 Sep 2022 |
| IBM z/OS V2.5 2Q 2022 enhancements | 21 Jun 2022 |
| IBM z/OS V2.5 1Q 2022 enhancements | 15 Mar 2022 |
| IBM z/OS V2.5 4Q 2021 enhancements | 23 Nov 2021 |
| z/OS 2.5 GA Date : 30 September 2021 | |
| IBM z/OS V2.5 GA Announcement | 27 Jul 2021 |
| Preview IBM z/OS V2.5 Announcement | 2 Mar 2021 |

IBM Continuous Delivery Model Announcement  IBM z/OS Continuous Delivery Redpaper

**Announcements in IBM z & LinuxOne -z/OS Community Page**

**Now , all Z/OS Quarterly CD announcements can be found in z/OS Community Page . Please subscribe!**

**All previous announcements can be found out in this link**

**In this presentation**

**(CD XQ20XX)** – 3.1 Base items that were rolled back to previous release

# Z Hardware Support

## IBM z16 (3932) Model A02 Functions & Features

| |
|---|
| One hardware model, Single frame configuration, 1 19” Frame, or rack mount for client-supported racks |
| Up to 40 user partitions, 68 client-configurable cores distributed across 2 processor drawer. 80 PUs maximum.<br>• Up to 16 TB per z/OS LPAR with z/OS V2.5 |
| •2 CP chips on a Dual Chip Module (DCM), 4.6 GHz<br>•L1 Private 128K instruction & 128K data<br>•L2 Shared 32 MB / core, 192 MB effective shared<br>•L3 and L4 Virtual. |
| 160 GB HSA, 16 TB maximum, 8 TB per drawer |
| 3 Logical CSS each, with 3 Subchannel Sets |
| HiperDispatch Enhancements |
| IBM Z Integrated Accelerator for AI |
| Hardware Instrumentation Services (CPUMF) |
| New machine instructions |
| Crypto Express8S |
| OSA Express7S 1.2 |


| |
|---|
| IBM System Recovery Boost |
| Coupling Express2 LR 10Gb (CX6-DX) PCIe adapter |
| CF Level 25<br>•Retry buffers for cache and lock commands<br>•Cache residency time metrics<br>•Scalability Improvements<br>•CF Request latency/performance improvements |
| ICA-SR 1.1<br>Max ICA SR per CEC 24 adapters/48 ports |
| Max ICP CHPIDs per CEC – 64; max coupling CHPIDs per CEC - 384 |
| 10 GbE and 25 GbE RoCE Express 3 SR and LR (CX6-DX) |
| FICON Express 32S |
| zHyperLink® Express1.1<br>• Maximum 16 Adapters /32 ports |
| IBM Flexible Capacity for Cyber Resilience |
| z/OS Validated Boot |

(z/OS support in blue)

# Application Development- Ecosystem

## z/OS modernization frameworks/products included in z/OS base at no charge (CD 2Q24 (3.1) – effective July 1, 2024)

- Open Enterprise SDK for Python, Z Open Automation Utilities (ZOAU), and Open Enterprise Foundation for z/OS will be available as bypassable requisites for z/OS 3.1.
  - Both Open Enterprise SDK for Python S&S [5655-PYS] and Z Open Automation Utilities S&S [5698-PAS] are reduced to no cost.
- These products can be ordered with z/OS 3.1 and arrive integrated or separately at a later time

**MVS: z/OS Operating System**

| Select | Product | Description | | | Version | Language | Notes |
|---|---|---|---|---|---|---|---|
| ☑ | [5655-ZOS] | z/OS 3 Base | [Entitlement Description] | [FMIDs] | 3.01.00 | English (US) | |
| The above product has a bypassable requisite for one of the following products: | | | | | | | |
| ☐ | [5655-PYT] | Open Ent SDK for Python | [Entitlement Description] | [FMIDs] | 3.12.00 | English (US) | |
| The above product has a bypassable requisite for one of the following products: | | | | | | | |
| ☐ | [5698-PA1] | Z Open Automation Utilities | [Entitlement Description] | [FMIDs] | 1.03.00 | English (US) | |
| The above product has a bypassable requisite for one of the following products: | | | | | | | |
| ☐ | [5655-UA1] | Semeru Runtime Java z/OS 17 | [Entitlement Description] | [FMIDs] | 17.00.00 | English (US) | |
| The above product has a bypassable requisite for one of the following products: | | | | | | | |
| ☐ | [5655-164] | z/OS AI Services | [Entitlement Description] | [FMIDs] | 1.01.00 | English (US) | |
| The above product has a bypassable requisite for one of the following products: | | | | | | | |
| ☐ | [5655-OEF] | Open Enterprise Foundation | [Entitlement Description] | [FMIDs] | 1.01.00 | English (US) | |

Complete list of Bypassable Requisites for z/OS 3.1

# Java & z/OS

## z/OS 3.1 and Java

- New!  z/OS 3.1 z/OS functional dependency moves to Semeru 21 on March 31, 2025!
    - You must move your z/OS functions* from Semeru 17 to Semeru 21 between March 31, 2025 and September 30, 2026.  (Semeru 17 EOS is planned for Sept 30, 2026.)
    - Use SMP/E FIXCAT IBM.TargetSystem-RequiredService.Semeru.** to find the fixes you need.
- Past Reminder:  On April 1, 2024, z/OS 3.1 supports Semeru 17 as the required level for z/OS functions*
    - You should have moved from Semeru 11 to Semeru 17 on April 1, 2024 through November 30, 2025.
    - Semeru 11 has announced End of Service for November 30, 2025.
    - Use SMP/E FIXCAT IBM.TargetSystem-RequiredService.Semeru.** to find the fixes you need.

- For other IBM products which have a dependency on Semeru 17 and 21, see here.
- Always, watch the z/OS 3.1 *Planning for Installation* book for the latest news in z/OS Semeru dependency, and which z/OS functions are affected.
- Yet another subsequent release of IBM Semeru Runtime Certified Edition for z/OS is anticipated to be required in the lifecycle of z/OS 3.1 in the future

* For your applications, other supported levels of Java are compatible with z/OS 3.1.

# UUID in D IPLINFO

## Now you have UUID in  D IPLINFO command output  CD z/OS Available with z/OS 3.1 CD

```
RESPONSE=Z1
 IEE254I  09.28.43 IPLINFO DISPLAY 781
  SYSTEM IPLED AT 16.11.54 ON 04/08/2025
  RELEASE z/OS 03.02.00    LICENSE = z/OS
  USED LOADPT IN SYS0.IPLPARM ON 0A443
  ARCHLVL = 2   MTLSHARE = N
  VALIDATED BOOT: ENFORCE,INACTIVE
  SOFTWARE INSTANCE UUID: c7ff59b4-238b-44b1-ade4-4055d7608b96
  IEASYM LIST = (P2,AU)
  IEASYS LIST = (01,Z1) (OP)
  IODF DEVICE: ORIGINAL(0A443) CURRENT(0A443)
  IPL DEVICE: ORIGINAL(09B62) CURRENT(09B62) VOLUME(PETP70)
```

# SRB enhancement for support Dynamic I/O activation

Available via ptf in  z/OS 3.1  ( base in z/OS 3.2)

It works in z16 as well.

# Z HW Related Announcements

Common Question : Where can I find the life cycles of IBM z Servers?

Answer : https://www.ibm.com/support/pages/node/6354755

Updated 8 April 2025

z17 Announcement :https://newsroom.ibm.com/z17

IBM Mainframe Life Cycle History

Multi-frame

| Machine | | | Dates | | | | | Years | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Model | Family | ANN | GA | HW WDFM | LIC WDFM | EOS | GA to GA | ANN to GA | GA to HW WDFM | HW WDFM to EOS |
| 9175 | ME1 | z17 | April 8, 2025 | June 18, 2025 | | | | 3.1 | 0.2 | | |
| 3931 | A01 | z16 | April 5, 2022 | May 31, 2022 | December 31, 2025 | December 31, 2026 | | 2.7 | 0.2 | 3.6 | |
| 8561 | T01 | z15 | September 12, 2019 | September 23, 2019 | December 31, 2023 | December 31, 2024 | | 2.0 | 0.0 | 4.3 | |
| 3906 | M0n | z14 | July 17, 2017 | September 13, 2017 | June 30, 2021 | June 30, 2022 | | 2.5 | 0.2 | 3.8 | |
| 2964 | Nnn | z13 | January 14, 2015 | March 9, 2015 | June 30, 2019 | June 30, 2020 | December 31, 2024 | 2.5 | 0.1 | 4.3 | 5.5 |
| 2827 | Hnn | zEC12 | August 28, 2012 | September 19, 2012 | December 31, 2016 | December 31, 2017 | December 31, 2023 | 2.0 | 0.1 | 4.3 | 7.0 |
| 2817 | Mnn | z196 | July 22, 2010 | September 10, 2010 | June 30, 2014 | June 30, 2015 | December 31, 2021 | 2.5 | 0.1 | 3.8 | 7.5 |
| 2097 | Enn | z10 EC | February 26, 2008 | February 26, 2008 | June 30, 2012 | June 30, 2013 | December 31, 2019 | 2.4 | 0.0 | 4.3 | 7.5 |
| 2094 | Snn | z9 EC | July 26, 2005 | September 16, 2005 | June 30, 2010 | | October 31, 2017 | 2.3 | 0.1 | 4.8 | 7.3 |
| 2084 | | z990 | May 13, 2003 | June 16, 2003 | June 30, 2008 | | December 31, 2014 | 1.1 | 0.1 | 5.0 | 6.5 |
| 2064 | 2nn | z900 G2 | April 30, 2002 | May 15, 2002 | June 30, 2006 | | December 31, 2014 | 1.4 | 0.0 | 4.1 | 8.5 |
| 2064 | 1nn | z900 G1 | October 3, 2000 | December 18, 2000 | June 30, 2006 | | December 31, 2014 | | 0.2 | 5.5 | 8.5 |
| | | | | | | | Average | 2.2 | 0.1 | 4.4 | 7.3 |

Legend:

| | |
|---|---|
| **ANN** | Announcement of a new product |
| **GA** | General availability of a product |
| **HW WDFM** | Hardware withdrawal from marketing |
| **LIC WDFM** | Licensed Internal Code withdrawal from marketing. |
| **EOS** | End of service (unsupported) |

**GA to GA** - actual number of years between GA of this family and GA of the previous family
**ANN to GA** - actual or announced number of years between ANN and GA
**GA to HW WDFM** - actual or announced number of years between GA and HW WDFM
**HW WDFM to EOS** - actual or announced number of years between HW WDFM and EOS

*IBM z15 LIC withdrawn was DEC 31 2024*