

IBM z/OS Version 2 Release 4 enhancements

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Overview

IBM^(R) z/OS^(R) V2.4 was generally made available on September 30, 2019, to deliver on systems management agility, security, and resiliency, enabling clients to deliver services that their consumers and users depend on.

z/OS V2.4 4Q2019 enhancement updates

The continuous delivery (CD) model for z/OS V2.4 further extends its capabilities with additional enhancements and new functions.

The following key functions are delivered with the z/OS V2.4 updates:

IBM z/OS Container Extensions, which enables the integration of Linux^(R) software with native z/OS, co-located in a z/OS address space, has been enhanced with a new proxy server support feature to enable proxy access to client-relevant s390x Docker images in Docker Hub for integration into z/OS. zCX has also been enhanced with the Inbound Workload Queueing support for better zIIP offload.

IBM z/OS MF enhancements to z/OS platform automation further simplify and modernize the user experience for optimized systems management productivity.

IBM SMF Quantum Safe Signatures provides protection of SMF data into the future with an optional second digital signature to help determine if SMF data has been tampered with.

New IBM XL C/C++ compiler web deliverable provides language standards support for C/C++ language, ideal for z/OS UNIX^(R) users porting applications from distributed platforms.

Cloud Storage Data: Data migration directly between disk and tape provides the optimal combination of efficiencies, flexibility, and availability through transparent cloud tiering (TCT), to help mainframe clients meet today's business challenges.

For details, see the [Description](#) section.

Description

Improving and simplifying application development

New z/OS XL C/C++ compiler adds support to help IBM z/OS UNIX users port applications from distributed platforms

The IBM z/OS XL C/C++ V2.4.1 web deliverable for z/OS V2.4 delivers C11, C++11, and C++14 language standards support, and hardware exploitation capabilities, including exploitation of the latest IBM z15. It is the integration of IBM advanced XL optimization technologies with the LLVM open source Clang infrastructure that gives the IBM z/OS XL C/C++ V2.4.1 web deliverable more current language standards

support, ease in migrating apps from distributed platforms, and z/Architecture[®] exploitation capabilities. The z/OS XL C/C++ V2.4.1 compiler supports EBCDIC and ASCII execution character sets, and generates AMODE 64 code, making it ideal for z/OS UNIX users porting applications from distributed platforms.

The XL C/C++ V2.4.1 web download is a no-charge add-on feature for clients that have enabled the XL C/C++ compiler (an optionally priced feature) on z/OS V2.4. It coexists with, and does not replace, the base XL C/C++ V2.4 compiler. XL C/C++ V2.4 and V2.4.1 compilers are both designed to be used independently and are also serviced and supported independently.

The z/OS XL C/C++ V2.4.1 web deliverable will be available on December 13, 2019, from the [z/OS Downloads](#) website.

Effective systems management providing businesses proactive IT guidance and support

Proxy server for IBM z/OS Container Extensions

zCX is enhanced to support proxy configuration capabilities for the Docker daemon. The HTTP/HTTPS proxy support allows the Docker daemon to use the proxy server in your enterprise to access external public and private Docker registries that are restricted or located outside of your enterprise network, or both. The optional proxy configuration for z/OS Container Extensions can be configured using the provisioning and reconfiguration z/OSMF workflows. The proxy capabilities are enabled with the PTF for APAR OA58267.

Enhancing availability, scalability, and performance

Inbound Workload Queueing (IWQ) support for IBM z/OS Container Extensions

In support of zCX, z/OS Communication Server's OSA-Express[®] Inbound Workload Queueing support is enhanced to add a new input queue for zCX network traffic. The OSA-Express IWQ separation of the zCX traffic from native z/OS traffic provides an optimal Communications Server processing environment for zCX traffic. When IWQ is enabled, the z/OS TCP/IP inbound processing for the zCX traffic becomes zIIP eligible. OSA-Express will direct zCX traffic for protocols TCP and UDP to the zCX input queue. The z/OS IWQ zCX solution will be made available on OSA-Express6S and beyond. IWQ zCX is enabled on z/OS V2.4 with PTFs for APARs PI16581 and OA58300.

Integration by design with IBM Z[®] and IBM Storage

The unique relationship between IBM Z and IBM storage devices provides the optimal combination of performance, functionality, and availability to help mainframe clients meet today's business challenges through industry-leading capabilities:

- **DS8000[®] object store**

The IBM TS7700 Virtualization Engine, in conjunction with DS8000 and DFSMSHsm, delivers DS8000 object store, a new capability to enable the IBM TS7700 Virtualization Engine to be the object storage target for transparent cloud tiering. This new feature enables DS8000 transparent cloud tiered object data and traditional FICON[®] logical volume data to coexist within the same physical TS7700 cluster. DFSMSHsm supports migrating data directly from DS8000 disk to TS7700 clusters using transparent cloud tiering and the TS7700 DS8000 object store capability. DFSMSHsm manages this data the same as cloud object storage data, such that there is no host CPU consumed for data movement and no need for recycle processing. No additional hardware is required as data movement is done through existing GRID interfaces between the DS8000 and the TS7700, and data is logically partitioned out of the existing resident cache. For additional information, see Hardware Announcement [119-064](#), dated October 22, 2019.

Simplify and modernize the user experience to enhance productivity

IBM z/OSMF enhancements

The z/OSMF desktop UI is enhanced by the PTF for APAR PH16076 to support searching, browsing, and editing the USS file and directory from the same place where the user can do similar operations with data sets today. The existing data set function is also enhanced to support create data set and data set member.

The z/OSMF Workflows task is enhanced to support creating workflow instances from workflow definitions located in remote systems by the PTF for APAR PH14185.

z/OSMF REST data set and file service is enhanced to support accessing data sets and files in remote systems by the PTF for APAR PH15263.

Several new z/OSMF V2.4 functions are also rolled back to z/OSMF V2.3 with the PTF for APAR PH15504. These new functions include:

- A new Security Configuration Assistant task provides graphic views to validate z/OSMF security setup.
- A new z/OSMF Diagnostic Assistant task allows a user to collect z/OSMF diagnostic data with one click.
- An enhanced z/OSMF desktop UI provides a more powerful editor for data sets.
- z/OSMF supports using a client certificate to log on to z/OSMF in a browser.

Enhanced security and data protection

IBM SMF Quantum Safe Signatures

z/OS V2.4 extends the digital signature support for SMF records written to log streams to optionally include a second digital signature. When enabled, the second signature uses a quantum safe algorithm to provide an alternative to current algorithms that have been deemed at risk in a quantum computing environment. Also, the SMF signature verification function is extended to include this second signature to help you determine if SMF records have been altered or removed. This function is intended to protect SMF data into the future. The support is provided through a PTF for APAR OA57371 and requires Cryptographic Support for z/OS V2.2 - V2.4 (HCR77D1) and IBM z15.

IBM z/OSMF Security Configuration Assistant

z/OSMF Security Configuration Assistant is enhanced to support validation by user group with the PTF for APAR PH17871.

IBM z/OSMF support for JSON Web Token

z/OSMF supports JSON Web Token (JWT) by returning JWT token during authentication and accepting JWT token for authorization of z/OSMF services by the PTF for APAR PH12143.

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 219-210](#)

Statement of general direction

Removing support for IBM z/OSMF tree mode interface

IBM z/OS V2.4 is planned to be the last release to support the z/OS MF classic-style user interface (the tree mode interface) and in future releases will only support the desktop-style user interface. The z/OS MF desktop-style user interface supports all the functions that the traditional tree mode interface does, and provides a more modernized and personalized UI, by displaying the z/OS MF tasks in a desktop style with task icons, taskbar, and other desktop elements that can be user tailored, which allows users to interact with z/OS using a familiar interface that is similar to other operating environments. The desktop UI also has more capabilities, such as the ability to search for data set names, quickly locate a task, group tasks in a folder, and perform similar actions.

IBM z/OS Integrity Scanning Tool

IBM intends to deliver a new feature of z/OS to scan Program Call (PC) and Supervisor Call (SVC) routines to further strengthen the integrity of the z/OS solution stack and simplify compliance requirements.

DFSMSrmm plug-in for z/OSMF

Today, user interfaces for DFSMSrmm (RMM) include TSO and ISPF dialogs. RMM intends to provide support for a modern graphical user interface via a z/OSMF plug-in. The plug-in would augment the existing TSO and ISPF dialog support with an easy-to-use graphical interface.

DFSMSrmm Web Services removal

z/OS V2.4 is planned to be the last release of z/OS to support DFSMSrmm (RMM) Web Services. Today, RMM provides support for remote Java™ applications to connect to the RMM application programming interface (API) running on a z/OS system over the internet via a package that is deployed on a web server such as z/OS WebSphere® Application Server or Apache Tomcat. Use of the RMM API, which accesses the RMM control data set to obtain information about RMM managed resources, would still be available to applications using either high-level or assembler languages.

To determine if you are using RMM's Web Services support, verify if you have the following packages deployed: /usr/lpp/dfsms/rmm/rmmapi.ear for IBM WebSphere and /usr/lpp/dfsms/rmm/rmmapi.tc.war for Apache Tomcat. This can also be checked by listing the deployed web applications in the Tomcat Web Application Manager or on the WebSphere Integrated Solutions console.

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Reference information

For additional information, see:

- Software Announcement [219-344](#), dated July 23, 2019(IBM z/OS V2.4 GA)
- Hardware Announcement [119-027](#), dated September 12, 2019(IBM z15)

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