

IBM z/OS Version 2 Release 3 enhancements

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At a glance

IBM^(R)'s z/OS^(R) V2.3 operating system continuously delivers innovations designed to build and improve the highly scalable and securable next-generation infrastructure needed. IBM z/OS V2.3 delivers the performance, availability, scale, I/O support, and security to provide this infrastructure, giving businesses the ability to instantly react to opportunities.

z/OS is designed to support companies' most mission-critical work while meeting stringent service levels, illustrated by clients that include the world's leading banks, financial services companies, healthcare enterprises, and governments. Focusing on three critical areas, security, simplification, and cloud, z/OS V2.3 enables extensive encryption of data, helps simplify the overall management of the z/OS ecosystem to increase productivity, and provides a simple, consumable approach for self-service provisioning and rapid delivery of software-as-a-service, helping companies to leverage the API economy.

This z/OS V2.3 announcement delivers the following new capabilities:

Simplify and modernize the user experience to enhance productivity

- z/OSMF enhancements provide continued improvements to the user interface as well as enhancing workflows to improve system management productivity.
- IBM CloudTM Provisioning and Management for z/OS enhancements help improve management in a sysplex environment and simplify Workflow Editor Tasks with IBM supplied automation.
- Multiple installation support for Network Configuration Assistant has been enhanced to allow multiple configuration files to be installed with a single action, improving system management productivity.
- New look and linking for product documentation PDFs, providing an updated style and link-coding.

Improve and simplify application development

- New XL C/C++ compiler that uses open technology, making it ideal for z/OS UNIX^(R) users porting applications from distributed platforms
- New default behavior for terminating signals in Language Environment^(R)-enabled applications
- Web Enablement Toolkit support for the Unicode character set in JSON parser
- Web Enablement Toolkit support for the new JSON search scope
- Unicode Services support for composition characters on both sides of a user-defined conversion table

Overview

Simplify and modernize the user experience to enhance productivity

z/OSMF enhancements:

- z/OSMF is enhanced by PTFs for APAR PH01770 to enable users to search, browse, and edit data sets from the z/OSMF UI as well as create shortcuts for data sets in a z/OSMF desktop or folder.
- z/OS MF provides an OpenAPI document for z/OS Jobs REST APIs and z/OS data set and file REST APIs by PTFs for APAR PI96461 by March 10, 2019, if not sooner.
- The z/OSMF Workflows task is enhanced by PTFs for APAR PH05139. With APAR PH05139, a user can export a workflow as a printable format that contains a front cover, front matter, back matter, or back cover. In addition, a user can control the access scope of global variables by defining a global variable group in the workflow definition file.

IBM Cloud Provisioning and Management for z/OS enhancements are available for z/OS V2.3 and V2.2 with PTFs for APARs PH04410 and PH04817:

- System programmers are able to view memory consumed by software service instances that are provisioned by a specific tenant and set a cap for memory consumption. Using the z/OSMF Cloud Provisioning Resource Management task, when memory metering or capping for a tenant is enabled, workload manager (WLM) policy is updated with Tenant Resource Group, which provides memory cap setting for the tenant to WLM.
- Clustered composite templates enable you to leverage sysplex capability to provision a continuously available middleware environment. With a single provisioning action, you can provision network-clustered instances of a specific middleware in a sysplex. Similarly, a single deprovision action can release all of the member instances that are associated with the clustered composite template instance. A new capability is introduced in cluster composite template to support creating cluster composite templates. System programmers can create a clustered composite template from a single published template or from multiple published templates. The member templates of cluster composite template must all be of the same software type; that is, they provision a cluster of the same middleware. The APARs mentioned above delivered support in z/OS V2.3 and z/OS V2.2 for a clustered composite template that can be created in a cloud domain that has more than one z/OS system. Provisioning a clustered composite template results in each instance of the member templates being provisioned on a separate system in the cloud domain. Clustered composite templates have their own resource pools. z/OS resources for all of the member instances are obtained from the same resource pool when the clustered composite template is provisioned.
- When you create a cloud provisioning template, you can specify files for a template, such as the workflow and actions definition files in sequential or partitioned data sets. Previously, they were required to be z/OS UNIX files.
- The Workflow Editor task enhancements include:
 - The Workflow Editor includes a "toolbox" of IBM-supplied steps that are designed for performing common tasks on z/OS, such as creating a data set or submitting a REST request. When you create a workflow definition, check the step toolbox to see whether any of the steps would be applicable to your needs. If so, you can save time by importing an IBM-supplied step from the shared step library and modifying it, rather than creating your own step.
 - An array, a new type of variable that you can define for your workflow. Consider using an array variable when you need to map a list of values.
 - The files for a workflow, the primary XML file, fragment files, and the variable input file are supported from sequential or partitioned data sets. Previously, they were required to be z/OS UNIX files.
- For additional details about these enhancements, see the [What's new in IBM Cloud Provisioning & Management for z/OS](#) blog.

Multiple installation support for Network Configuration Assistant

With the PTF for APAR PH04130, the ability to install multiple configuration files in a single action is enabled. With this support, you no longer have to enter and act on a separate installation panel for each file in a group to be installed. You can use this new action on any installation panel that has more than one file listed on it. For example, you can use it for all files in a sysplex group or all Alternate Configurations for a TCP/IP stack profile.

New look and linking for product documentation PDFs

Every PDF in the z/OS V2.3 library was recently refreshed to update the visual style and link coding. Because of the link coding changes, clicking on a link in an old-style PDF to a new style PDF will not work, and vice versa. So, to ensure that all cross-book links continue to work for you, download the entire fresh set of library PDFs from the [Acrobat indexed zip file](#) or from the [not indexed zip file](#).

Improve and simplify application development

New XL C/C++ compiler

The new z/OS XL C/C++ V2.3.1 web deliverable for z/OS V2.3 is the latest offering from the IBM XL C/C++ compiler family on z/OS. It uses the Clang (C language family) infrastructure from the LLVM open source community for a portion of the compiler to provide support for the C11 and C++11 language standards. This new compiler combines the Clang infrastructure with the existing advanced optimization technology in the IBM XL compilers that clients are familiar with. The z/OS XL C/C++ V2.3.1 compiler supports English messages and 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 z/OS XL C/C++ V2.3.1 web deliverable is for clients that have enabled the XL C/C++ compiler (an optionally priced feature) on z/OS V2.3 only. The z/OS XL C/C++ V2.3.1 web deliverable will be available by March 29, 2019, from the [z/OS Downloads](#) website.

New default behavior for terminating signals in Language Environment-enabled applications

With the PTFs for APARs PH01571 and PI93384, Language Environment-enabled applications can now be rolled back when they are terminated by a POSIX-defined terminating signal and there are no registered signal handlers. This enables resource managers, RRS, or Context Services exits to no longer commit in-progress updates. This support is provided on z/OS V2.2 and V2.3.

Web Enablement Toolkit support for Unicode character set in JSON parser

With the PTF for APAR OA56139, the JSON parser can now parse and perform various other services on JSON text in Unicode. The parser auto-detects if the text is in EBCDIC (code page IBM-1047) or UTF-8 (code page IBM-1208) encoding and processes the text appropriately. Alternatively, the new HWTJSENC service can be used to manually set the correct encoding. Another new service, HWTJGENC, can be used to retrieve the encoding used to parse the document. This Unicode support is available on z/OS V2.2 and V2.3 and removes the overhead of manual conversion required of a client who would like to use the JSON parser to parse data originating in UTF-8.

Web Enablement Toolkit support for new JSON search scope

The user application can now limit the search scope of a JSON text by using the new SearchType value HWTJ_SEARCHTYPE_SHALLOW available with the PTF for APAR OA56227. This value is similar to HWTJ_SEARCHTYPE_OBJECT; however, it limits the depth of the search and does not consider content within any nested objects. This additional scoping option, available on z/OS V2.2 and V2.3, can greatly improve the performance cost of searching JSON.

Unicode Services support for composition characters on both sides of a user-defined conversion table

With the PTF for APAR OA54426, a user can now define a conversion table in Unicode Services with composition characters on both sides (the *from* and the *to* sides) of a user-defined conversion table. A new utility called *CUNMITG4* has been provided to create the binary files associated with such a user-defined conversion table. In our highly globalized world, this support can help clients to implement solutions that meet certain regional IT standards associated with surnames and first names on z/OS V2.2 and V2.3.

Planned availability date

Announced functionality will be available by March 31, 2019, if not sooner.

Reference information

- Software Announcement [217-246](#), dated July 17, 2017(z/OS V2.3 GA)
- Hardware Announcement [117-044](#), dated July 17, 2017(z14)

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^(R) ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 219-122](#)

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