IBM z/OS V2.5

Enabling innovative development to support hybrid cloud and AI business applications

Adaptive business and operating models, driven by accelerated disruptions, are shaping the future of enterprises today. Enterprises are embracing the next normal with an accelerated and strategic focus on application modernization, cloud-native processes, and artificial intelligence (AI), all in an effort to ensure timely and resilient business use cases and enhanced business applications for a continuous and positive user experience.

The IBM hybrid cloud approach is at the core of the plan to provide a solution for this swift and massive transformation. It provides a consistent, standards-based approach to development, security, and operations. In a hybrid cloud architecture, IBM Z® provides the privacy and security clients need with the common cloud experience they want to accrue the following benefits:

- Create better experiences for users through application modernization
- Fuel business growth with a standard cloud-native approach
- Innovate with integrity with cyber solutions to address evolving threats and new regulations
- Build competitive advantage with a cyber-resilient infrastructure that predicts, responds, and recovers
- By leveraging the strengths of the IBM Z platform's computing power and resources, IBM z/OS® plays an important role in providing a secure, scalable environment for the underlying transformation process in which organizations are embarking to deliver swift innovation.
- IBM z/OS V2.5 is designed to enable and drive innovative development to support hybrid cloud and AI business applications. This is accomplished by enabling next-generation systems operators and developers to have easy access and a simplified experience with IBM z/OS, all while relying on the most optimal usage of computing power and resources of IBM Z platform for scale, security, and business continuity.

Highlights

- Exploits the latest IBM z16™
- Supports up to 200 configurable processors and up to 16TB of memory in a z/OS image
- Performance and ease of use enhancements for z/OS Container Extensions
- New functions for IBM Cloud® Provisioning and Management for z/OS
- New automation capabilities to simplify areas of system management
- Enablement for the use of AI in mission critical applications
- Enhanced resiliency capabilities and automated detection and mitigation procedures
- Pervasive encryption simplification including support for additional z/OS dataset types

IBM z/OS V2.5 is designed to enable and drive innovative development to support hybrid cloud and AI business applications.

IBM z/OS V2.5 – Providing the privacy and security clients need with the common cloud experience they want

z/OS V2.5 delivers values, features, and capabilities to help organizations succeed in their modernization efforts. Whether they are running Linux® applications on z/OS or extending existing COBOL applications with Java™ programs, z/OS V2.5 enables an application development team to leverage hybrid cloud deployment, achieving rapid and secure application development, and provisioning. z/OS V2.5 supports the scale and simultaneous deployment of secure agile business use cases for hybrid cloud and AI capabilities.

Extensions to broadly expand choices of AI tools, frameworks, or libraries.

- Enterprise modernization with more seamless Java-COBOL interoperability. This enables application developers full application transparency by extending application programming models.
- z/OS system programmers, including early tenures, can independently and confidently deploy, maintain, and manage

  z/OS (and stack) software functions using guided and customized instructions and workflows. Functions such as z/OS Management Facility provide an intuitive user-interface as well as automated instructions.

Create better user experiences through application modernization

z/OS V2.5 delivers the following values, features, and capabilities to help organizations succeed in their modernization efforts:

- Performance and ease of use enhancements for zCX. Initially released as part of z/OS V2.4, zCX provides IT Solutions architects with colocation agility and access to z/OS qualities of service for Linux applications by integrating Linux applications and utilities into z/OS. Enablement for the use of AI in mission-critical applications by utilizing z/OS Container

Fuel business growth with a standard cloud-native approach

- New functions and an enhanced user experience with IBM Cloud Provisioning and Management for z/OS to offer a robust software provisioning platform on z/OS. Enhancements simplify provisioning, resource management, and security to help administrators efficiently manage templates and instances and to support expanded resource pools.
- Capabilities added to IBM z/OS Cloud storage through DFSMS™ transparent cloud tiering (TCT) and the Object Access Method (OAM) cloud tier support.

TCT, and separately OAM, enable z/OS to utilize hybrid cloud as an additional storage tier for structured and unstructured data. z/OS V2.5 use of cloud storage is designed to reduce capital and operating expenses with data transfer to hybrid cloud storage environments for simplified data archiving and data protection on IBM Z.

Solutions address evolving threats and new regulations with a cyber-resilient infrastructure that predicts, responds, and recovers

z/OS V2.5 continues to strengthen the security, integrity, and privacy of data. Architecture teams can leverage cyber security system hardening and analytics to provide a new level of cyber resiliency for the enterprise

- An Anomaly Mitigation solution leveraging Predictive Failure Analysis (PFA), Runtime Diagnostics, Workload Manager (WLM), and JES2 that further enables clients to detect anomalous behavior in near real-time, so they can proactively address potential problems before an availability availability-impacting impacting event can develop.
- Enhanced System Recovery Boost for IBM z16 servers. IBM extends the System Recovery Boost solution with additional recovery process boost use cases to provide value for a new set of recovery and diagnostic events, utilizing the same underlying boost technologies used previously on IBM z15™.

IBM z/OS V2.5 leverages the IBM z16 capabilities

z/OS V2.5 supports IBM z16 with capabilities designed to optimize high availability, performance, security, and operational flexibility that can help organizations grow and secure their most critical transaction environments.

In addition to base processor support, z/OS provides the support for these IBM z16 functions and features:

- System Recovery Boost enhancements provide boosted processor capacity and parallelism for the following specific events:
  - SVC Dump Processing: Boosts systems that are performing diagnostic data capture via an SVC Dump that is estimated to be over a certain size threshold.
  - Customer-selected middleware starts/restarts: Boosts systems that are performing startup/restart for customer-selected started-task middleware regions.
  - HyperSwap™ Configuration Load/Reload: Boosts systems that are participating in a load/ reload of a HyperSwap configuration policy.
  - Cryptography enhancements available with Crypto Express8S.
- IBM Z Flexible Capacity for Cyber Resiliency is a new Capacity on Demand offering available on IBM Z machines, that allows processing capacity flexibility between primary site and alternate data centers.
- Coupling Facility Level (CFLEVEL) 25 provides a variety of coupling facility (CF) and coupling link enhancements
- A key strength of the IBM enterprise compilers is the focus on exploiting the new capabilities of the new IBM Z hardware. The latest releases of the compilers (Enterprise COBOL for z/OS V6.3,
- Enterprise PL/I for z/OS V6.1, and z/OS V2R4 XL C/C++ new web deliverable) make available a new ARCH-14 level to exploit the majority of the enhanced vector instructions available on the IBM z16 models in z/Architecture® mode. Using ABO 2.2 to optimize existing Enterprise COBOL 4.2 to VS COBOL II modules allows the IBM z16 to obtain improved computation performance without the need to do recompilation.
- Java is a popular, general-purpose, highly portable object-oriented language that is widely used for application software and web-based applications. It is designed to have few hardware and platform dependencies and is useful in developing new, and extending traditional, web-based applications, and porting other applications to your IBM Z platform. The SDK for z/OS Java Technology Edition is useful in helping developers who want to take advantage of the Java application programming interfaces (APIs) for z/OS, write or run Java applications across multiple platforms, or use Java to access IBM Z data.
- Node.js is one of the fastest growing language runtimes in the market with a large open source community. Available and supported on the IBM z16 and on z/OS, IBM SDK for Node.js - z/OS, V8.0 is upgraded to the open source Node.js V8.0 level which is designed to provide extra security and performance by leveraging the capabilities of IBM z16.

Support for open standards

z/OS supports a number of languages to develop software. Language Environment is the prerequisite runtime environment for applications generated with the following IBM compiler products:

- XL C/C++
- Enterprise COBOL for z/OS Enterprise PL/I for z/OS IBM REXX™
- Java

Some industry standards and protocols that are supported include, at minimum, full or partial implementations:

- Java
- XML (z/OS XML System Services) Unicode
- METAL C facility
- C language standard
- Eclipse
- Web services standards SOAP
- IPv4, IPv6 JIS
- JIS X 0201, JIS X 0208, and JIS X 0212
- EMVCo
- FIPS
- PKCS #11 #12 PCI DSS
- ISO Common Criteria IETF standards
- ANSI standards OASIS
- NIST
- Others

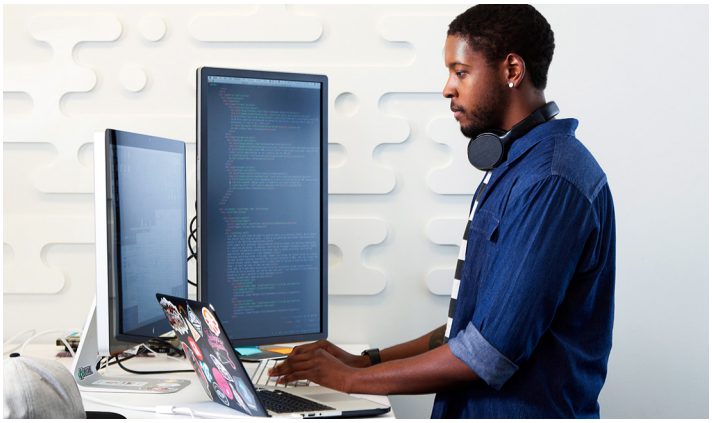
Compatibility

z/OS delivers compatibility and flexibility as you migrate systems in a multisystem configuration by enabling multiple releases of z/OS to coexist. This includes non-Parallel Sysplex® and Parallel Sysplex multisystem configurations. For example, see the following coexistence capabilities:

- z/OS V2.3 coexists with: z/OS V2.1, z/OS V2.2, z/OS V2.3, z/OS V2.4, z/OS V2.5
- z/OS V2.4 coexists with: z/OS V2.2, z/OS V2.3, z/OS V2.4, z/OS V2.5
- z/OS V2.5 coexists with: z/OS V2.3, z/OS 2.4, z/OS v2.5

Upgrade

IBM Health Checks for z/OS along with the z/OS Upgrade Workflow provide comprehensive technical material to simplify your z/OS release upgrade and your IBM z16 upgrade. The IBM Health Checks for z/OS can help determine if an upgrade action was completed properly. These checks do not change the system but can be used to determine if the



upgrade action is even applicable. As of z/OS V2.5, the z/OS Upgrade Workflow is provided within the product, ensuring that you have world-class support of the IBM Service organization. For those that choose not to use the z/OS Upgrade Workflow in its native format, you can find the export material on the IBM Documentation: https://www.ibm.com/docs/en/zos/2.5.0

Support

- z/OS V2.5 runs on these IBM Z family systems:
- IBM z16
- IBM z15 Models T01 and T02
- IBM z14 Models M01-M05 and Model ZR1
- IBM z13 and IBM z13s

For a complete description of z/OS V2.5 hardware requirements, see z/OS Planning for Installation (GA32-0890) in IBM Documentation.

General product availability

z/OS V2.5 is available as of September 30, 2021. For additional operating system availability dates, see: ibm.com/systems/z/os/zos/support/zos_eos_dates.html

z/OS V2.5 features many other functions to allow you to harness the value of your transactional and operational data by strengthening efficiencies and capabilities of batch processing and providing a robust and high-performing I/O infrastructure, including enhancements to file systems and access methods.

Why IBM?

As you transform your business by examining your business processes, technology, products and services, IBM remains your trusted business partner. IBM can help you with your transformation to support cloud, analytics and mobile workloads while preserving the needed qualities of service for your existing mission critical workloads.

IBM can help you drive revenue growth and reduce costs using proven technology solutions.

Our experts can help you configure, design and implement a z/OS solution optimized for the needs of your business.

IBM has the business and technical expertise in systems, software, delivery and financing to help you optimize your technology environment to meet the opportunities and challenges of the digital economy.

For more information

Please also refer to z/OS V2.5 System-Level, Planning for Installation, Learning about z/OS—List of base elements and optional features.

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: ibm.com/financing

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IBM Corporation
New Orchard Road
Armonk, NY 10504