

# IBM Z and Cloud Modernization Stack 2022.2.1 delivers an evolving flexible solution for IBM zSystems modernization in a Red Hat OpenShift powered platform, with revised naming for IBM Wazi Developer for Red Hat CodeReady Workspaces

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## At a glance

IBM Z<sup>(R)</sup> and Cloud Modernization Stack 2022.2.1 delivers a comprehensive IBM<sup>(R)</sup> z/OS<sup>(R)</sup> solution for modernization that offers:

- Stable performance
- Flexibility
- Scalability
- Reliability

The Wazi components are renamed.

IBM Wazi Developer for Red Hat<sup>(R)</sup> CodeReady Workspaces (IBM Wazi Developer) is renamed IBM Wazi.

IBM Wazi Code subcomponents are renamed to:

- Wazi for Eclipse
- Wazi for VS Code
- Wazi for Dev Spaces

The IBM Wazi Sandbox and IBM Wazi Analyze names remain unchanged.

## Overview

IBM Z and Cloud Modernization Stack 2022.2.1 delivers a foundational modernization solution that helps enable organizations to extend their IBM zSystems, applications, and data to hybrid cloud environments through the Red Hat OpenShift<sup>(R)</sup> Container Platform. This solution converges IBM zSystems with cloud native, container-based platforms and associated orchestration and management solutions to support the full lifecycle of IBM z/OS application modernization.

IBM Z and Cloud Modernization Stack delivers a single, flexible platform with the tools and capabilities needed to modernize z/OS environments and applications. It can help organizations modernize at a lower cost, with less risk, and a faster time to

market than migrating applications to public cloud alone, and organizations only pay for the tools and capabilities used.

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## Key requirements

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

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## Planned availability date

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June 14, 2022

Availability within a country is subject to local legal requirements.

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## Description

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Included in IBM Z and Cloud Modernization Stack are the following foundational IBM zSystems software products that deliver application modernization and z/OS integration capabilities as entitled and included features under the single product deliverable:

- IBM Wazi, previously called IBM Wazi Developer, offers a cloud native experience to create and update your z/OS applications.

IBM Z and Cloud Modernization Stack 2022.2.1 includes the following capabilities:

### **z/OS Connect Designer and z/OS Connect Server container images**

These components deliver rich new capabilities in support of current API standards and a new containerized deployment option to empower agile development teams to build APIs as part of their DevOps pipelines.

### **z/OS Cloud Broker**

z/OS Cloud Broker installs as an add-on to the Red Hat OpenShift Container Platform and provides direct interaction with z/OS computing resources or existing platform tools. By using z/OS Cloud Broker, cloud administrators and system programmers can expose z/OS resources in the Red Hat OpenShift Container Platform catalog for consumption by users across an organization's IT enterprise.

### **IBM Wazi (Wazi Code, Wazi Sandbox, and Wazi Analyze)**

IBM Wazi delivers a cloud native development experience for developing and updating z/OS applications with speed and flexibility. With IBM Wazi, application developers can set up their virtual z/OS environment in a click on an OpenShift powered hybrid multicloud platform, and use the industry standard integrated development environment (IDE) of their choice.

IBM Wazi includes the following components:

**Wazi Code:** Developers want to work with common tools, making it easier to integrate teams and work together to build solutions. Wazi Code offers that cloud-native experience familiar to many developers today across organizations. Whether working locally or remotely, Wazi Code lets you choose your favorite IDE, now referred to as Wazi for Dev Spaces, Wazi for VS Code, or Wazi for Eclipse, to edit, build, and debug applications with rich z/OS language support, interactive access to z/OS systems, and integration with modern source code management systems, such as GitHub and GitLab.

**Wazi for Dev Spaces**, formerly Wazi Developer for Workspaces, now supports both OpenShift on x86 and OpenShift on Linux<sup>(R)</sup> on zSystems architectures. It provides an in-browser IDE built on the Red Hat CodeReady Workspaces project,

enabling you to code, build, test, and run applications that run in production from any machine. This release includes a certified industry-standard container with enhanced support for air gap installation to work offline in OpenShift on x86 and OpenShift on Linux on zSystems architectures.

**Wazi for VS Code**, formerly Wazi Developer for VS Code, runs on the desktop. It provides a set of Microsoft™ VS Code extensions to deliver a simple and familiar edit, build, and debug experience.

**Wazi for Eclipse**, formerly Wazi Developer for Eclipse, runs on the desktop. This Eclipse-based IDE offers development teams a familiar edit, build, and debug experience that works with the on-premises Eclipse framework.

This release includes:

- Support for z/OS V2.5 and macOS
- Language updates supporting IBM z16™
- Enhanced RSE API capabilities such as custom attributes when running UNIX<sup>(R)</sup> file queries, job queries, options for filtering and sorting attributes for job queries and display active queries, store personal JSON data to store and retrieve as needed, and query PDS members with custom attributes
- COBOL Source Code Formatter
- Clarifications for UI references to COBOL 5.1

### **IBM Z Open Editor, Zowe™ Explorer, and Zowe CLI**

- Full Zowe 2.0 and 1.x backwards compatibility support.
- Added client updates for new language updates:
  - ZAPP schema refinements for conditional compilation and multifolder support
  - Other LSP client updates and new settings
- It is now possible to connect with IBM by giving feedback in Wazi for VS Code to help improve the user experience.

**Wazi Analyze:** A rapid analysis tool for developers to discover relationships between the components of their z/OS applications and to understand the impact of potential changes. It provides a graphical visualization of COBOL, PL/I, Java™, and Assembler application artifact dependencies in a web user interface.

This release includes an enhanced impact analysis capability to enable developers to scan and analyze C programs, in addition to COBOL, PL/I, Java, and Assembler.

**Wazi Sandbox:** This tool provides a highly flexible and modern development environment to develop and test z/OS application components in a fully virtualized, containerized, self-service, personal sandbox environment running on Red Hat OpenShift that runs on x86 hardware.

This release includes:

- Certified industry-standard container with enhanced support for air gap installation to work offline, along with support for IBM Cloud<sup>(R)</sup> and security updates
- The latest customized software that includes support for IBM Db2<sup>(R)</sup> 12, ZD&T 13.0, IBM IMS 15.1, IBM Z Monitoring Suite 1.2.0, IBM Tivoli<sup>(R)</sup> Workload Scheduler 9.5.0, Zowe 1.10.0, IBM CICS<sup>(R)</sup> 5.6 through ADCD z/OS V2R5 December Edition of 2021 for quickly implementing a z/OS system focusing on application development

### **Open Enterprise Languages on z/OS**

- IBM Open Enterprise SDK for Go is an industry-standard Go compiler that brings a powerful framework for building fast and scalable applications.

- IBM 64-bit SDK for z/OS Java Technology Edition provides a Java Standard Edition development kit, enabling developers to utilize the plethora of Java APIs, libraries, and frameworks.
- IBM Open Enterprise SDK for Node.js provides a standalone JavaScript runtime and server-side solution that enables developers to build Node.js applications and modules for z/OS.
- IBM Open Enterprise SDK for Python enables application developers to use one of the fastest growing programming languages natively on the IBM z/OS platform.
- IBM C/C++ for Open Enterprise Languages on z/OS is an industry-standard C/C++ compiler for use by :
  - IBM Open Enterprise SDK for Go
  - IBM Open Enterprise SDK for Node.js
  - IBM Open Enterprise SDK for Python
  - IBM 64-bit SDK for z/OS, Java Technology Edition
  - IBM Semeru Runtime Certified Edition for z/OS
  - IBM Z Open Automation Utilities

### **Accessibility by people with disabilities**

Accessibility Compliance Reports (previously known as a VPAT) containing details on accessibility compliance to standards, including the Worldwide Consortium Web Content Accessibility Guidelines, European Standard EN 301 349, and US Section 508, can be found on the [IBM Accessibility Conformance Reports](#) website.

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## **Reference information**

For more information about IBM Z and Cloud Modernization Stack 2022.2.1, see Software Announcement [AP22-0060](#), dated January 18, 2022.

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## **Program number**

<b>Program number</b>	<b>VRM</b>	<b>Program name</b>
5900-A8N	2022.2.1	IBM Z and Cloud Modernization Stack

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## **Offering Information**

Product information is available on the [IBM Offering Information](#) website.

More information is also available on the [Passport Advantage<sup>\(R\)</sup>](#) and [Passport Advantage Express](#) website.

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## **Publications**

None.

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## **Services**

### **IBM Systems Lab Services**

Systems Lab Services offers infrastructure services to help build hybrid cloud and enterprise IT solutions. From servers to storage systems and software, Systems Lab Services can help deploy the building blocks of a next-generation IT infrastructure to empower a client's business. Systems Lab Services consultants can perform

infrastructure services for clients online or onsite, offering deep technical expertise, valuable tools, and successful methodologies. Systems Lab Services is designed to help clients solve business challenges, gain new skills, and apply best practices.

Systems Lab Services offers a wide range of infrastructure services for IBM Power<sup>(R)</sup> servers, IBM Storage systems, IBM zSystems, and IBM LinuxONE. Systems Lab Services has a global presence and can deploy experienced consultants online or onsite around the world.

For assistance, contact Systems Lab Services at [ibmsls@us.ibm.com](mailto:ibmsls@us.ibm.com).

To learn more, see the [IBM Systems Lab Services](#) website.

### **IBM Consulting<sup>TM</sup>**

As transformation continues across every industry, businesses need a single partner to map their enterprise-wide business strategy and technology infrastructure. IBM Consulting is the business partner to help accelerate change across an organization. IBM specialists can help businesses succeed through finding collaborative ways of working that forge connections across people, technologies, and partner ecosystems. IBM Consulting brings together the business expertise and an ecosystem of technologies that help solve some of the biggest problems faced by organizations. With methods that get results faster, an integrated approach that is grounded in an open and flexible hybrid cloud architecture, and incorporating technology from IBM Research<sup>(R)</sup> and IBM Watson<sup>(R)</sup> AI, IBM Consulting enables businesses to lead change with confidence and deliver continuous improvement across a business and its bottom line.

For additional information, see the [IBM Consulting](#) website.

### **IBM Technology Support Services (TSS)**

Get preventive maintenance, onsite and remote support, and gain actionable insights into critical business applications and IT systems. Speed developer innovation with support for over 240 open-source packages. Leverage powerful IBM analytics and AI-enabled tools to enable client teams to manage IT problems before they become emergencies.

TSS offers extensive IT maintenance and support services that cover more than one niche of a client's environment. TSS covers products from IBM and OEMs, including servers, storage, network, appliances, and software, to help clients ensure high availability across their data center and hybrid cloud environment.

For details on available services, see the [Technology support for hybrid cloud environments](#) website.

### **IBM Expert Labs**

Expert Labs can help clients accelerate their projects and optimize value by leveraging their deep technical skills and knowledge. With more than 20 years of industry experience, these specialists know how to overcome the biggest challenges to deliver business results that can have an immediate impact.

Expert Labs' deep alignment with IBM product development allows for a strategic advantage as they are often the first in line to get access to new products, features, and early visibility into roadmaps. This connection with the development enables them to deliver First of a Kind implementations to address unique needs or expand a client's business with a flexible approach that works best for their organization.

For additional information, see the [IBM Expert Labs](#) website.

### **IBM Security<sup>(R)</sup> Expert Labs**

With extensive consultative expertise on IBM Security software solutions, Security Expert Labs helps clients and partners modernize the security of their applications,

data, and workforce. With an extensive portfolio of consulting and learning services, Expert Labs provides project-based and premier support service subscriptions.

These services can help clients deploy and integrate IBM Security software, extend their team resources, and help guide and accelerate successful hybrid cloud solutions, including critical strategies such as zero trust. Remote and on-premises software deployment assistance is available for IBM Cloud Pak<sup>(R)</sup> for Security, IBM Security QRadar<sup>(R)</sup>/QRoC, IBM Security SOAR/Resilient<sup>(R)</sup>, IBM i2<sup>(R)</sup>, IBM Security Verify, IBM Security Guardium<sup>(R)</sup>, and IBM Security MaaS360<sup>(R)</sup>.

For more information, contact Security Expert Labs at [sel@us.ibm.com](mailto:sel@us.ibm.com).

For additional information, see the [IBM Security Expert Labs](#) website.

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## Technical information

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### **Specified operating environment**

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#### **Software requirements**

For details, see the [Software Product Compatibility Reports](#) website.

#### **IBM Support**

[IBM Support](#) is your gateway to technical support tools and resources that are designed to help you save time and simplify support. IBM Support can help you find answers to questions, download fixes, troubleshoot, submit and track problem cases, and build skills. Learn and stay informed about the transformation of IBM Support, including new tools, new processes, and new capabilities, by going to the [IBM Support Insider](#).

#### **Additional IBM support**

##### **IBM Client Engineering for Systems**

Client Engineering for Systems is a framework for accelerating digital transformation. It helps you generate innovative ideas and equips you with the practices, technologies, and expertise to turn those ideas into business value in weeks. When you work with Client Engineering for Systems, you bring pain points into focus. You empower your team to take manageable risks, adopt leading technologies, speed up solution development, and measure the value of everything you do. Client Engineering for Systems has experts and services to address a broad array of use cases, including capabilities for business transformation, hybrid cloud, analytics and AI, infrastructure systems, security, and more. Contact Client Engineering for Systems at [sysgarage@ibm.com](mailto:sysgarage@ibm.com).

### **Planning information**

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#### **Packaging**

This offering is delivered through the internet as an electronic download. There is no physical media.

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## Ordering information

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For ordering information, consult your IBM representative or IBM Business Partner, or go to the [Passport Advantage](#) website.

These programs are available only through Passport Advantage.

These programs may only be sold directly by IBM or by IBM authorized Business Partners.

To locate IBM Business Partners in your geography, see the [Find a Business Partner](#) page.

### Passport Advantage

There is no new ordering information in this release. For available part numbers, see Software Announcement [AP22-0060](#), dated January 18, 2022.

### Charge metric

Charge metric information can be found in the corresponding License Information document.

Program number	License Information document title	License Information document number
5900-A8N	IBM Z and Cloud Modernization Stack	<a href="#">L-NADN-CDXPBY</a>

Select your language of choice and scroll down to the Charge Metrics section. Follow-on releases, if any, may have updated terms. See the [License Information documents](#) website for more information.

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### License Information number

Program number	License Information document title	License Information document number
5900-A8N	IBM Z and Cloud Modernization Stack	<a href="#">L-NADN-CDXPBY</a>

Follow-on releases, if any, may have updated terms. See the [License Information documents](#) website for more information.

## **Limited warranty applies**

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Yes

## **Limited warranty**

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IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information about known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, see the [IBM Support Guide](#).

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

## **Program technical support**

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### **Continuous delivery (CD) support**

Technical support of a program product version or release will be available for a minimum of two years from the planned availability date, as long as your Subscription and Support is in effect.

This technical support allows you to obtain assistance (by telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Subscription and Support also provides you with access to versions, releases, and updates (CD releases, Long Term Support Releases or fixes) of the program.

You will be notified, through an announcement letter, of discontinuance of support with 12 months' notice.

If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

For additional information about the CD support lifecycle policy, see the [IBM Continuous Delivery Support Lifecycle Policy](#) web page.

For additional information about the IBM Software Support Lifecycle Policies, see the [Standard and enhanced IBM software support lifecycle policies](#) website.

## **Money-back guarantee**

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If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

## **Volume orders (IVO)**

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No

## **Passport Advantage applies**

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Yes, information is available on the [Passport Advantage and Passport Advantage Express](#) website.

## **Software Subscription and Support applies**

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Yes. Software Subscription and Support, also referred to as Software Maintenance, is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and Technical Support are provided by the Software Subscription and Support offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software, and Technical Support provides voice and electronic access to IBM support organizations, worldwide.

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For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, go to the [Passport Advantage and Passport Advantage Express](#) website.

## **Variable charges apply**

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No

## **Educational allowance available**

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Not applicable.

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## **Statement of good security practices**

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IT system security involves protecting systems and information through intrusion prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a regulatory compliant, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

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## Prices

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For all local charges, contact your local IBM representative or IBM Business Partner.

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If you are an IBM Business Partner acquiring products from IBM, you may link to Passport Advantage Online for resellers where you can obtain Business Partner pricing information. An IBMid and password are required to access the [IBM Passport Advantage](#) or [IBM PartnerWorld<sup>\(R\)</sup>](#) website.

### **Passport Advantage**

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## Regional availability

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Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, People's Republic of China, Christmas Island, Cocos (Keeling) Islands, Cook Islands, Fiji, Heard Island and McDonald Islands, Hong Kong, India, Indonesia, Kiribati, Republic of Korea, Lao People's Democratic Republic, Macao, Malaysia, Maldives, Mongolia, Myanmar, Nauru, Nepal, New Zealand, Niue, Norfolk Island, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Taiwan, Thailand, Timor-Leste, Tokelau, Tonga, Tuvalu, and Socialist Republic of Viet Nam

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