

# IBM Z and Cloud Modernization Stack 2022.1.1 delivers a flexible solution for IBM Z modernization with the Red Hat OpenShift platform

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## At a glance

IBM Z<sup>(R)</sup> and Cloud Modernization Stack 2022.1.1 delivers a foundational IBM Z application and data modernization solution that can enable clients to integrate and extend their IBM Z systems, applications, and data with hybrid cloud environments through the Red Hat<sup>(R)</sup> OpenShift<sup>(R)</sup> Container Platform. The solution can help clients accrue the following benefits:

- Make IBM Z applications and data available to cloud-native applications
- Implement standard ways of working with a cloud-native development and testing experience
- Converge IBM Z systems with the entire enterprise environment on cloud-native, container-based platforms along with associated orchestration and management solutions, supporting the full lifecycle of z/OS<sup>(R)</sup> application modernization

IBM Z and Cloud Modernization Stack expands on the product formerly named IBM<sup>(R)</sup> Wazi Developer for Red Hat CodeReady Workspaces with new components and a wider feature set for modernization.

## Overview

IBM Z and Cloud Modernization Stack 2022.1.1 delivers a flexible solution with industry-standard tools and capabilities that can enable organizations to modernize z/OS applications and data at a lower cost with less risk and faster time to market than migrating applications to public clouds alone. The solution enables clients to pay for only the tools and capabilities that they use from the following solution components:

- z/OS Connect. Delivers a simple and intuitive way to bring the power of APIs to your mainframe to make Z applications and data central to your hybrid cloud strategy.
- z/OS Cloud Broker. Integrates z/OS-based services and resources into Red Hat OpenShift, which can enable organizations and their users to quickly create, modernize, deploy, and manage applications, data, and infrastructure.
- Wazi Sandbox. Provides a highly flexible and modern development environment to develop and test your z/OS application components in a fully virtualized, containerized, self-service, personal sandbox environment running on Red Hat OpenShift that runs on x86 hardware.

- Wazi Code. Provides a common and consistent experience that is familiar to developers. Whether you are working locally or remotely, Wazi Code lets you choose your favorite integrated development environment (VS Code, Red Hat CodeReady Workspaces, or Eclipse) to edit, build, and debug your applications through rich z/OS language support. Includes interactive access to z/OS systems and integrates with modern source code management systems such as GitHub and GitLab.
- Wazi Analyze. Rapid analysis tool with a graphical web-based user interface that can help developers quickly discover the relationships between the components of their z/OS applications. Offers insights to the impact of changes and can enable you to update with confidence.

IBM Z and Cloud Modernization Stack 2022.1.1 can help organizations gain the following benefits:

- Simple and fast z/OS API development and deployment leveraging OpenAPI 3.0
- Agile enterprise DevOps with open industry-standard developer experiences
- Modern programming languages on z/OS, including Node.js, Python, and Go
- Cloud-native development based on Red Hat OpenShift
- Self-service access to z/OS resources with no special skills required
- Integrations to support data modernization
- Integrations to support application management
- Capability to connect and manage z/OS servers from Red Hat OpenShift

These components can work together to deliver a full-featured z/OS solution for modernization that brings hybrid cloud integration of z/OS systems, a cloud-native developer experience, and a framework driving accelerated application modernization on the Red Hat OpenShift platform.

IBM Z and Cloud Modernization Stack 2022.1.1 runs on Red Hat OpenShift Container Platform and includes limited use entitlement to the Red Hat OpenShift Container Platform.

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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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March 15, 2022

Availability within a country is subject to local legal requirements.

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## Description

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IBM Z and Cloud Modernization Stack 2022.1.1 delivers a foundational solution supporting a hybrid cloud strategy for IBM Z modernization. The solution is a collection of products integral to delivering a cloud-native developer experience with industry-standard tooling and processes for use on z/OS systems and the Red Hat OpenShift Container Platform. The solution delivers key technologies for integration of z/OS systems, providing z/OS environments to end users and enabling support for standard DevOps lifecycle and tooling for z/OS.

The following components are delivered in IBM Z and Cloud Modernization Stack 2022.1.1.

### **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 Connect Designer capabilities include the following:

- OpenAPI 3.0 support that can help enterprises build APIs to meet company and industry standards.
- API-first functional mapping that creates an API-first process that puts the API specification at the heart of the project.
- z/OS Connect Designer, a powerful new web-based user interface that provides a no-code approach to help create APIs. The z/OS Connect Designer is delivered as a standalone container, ready to run in Red Hat OpenShift alongside Wazi for Red Hat CodeReady Workspaces or IBM Cloud Pak<sup>(R)</sup> for Integration to deliver a cloud-native experience for creating and managing API flows.

z/OS Connect Server capabilities include the following:

- Enhanced role-based security model to provide more control to security administrators.
- The containerized z/OS Connect Server and its provided operators that enable development teams to independently deploy and scale API integrations.
- Access to metrics API facility to provide near real-time statistics to tooling such as Prometheus to track usage data; for example, how many times an API operation is called or how long those calls take.

### **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.

z/OS Cloud Broker capabilities include the following:

- Direct self-service access to IBM z/OS computing resources by users of Red Hat OpenShift
- Connectivity to an industry-standard Kubernetes (K8s) container runtime with an emphasis on simplicity, robustness, and portability
- Capability to track and manage z/OS resources within Red Hat OpenShift
- Maximum control over resources and z/OS software subsystem instances
- Access to service catalogs with customized z/OS services that can exploit the multitenancy and rapid elasticity of z/OS
- Agility for z/OS to help businesses protect, integrate, and grow their IT investments into cloud-native development environments

### **Wazi Family**

IBM Wazi (Wazi Code, Wazi Sandbox, and Wazi Analyze) components enable organizations to accelerate hybrid application development and enterprise wide DevOps standardization. Wazi enables clients to empower their developers with a choice of IDE, personal z/OS sandbox, and rapid analysis tool to confidently deliver high-quality changes at a rapid pace. Wazi forms a critical component of clients' hybrid strategy, driving business agility while minimizing the need for specialized skills.

### **Wazi Code**

Wazi Code can help developers unfamiliar with z/OS and the IBM Z mainframe to develop and deliver applications. With Wazi Code, developers can edit, build, and debug COBOL, PL/I, HLASM, and REXX programs with their choice of industry-

standard modern IDEs. It includes interactive access to z/OS systems and integrates with modern source code management tools such as Git and GitLab.

Wazi code has a custom plug-in and devfile registry support. Mainframe developers can have a feature-rich mainframe development package that includes the following capabilities:

- Rich language support for COBOL, PL/I, HLASM, REXX, and IBM Job Control Language (JCL) using IBM Z Open Editor
- Connectivity to IBM Z host through a command-line interface or GUI
- Building COBOL, PL/1, REXX, and HLASM programs with user build

IDE options include Wazi Developer for VS Code, Wazi Developer for Workspaces, and Wazi Developer for Eclipse.

Wazi Developer for VS Code extends the functions of Microsoft™ Visual Studio (VS) Code to provide z/OS developers with a familiar and straightforward edit, build, and debug experience. In addition, developers have the option to integrate numerous other extensions from the Microsoft VS Code marketplace.

Wazi Developer for Workspaces is a development environment that provides a modern experience with an in-browser IDE that can be used to code, build, test, debug, and run applications. It runs in a Red Hat OpenShift Container Platform, providing a consistent, security-rich, and zero-configuration development environment that interacts with the IBM Z platform. Powered by the open-source projects Zowe™ and Red Hat CodeReady Workspaces, Wazi Developer for Workspaces offers a streamlined onboarding process to give mainframe developers the tools they need for the task at hand, enabling them to create a customizable environment. With a single click, developers can provision the workspace, eliminating the need for local environment configurations.

Wazi Developer for Eclipse is a modern lean IDE with program understanding, edit, debug, and build automation capabilities, enabling a platform-neutral continuous integration and deployment pipeline that includes z/OS application components. It is a toolset for z/OS development teams that plan to transform and unify their software delivery practices around modern source code management systems such as Git and IBM Engineering Workflow Management.

Wazi Developer for Eclipse provides an Eclipse-based common workbench and tools for the following:

- Development of COBOL, PL/I, REXX, and Java™ programs
- Interactive access to z/OS systems
- Integration with Git repositories, IBM Engineering Workflow Management, and the IBM Z Development and Test Environment
- Plug-in development environment

Capabilities in version 2.0 include Zowe 2.0 readiness to utilize new Zowe CLI 7.0 capabilities and integrations.

### **Wazi Developer for Workspaces**

Capabilities include the following:

- OpenShift on Linux<sup>(R)</sup> on Z is now supported by providing multi-architecture image bundles that transparently enable deployment on all supported architectures.
- IBM Certified Containers are supported.
- Support is added for editing and running Ansible<sup>(R)</sup> and Python automation.
- Simplified and faster deployment can be achieved with the IBM Operator Catalog.
- Support for air gap installation is available to work offline.

## **Wazi Developer for Eclipse**

With IBM Dependency Based Build, you can eliminate the need to scan for dependencies on the host.

## **Wazi Sandbox**

Wazi Sandbox provides a fully virtualized containerized z/OS environment that enables development and testing of z/OS applications on Red Hat OpenShift running on x86 hardware.

Capabilities in version 2.0 include the following:

- IBM Extended Application Developer Controlled Distribution (ADCD) for z/OS is updated to ADCD z/OS V2R4 May Edition for 2021 with updated software packages.
- IBM Certified Containers are supported.
- Simplified and faster deployment can be achieved with the IBM Operator Catalog.
- Support for air gap installation is available to work offline.
- Improved user experience enables simplified connection to modern z/OS services through exposed z/OS ports.

## **Wazi Analyze**

Wazi Analyze can help 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.

Capabilities in version 2.0 include the following:

- Enhanced impact analysis capability to enable developers to scan and analyze C programs, in addition to COBOL, PL/I, Java, and Assembler.
- Capability to enable developers to run Wazi Analyze container on Linux on Z.

## **Accessibility by people with disabilities**

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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 Report Request](#) website.

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## **Statement of general direction**

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The IBM Z and Cloud Modernization Stack leverages Red Hat OpenShift as the enterprise-ready Kubernetes container platform supporting a client's hybrid cloud strategy. For added client choice, IBM intends to make Red Hat OpenShift Container Platform support available on IBM z/OS with IBM z/OS Container Extensions (zCX) in addition to the many server platforms already supported today.

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## Reference information

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For more information about IBM Z and Cloud Modernization Stack, formerly known as IBM Wazi Developer for Red Hat CodeReady Workspaces, see Software Announcement [AP21-0246](#), dated July 6, 2021.

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## Program number

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Program number	VRM	Program name
5900-A8N	2022.1.1	IBM Z and Cloud Modernization Stack

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## Offering Information

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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

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None.

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## Services

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### 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 Z, 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

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 TechU**

Improve your knowledge in hybrid cloud and AI solutions. TechU provides the most recent content so that you can learn, engage, and increase your skills with IBM Technology specialists.

A one-year, renewable digital TechU membership provides access to IBM Systems online education to help address your technical enablement needs for existing and new projects.

Submit questions or comments to [techuid@us.ibm.com](mailto:techuid@us.ibm.com).

For additional details, see the [IBM TechU](#) 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 Garage™

IBM Garage 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 IBM Garage 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. IBM Garage 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. For more information, see the [IBM Garage](#) website.

### 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.

This program is available only through Passport Advantage.

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

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

### Passport Advantage

Part number description	Part number
IBM Z and Cloud Modernization Stack Virtual Processor Core License + SW Subscription & Support 12 Months	D09F1ZX
IBM Z and Cloud Modernization Stack Virtual Processor Core Annual SW Subscription & Support Renewal	E09F0ZX

Part number description	Part number
IBM Z and Cloud Modernization Stack Virtual Processor Core SW Subscription & Support Reinstate 12 Months	D09F4ZX
IBM Z and Cloud Modernization Stack Virtual Processor Core Monthly License	D09F2ZX
IBM Z and Cloud Modernization Stack Virtual Processor Core Subscription License	D09F3ZX

### Cross-platform product for use on IBM Z Integrated Facility for Linux<sup>(R)</sup> (IFL) engines or zEnterprise<sup>(R)</sup> BladeCenter Extension

Order the part numbers that follow when the product is intended to run on zEnterprise BladeCenter Extension or the Linux operating system on IBM Z IFL engines. If the product is not intended to run in these environments, order from the other set of part numbers in this announcement. This set of part numbers provides the identical supply and authorization as the other set in this announcement.

Part number description	Part number
IBM Z and Cloud Modernization Stack for Linux on IBM Z Virtual Processor Core License + SW Subscription & Support 12 Months	D09F6ZX
IBM Z and Cloud Modernization Stack for Linux on IBM Z Virtual Processor Core Annual SW Subscription & Support Renewal	E09F5ZX
IBM Z and Cloud Modernization Stack for Linux on IBM Z Virtual Processor Core SW Subscription & Support Reinstate 12 Months	D09F9ZX
IBM Z and Cloud Modernization Stack for Linux on IBM Z Virtual Processor Core Monthly License	D09F7ZX
IBM Z and Cloud Modernization Stack for Linux on IBM Z Virtual Processor Core Subscription License	D09F8ZX

### Charge metric

The charge metrics for this licensed product can be found in the following 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-C9AHEB</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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## **Software Maintenance**

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Licenses under the IBM International Program License Agreement (IPLA) provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support can be extended by the purchase of a renewal option, if available. Two charges apply: a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

## **License Information number**

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The following License Information document applies to the offering in this announcement:

<b>Program number</b>	<b>License Information document title</b>	<b>License Information document number</b>
5900-A8N	IBM Z and Cloud Modernization Stack	<a href="#">L-NADN-C9AHEB</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 on 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 on the CD support lifecycle policy, see the [IBM Continuous Delivery Support Lifecycle Policy](#) Continuous Delivery (CD) support model web page.

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

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### **Money-back guarantee**

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.

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### **Volume orders (IVO)**

No

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### **Passport Advantage applies**

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

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### **Software Subscription and Support applies**

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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While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance by telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your users.) IBM provides Severity 1 assistance 24 hours a day, 7 days a week. For additional details, see the [IBM Support Guide](#). Software Subscription and Support does not include assistance for the design and development of applications, your use of programs in other than

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Unless specified otherwise in a written agreement with you, IBM does not provide support for third-party products that were not provided by IBM. Ensure that when contacting IBM for covered support, you follow problem determination and other instructions that IBM provides, including in the [IBM Support Guide](#).

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.

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### **Variable charges apply**

No

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### **Educational allowance available**

Not applicable.

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## **Statement of good security practices**

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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### **Passport Advantage**

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## **Regional availability**

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 Vietnam

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[IBM Directory of worldwide contacts](#)