



# IBM Z Development and Test Environment

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## Highlights

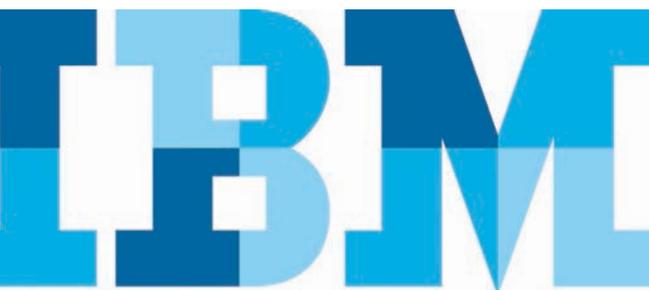
- Allows mainframe operating systems, middleware, and other software to run on Intel-compatible on-premise system or cloud instance.
  - Offers a set of RESTful APIs to automate the provisioning in the DevOps pipeline.
  - Runs current, genuine z/OS software and middleware.
  - Offers the capability to provision the operating system and deploy an image to the OpenStack cloud.
  - Offers a more flexible software-based license for an Authorized User Single Session.
  - Supports for data set extraction and volume extraction functions.
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Many enterprises using mainframe have some, practical business challenges. There is insufficient mainframe development and test LPAR availability, which leads to defects and missed schedules. The tightly controlled mainframe environment prevents agile experimentation and prototyping. The cost is high in terms of mainframe development and test hardware and software. Not to mention the skill gaps due to offshoring, outsourcing and most of the skills being near retirement.

That's where IBM® Z® Development and Test Environment (ZD&T) can help. It provides lower development costs and test LPARs on Intel compatible on-premise system or cloud. The initial development and test activities performed on ZD&T enables reallocation of MIPS to a higher value production workload. It also provides portable, indestructible environment for skill building.

ZD&T helps enterprises to perform shift left testing with better test coverage earlier in the cycle on high fidelity z/OS development and test environment, which leads to better quality and quicker delivery. The distributed environments reduce errors caused by contention and enable easier problem determination on easily provisioned systems.

ZD&T also brings agility to the business. z/OS on x86 system that can be virtualized and reset offers a developer sandbox for prototyping and version to version migration. Teams can develop and test z/OS



applications anytime, anywhere. Outsourced teams can work without mainframe access. Its self-service offering empowers your team to create z/OS application images and automatically deploy the agreed-upon images for development and test activities.

## **Accelerates Mainframe Application Development, Test and Education**

IBM Z Development and Test Environment (previously named IBM z Systems Development and Test Environment for System z) is a platform for mainframe application development, testing and education. It enables IBM z/OS middleware and other z/OS software to run on Intel-compatible platforms without the need for IBM Z mainframe hardware. It is based on the [IBM z Systems Personal Development Tool \(zPDT\)](#), which provides an emulated Z architecture with virtual I/O and devices. ZD&T also includes role-based self-service offering (providing both a web interface and RESTful APIs) that enable your team to create z/OS application images from Application Developers Controlled Distribution (ADCD), z/OS or ZD&T environment and deploy them for development and test activities.

## **z/OS development and test on x86-compatible system**

Create applications on an x86 development and test environment prior to pre-production build and test on the mainframe. Use a personal or team-centric approach for developers to implement and test code changes in an isolated and controllable IBM Z environment and eliminate the need for IBM Z mainframe hardware during initial development activities. Developers can implement quick test environment changes, such as defining new transactions and resource definitions, without involving mainframe production operations staff.

Note: IBM Z Development and Test Environment can be used for development, testing or employee education of applications that run on z/OS. It may not be used for production workloads of any kind, nor for robust development workloads, including without limitation, production module builds, pre-production testing, stress testing or performance testing.

## **Cloud integration**

Cloud integration is being leveraged to drive down provision times and allow for a more dynamic environment. Once an application image has been provisioned the first time, ZD&T will leverage the cloud and its inherent functions to dramatically reduce the provision time for any subsequent provisions of the same application image to the same cloud. More specifically, ZD&T V12 can reduce all subsequent provision to less than 30 minutes.

## **A web interface and RESTful APIs for self-service build and deployment**

Role-based offering which can be used to build and automate deployment of additional z/OS development and test environments on x86-compatible on-premise system or cloud. The environment images can be created from Application Developers Controlled Distribution (ADCD), or z/OS system, or an existing z Systems Development and Test Environment. These intuitive, web-based interface empower systems programmers to create z/OS application images more quickly, with the security and control they demand. And developers and testers can auto-deploy these official images for development and test purposes with just a few clicks, giving them the autonomy and access they need, on fit for purpose hardware that can easily be virtualized, cloned, and reset. With RESTful APIs you can integrate all the functionalities into your DevOps pipeline.

## Current levels of the IBM z/OS middleware

IBM Z Development and Test Environment comes with an as-is, unsupported z/OS software distribution that includes IBM z/OS, IBM CICS®, IBM IMS™, IBM Db2®, IBM WebSphere®, IBM z/OS Connect, COBOL, PL/I, C++, Java™ and high-level assembler (HLASM). The product also includes z/OS components of multiple DevOps for Enterprise Systems tools, including IBM Developer for IBM Z, Rational Team Concert™ and IBM UrbanCode™ Deploy.

## IBM Z education environment

Eliminate the need for an IBM Z mainframe for employee education activities, and Experiment without fear of destroying anything, as the environment can be easily reset. Support multiple users with their own system for quicker, more flexible learning. As a show case, [IBM Z Trial Program](#) is powered by ZD&T. ZD&T helps to quickly spin up an environment for user to try out the most current technology, and discard it after the usage without affecting any other users.

## Flexible licensing Options

IBM Z Development and Test Environment offers flexible licensing options, with four purchasing options:

- **Z Development and Test Environment Enterprise Edition Resource Value Unit (RVU)** is intended for enterprise teams and is licensed in terms of the highest number of activated emulated CPs through the Resource Value Unit (RVU) license metric. This metric accommodates the dynamic nature of the software development lifecycle, enabling movement of users and activation of development and test environments as needed to support maintenance, development, and test activities.
- **Z Development and Test Environment Enterprise Edition Authorized User Single Session** is intended for enterprise users who need their own nonshared environment and is licensed in terms of the number of Authorized User Single Session (AUSS) license metric. This metric is activated through software-based licensing to better meet the needs of enterprise users who might have data center requirements and plans for cloud deployment that are hindered by USB hardware-based licensing.
- **Z Development and Test Environment with Parallel Sysplex** includes the emulated environment for development, test, employee education, or demonstration of applications that run on z/OS. It also includes IBM z Personal Development Tool support for virtual Coupling Facility. The z/VM® software distribution enables virtual coupling of z/OS guests under z/VM. This offering is targeted for enterprise teams. RVU licenses are offered and the product is activated by software-based licensing.
- **Z Development and Test Environment Personal Edition** is intended for individual users and users who require portability. It is licensed through the Authorized User Single Install metric and is activated with a USB hardware device. It includes zPDT emulator and ADCD, but does not include the web-based interface.

IBM Z Development and Test Environment Cloud Managed DevOps services can be offered to aid in deployment and reduce project costs by leveraging a managed, virtual private cloud environment for Z Development and Test Environment. The service offers a 99.9% Service Level Objective, 24x5 support, disaster recovery, and daily backup.

IBM provides various kinds of Z Development and Test Environment services, including planning and design service, base installation service, migration service, and other optional value-add services like implementing a sysplex, implementing Linux for Z, activating customer-requested Z program products, and implementing Rational program products. All of them have well-defined deliverables and tasks to be performed.

## Why IBM?

IBM is a proven leader in DevOps solutions to optimize the return on your IT investment while reducing risk. IBM helps organizations accelerate software delivery; balance speed, cost, quality and risk; and reduce time-to-customer feedback with the solutions in our DevOps portfolio. Our solutions offer an open-standards-based platform and are designed to integrate into existing multi-platform lifecycle environments to deliver value more quickly. With its advanced functionality to efficiently enable digital transformation in a DevOps environment,

## For more information

To learn more about the IBM ZD&T, please contact your IBM representative or IBM Business Partner, or visit the following websites:

- <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=897/ENUS218-117&appname=USN>
- [ibm.com/us-en/marketplace/z-systems-development-test-environment](https://ibm.com/us-en/marketplace/z-systems-development-test-environment)

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](https://ibm.com/financing)



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