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**NOTE: all character counts include spaces**

# IBM z Systems Development and Test Environment

*Accelerate your mainframe application development, test and education on Intel-compatible platforms*

IBM Systems

Data Sheet



Please Recycle

**Quote 1 — Limit 240 characters**

## Highlights

**Highlights bullets — Limit 650 characters total. First three bullets — Limit 300 characters**

- Allows mainframe operating systems, middleware, and other software to run on Intel and Intel-compatible platforms.
- Introduces self-service tools to build and automate deployment of additional z/OS development and test environments on x86 hardware
- Runs current, genuine z/OS software and middleware
- Can be used for development and testing of new application functions, application maintenance, the investigation and verification of new middleware levels (version-to-version upgrades), prototyping of new

application architectures, demonstration of application functions, and internal employee education.

Many enterprises using mainframe have a few very practical business challenges. There are 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 off shoring, outsourcing and the majority of skills being near retirement.

That's where IBM z Systems Development and Test Environment (zD&T) can help. It provides lower cost development and test LPARS on Intel compatible hardware. The initial development and test activities performed on zD&T enables reallocation of MIPS to higher value production workload. It also provide portable, indestructible environment for skill building.

zD&T helps enterprise to do shift left testing with better test coverage earlier in the cycle on high fidelity z/OS development and test environment, which leads to 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 hardware 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 tools empower 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 Systems® Development and Test Environment (previously named Rational Development & Test Environment for System z) is a platform for mainframe application demonstration, 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 z Systems mainframe hardware. It is based on the [IBM System z Personal Development Tool \(zPDT\)](#), which provides an emulated z Systems architecture with virtual I/O and devices. zD&T also includes role-based self-service tools that enable your team to create z/OS application images from z/OS or zD&T environment and deploy them for development and test activities.

### z/OS development and test on x86 hardware

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 z Systems environment and eliminate the need for z Systems® 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 Systems Development and Test Environment can be used for development, testing, employee education or demonstration 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.

### Self-service build and deployment tools

Self-service build and deployment tools are introduced in V11, which can be used to build and automate deployment of additional z/OS development and test environments on x86 hardware. 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 tools 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 that they need, on fit for purpose hardware that can easily be virtualized, cloned, and reset.

## Current levels of the IBM z/OS middleware

IBM z Systems 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 z Systems, Rational Team Concert, Rational Test Virtualization Server and IBM UrbanCode™ Deploy, plus evaluation versions of IBM File Manager for z/OS and IBM Fault Analyzer for z/OS.

## z Systems education environment

Eliminate the need for a z Systems 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 Systems Trial Program](#) is powered by zD&T. zD&T helped 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

z Systems Development and Test Environment offers flexible licensing options, with three purchasing options:

- **z Systems Development and Test Environment** is intended for enterprise teams and is licensed in terms of the highest number of activated emulated Central Processors (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 z Systems Development and Test Environments as needed to support maintenance, development, and test activities.

From Version 10 and on, z Systems Development and Test Environment is activated through software-based licensing to better meet the needs of enterprise users who may have data center requirements and plans for cloud deployment that are hindered by hardware-based licensing.

In addition, the maximum number of emulated CPs per z Systems Development and Test Environment instance is eight, which is consistent with the architecture of z Personal Development Tool. Clients should plan on testing with their specific workload to determine the optimum number of CPs per instance. In general, three to four CPs per instance is recommended; the advantages of more CPs might be marginal, depending on the nature of the workload.

- **z Systems Development and Test Environment with Parallel Sysplex** includes the base environment for development, test, employee education, or demonstration of applications that run on z/OS, and also 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 from Version 10 on, the product is activated by software-based licensing.

The maximum number of z Systems emulated Central Processors per z Systems Development and Test Environment with Parallel Sysplex instance is eight.

Note that z Systems Development and Test Environment with Parallel Sysplex is intended for clients who already have Parallel Sysplex applications deployed. Installation and configuration of z/VM is required to deploy z/OS in a Parallel Sysplex configuration. z/OS in a Parallel Sysplex configuration may only be run as guest operating systems under z/VM and usage of z/VM is restricted to operations required to facilitate use of the z Personal Development Tool in a Parallel Sysplex configuration that includes z/OS guests under z/VM and one or more virtual Coupling Facility. The Parallel Sysplex offering is sold through the IBM special bid process. For ordering, contact your IBM representative, or an IBM Business Partner.

- **z Systems 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, which is orderable through a physical media pack. Each organization that purchases z Systems Development and Test Environment Personal Edition will need to procure and activate at least one USB hardware device from IBM. Clients can order the USB hardware device as soon as they become entitled to z Systems Development and Test Environment Personal Edition, or they can ask a representative to add the appropriate media part number to their z Systems Development and Test Environment Personal Edition license order.

Each instance of z Systems Development and Test Environment Personal Edition is allocated three z Systems emulated CPs.

z Systems 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 Systems 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 Systems 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 Systems, activating customer-requested z Systems program products, and implementing Rational program products. All of them have well-defined deliverables and tasks to be performed.

## Financial & Operational Savings

Significant cost savings and improved profitability are possible with zD&T.

- Application development and test costs reduced up to 75 percent for a large enterprise professional services company
- LPAR clone time within seconds (excluding the copy time of the disks)
- Application development and test cost reduced up to 25 percent for a large enterprise financial services company

## Why IBM?

### Why IBM? — Limit 400 - 500 characters

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:

- [ibm.com/systems/z/solutions/enterprise-devops/](https://ibm.com/systems/z/solutions/enterprise-devops/)
- <https://www.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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Route 100  
Somers, NY 10589

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