

# Agile, Secure Test Data Management for Mainframe

Fast and compliant provisioning  
of mainframe data on-premises  
or in the cloud

IBM mainframe technology has been providing power and reliability for mission-critical transaction processing for decades, and remains a foundation for IT systems in many industries. In a fast-paced digital world however, mainframe application development is challenged to keep pace with accelerated release cadences of open systems in the IT portfolio. Testing resources are limited and expensive, slowing native development or modernization projects. Application teams are forced to either reduce test coverage and compromise quality to maintain schedule, or delay delivery of critical code changes.

To overcome these challenges, many businesses rely on IBM's z/OS emulation of the mainframe using cloud or on-premise x86 Linux filesystems. Mainframe virtualization provides an environment for application development and testing without the need for costly hardware. By offloading application development to a virtual mainframe, expensive MIPS can be reallocated to support business critical production transactions.

Leveraging the virtual mainframe results in software delivery processes which can readily adapt to modern DevOps practices and automated CI/CD workflows. But just like distributed environments, data remains a bottleneck in an otherwise automated development tool chain.



## Key Benefits

- » Lower MIPS consumption with flexible virtual databases deployed on x86 hardware
- » Securely deploy mainframe data into development environments on-prem or in the cloud
- » Leverage API's to rewind, bookmark, and share datasets
- » Easily provision mainframe data for complex SIT and UAT testing

A Fortune 100 healthcare company realized huge productivity benefits by using Delphix to integrate mainframe data with open systems, supplying this data into cloud-based CI/CD pipelines to:

- » Increase productivity of development teams by 37%
- » Automate mainframe data delivery within CI/CD workflows
- » Boost efficiency of database operations by 100%
- » Reduce storage footprint by 97%

## Bring DevOps Data Agility to Mainframe

Delphix eliminates data-related inefficiencies in the software delivery lifecycle, creating lightweight virtualized copies of mainframe production data that are securely provisioned into flexible x86 test environments. Virtual databases (VDBs) are programmable objects, turning siloed mainframe data into agile virtualized data for use in CI/CD pipelines. API-driven data operations replace hundreds of manual steps to eliminate 95% data bottlenecks.

Virtualization changes the physics of data, so Delphix VDBs are easily portable, whether on-premises or in the cloud. Automating data operations for development and testing re-architects the mainframe delivery model to align with DevOps practices across the entire application stack. The solution is powered by Delphix, IBM mainframe virtualization, and a mainframe plugin SDK available in partnership with Sandhata.

## Unprecedented Productivity Gains for Mainframe Development

Delphix creates a golden copy of production mainframe data, then efficiently captures change data to ensure VDBs remain synced with the production instance. Production-quality VDBs transform application development workflows, heightening productivity with a continuous flow of fresh data into test environments. Everything that runs on the Z Mainframe is a candidate for virtualization, including z/OS, application tier, data tier, third-party applications, and more.

Dev and test teams can shift left with high-fidelity data to find data-related defects earlier in the release cycle where they are increasingly problematic to uncover and more expensive to fix. Catching defects before they progress down the delivery pipeline increases developer productivity as much as 70%\*.

The read/write virtual environments provide application teams independence to rapidly provision test data, replacing legacy ticketing processes that add weeks or even months to project timelines. Customized data environments can be easily assembled depending on the specific needs of each test effort such as maintenance, system upgrades, development of new functionality, and prototyping. And API-driven control means development and test teams don't have to involve IT operations to rewind data after destructive testing.

## Secure Data Mobility

The data stored in mainframe databases contain massive amounts of sensitive information that needs to be protected when provisioning into test environments.

To ensure compliance with privacy regulations, Delphix automates discovery and masking of sensitive data in VDBs prior to distribution. Masking irreversibly changes the data and has no value to a hacker. Data remains useful for development and testing, however, as the process replaces sensitive information with fictitious yet valid equivalents to preserve referential integrity and retain business logic.

Delphix automatically discovers sensitive data by searching both column names and the data itself. Customers benefit from pre-configured regulation and application-specific discovery, eliminating manual efforts or homegrown scripts.

An IDC survey of Delphix customers found the speed and accuracy of automated masking reduces business risk by over 75%\*. That's why companies around the world use Delphix to maintain compliance with regulations like HIPAA, GDPR, CCPA, and more. Read about our many satisfied customers at <http://www.delphix.com/customers>.

\*IDC research on Delphix customers, 2020

## Integrated Development and Testing Environments

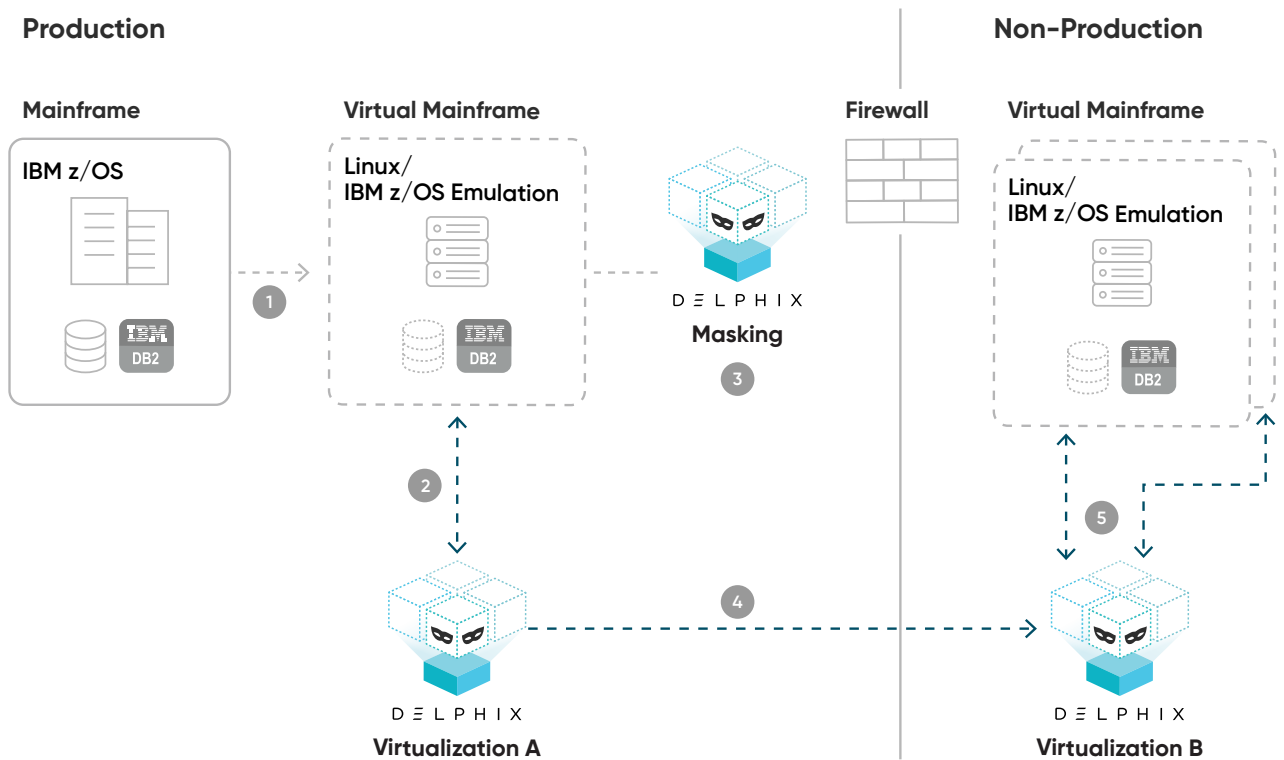
DevOps teams are continually driving innovation across a highly interconnected web of capabilities and services that leverage mainframe technology on the backend. Today's mobile and cloud-based applications, for example, often rely on big iron processing power to supply speed and scale for high volume transactions.

Creating integrated test environments that represent production installations can be challenging for complex business workflows. Reliably testing transactions that traverse an enterprise

application stack require sophisticated systems integration testing before deploying new code into production.

Delphix synchronizes mainframe data with other data sources to provision into SIT or UAT environments. The VDBs are synced to the same point in time so development and test teams can time travel mainframe and distributed application data in unison. This coordination is also reflected in masking rules, where referential integrity is preserved across these diverse datasets to ensure test cases are thoroughly validated while remaining secure.

### How It Works: Delphix API-driven Automation for Mainframe



1. Source data on the physical mainframe is migrated to virtualized mainframe on x86 hardware
2. Delphix ingests source datasets using an NFS-mounted filesystem on the virtual mainframe
3. Sensitive data is discovered and masked prior to distribution
4. Secure virtual datasets are replicated across the firewall for non-production use
5. Delphix automates provisioning of masked datasets into test environments

# Agile, Secure Test Data Management for Mainframe

Delphix is the industry leading data company for DevOps.

Data is critical for testing application releases, modernization, cloud adoption, and AI/ML programs. We provide an automated DevOps data platform for all enterprise applications. Delphix masks data for privacy compliance, secures data from ransomware, and delivers efficient, virtualized data for CI/CD.

Our platform includes essential DevOps APIs for data provisioning, refresh, rewind, integration, and version control. Leading companies, including UKG, Choice Hotels, J.B. Hunt, and Fannie Mae, use Delphix to accelerate digital transformation. For more information, visit [www.delphix.com](http://www.delphix.com) or follow us on [LinkedIn](#), [Twitter](#), and [Facebook](#).

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