



# Accelerate DevOps with Test Data Automation

How 5 Businesses Unlocked Test Data  
to Solve Key DevOps Challenges

# Content

---

|    |  |   |
|----|--|---|
| I. | Key Challenge #1: Accelerating Data Delivery | 4 |
|----|--|---|

---

|     |   |   |
|-----|---|---|
| II. | Presbyterian Healthcare Improves Time-to-Market for App-driven Insurance Products | 6 |
|-----|---|---|

---

|      |   |   |
|------|---|---|
| III. | Key Challenge #2: Protecting Sensitive Data Without Sacrificing Development Speed | 8 |
|------|---|---|

---

|     |  |    |
|-----|--|----|
| IV. | Protecting Sensitive Data Without Sacrificing Development Speed   ANZ Bank | 10 |
|-----|--|----|

---

|    |  |    |
|----|--|----|
| V. | Key Challenge #3: Integrating and Automating Data Delivery within DevOps Workflows | 12 |
|----|--|----|

---

|     |   |    |
|-----|---|----|
| VI. | Integrating and Automating Data Delivery within DevOps Workflows   Large Health Plan Provider | 14 |
|-----|---|----|

---

|      |   |    |
|------|---|----|
| VII. | Key Challenge #4: Managing Data Across a Heterogeneous IT Landscape | 16 |
|------|---|----|

---

|       |   |    |
|-------|---|----|
| VIII. | FinTech Leader Automates Microservices Testing in AWS | 18 |
|-------|---|----|

---

|     |  |    |
|-----|--|----|
| IX. | Key Challenge #5: Improving Test Data Quality to Eliminate Defects | 20 |
|-----|--|----|

---

|    |  |    |
|----|--|----|
| X. | Key Challenge #6: Providing Developers with API Access and Control | 22 |
|----|--|----|

---

|     |   |    |
|-----|---|----|
| XI. | Gain Capital Shortens Development Cycles by 75% | 24 |
|-----|---|----|

## Industry leaders have embraced DevOps as a guiding philosophy for ensuring a fast flow of digital experiences for the business.

They've constructed toolchains that automate everything from continuous integration to configuration management, with teams provisioning infrastructure and code in just minutes. This level of speed and automation has propagated to every other key part of the software development lifecycle—except for data.

This makes mastering data automation—to enable rapid and secure data provisioning—the key to realizing the promise of DevOps. DevOps Test Data Management (TDM) enables API-centric data automation. The ability to automate delivery of complete application environments, including compliant data, fills a key capability gap for DevOps teams and has a transformative effect on software delivery.

In the following pages, you'll learn how enterprises are adopting DevOps TDM to achieve their goals for quality, security, and speed.

## Key Challenge #1

# Accelerating Data Delivery

## DevOps Challenge

Too often, data provisioning represents a bottleneck in businesses' DevOps pipelines.

Provisioning test data—particularly a full and faithful copy of the production database underlying an application—is a slow and manual task that can take days if not weeks or months.

DevOps teams are constrained by inefficient processes for extracting, copying, and moving data from production systems to dev/test environments, a workflow that may take place within the context of a request-fulfill model coordinated through IT service tickets.

## DevOps TDM Solution Checklist

DevOps TDM offers teams an approach for delivering data to target environments at a pace that matches or exceeds teams' ability to deliver infrastructure, software builds, or other key SDLC elements:

- » Non-disruptive ingestion of data from production systems
- » Immutable data time machine for capturing a full data record and easy data versioning
- » Fast provisioning of complete, production-like copies of data through a consistent workflow
- » API-centric approach for integrating data delivery into DevOps processes
- » Automated data delivery models to eliminate manual tasks initiated through IT service tickets

Too often, data provisioning represents a bottleneck in DevOps pipelines.



# Presbyterian Healthcare Improves Time-to-Market for App-Driven Insurance Products

 **PRESBYTERIAN**

**Industry**  
Healthcare

**Products & Services**  
Hospitals, medical  
groups, healthcare plans

**Headquarters**  
Albuquerque, NM, USA

**Revenue**  
~3B

**Employees**  
~12,000

**Key Applications**  
TriZetto Facets



## Challenge

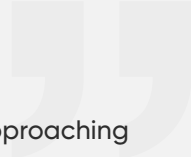
Presbyterian Healthcare Services is a private, not-for-profit healthcare system with 8 hospitals, a medical group, and a health plan. To compete against entrenched competitors, Presbyterian needed to grow by quickly bringing application-driven insurance products to market.

Application releases were slowed by the time required to provision QA environments. Test environment buildout consumed 94% of each testing cycle vs. 6% for actual testing. Rapidly increasing storage requirements drove ballooning costs: dev/test environments consumed 35 TB across 23 environments with 33% annual growth every year.

## Solution

Delphix allowed Presbyterian to deliver business-critical insurance offerings on time, while also reducing IT costs.

Fast data delivery enabled development and testing teams to release supporting applications within the three month timeline required by new insurance products. Environment build time was reduced from ten hours to ten minutes. Presbyterian was able to consolidate its data footprint by 80% while also limiting annual growth.



The relationship between IT and the customer is approaching a symbiotic relationship rather than a collaboration. I've seen how much [Delphix] has enabled us to help the business.

Gina Pokluda, Manager of Service Improvement and Innovation, Presbyterian

## Key Challenge #2

# Protecting Sensitive Data Without Sacrificing Development Speed

## DevOps Challenge

Dueling priorities of fast innovation vs. privacy meet head on in modern DevOps shops. Today's software development pipelines demand a fast flow of data into non-production environments that represent as much as 90% of an organizations' sensitive data. However, slow and often manual processes for finding and protecting this data can impede development workflows.

## DevOps TDM Solution Checklist

A DevOps TDM solution must meet requirements for both development speed and data privacy compliance:

- » Automated identification of information subject to privacy laws such as GDPR, CCPA, and HIPAA
- » Data masking to transform sensitive values while preserving the realism and referential integrity of the data
- » Integration of masking and continuous data delivery for fast, automated provisioning of compliant data
- » Centralized management to control access to data environments across all phases of the SDLC



Today's software development pipelines demand a fast flow of compliant data.



# ANZ Bank Provides Fast, Secure Access to Compliant Data for Developers

Integrated data masking and continuous data delivery accelerates software releases and improves data compliance.



**Industry**  
Financial services

**Headquarters**  
Melbourne, Australia

**Revenue**  
A\$21B

**Key Applications**  
Online payments  
platform

## Challenge

ANZ Bank was in need of a solution that would drastically reduce process overhead and wait times for developers to access up-to-date, secure copies of production data. Existing approval and provisioning processes meant it could take weeks or even months for requested data to land in developers' hands, potentially impacting delivery timelines and ANZ's competitiveness. In the words of solution architect Alex Braunegg, "What does that mean for your project and timeline when every time you want to re-run your test you have to wait for data to come back from production?"

## Solution

After evaluating three different solutions, ANZ Bank chose Delphix. With Delphix, developers are given complete access and control to provision data in a non-production environment in minutes. If a developer needs to test code changes against current production data, they can refresh in minutes rather than wait weeks as required before.

In addition, Delphix is enabling ANZ to better comply with its regulatory obligations. "We're able to say production data will never ever leave production; only a masked golden copy by secure channels will," according to Braunegg. "We can accurately identify who has access to what data and when for any audit items that come up. Additionally we can set expiry times on that data. So if a particular project requires that data for three months, and our regulatory requirement is it must be deleted after three months—bang, gone."

We're able to say production data will never ever leave production; only a masked golden copy by secure channels will.

Alex Braunegg, Solution Architect, ANZ

## Key Challenge #3

# Integrating and Automating Data Delivery within DevOps Workflows

## DevOps Challenge

Operations teams might be able to provision, configure, and deploy a new application environment in three minutes, but the data might not be there for three weeks. DevOps teams must deliver data at the same pace and with the same automation as virtual machines are configured or as cloud infrastructure is made available. Moreover, this capability needs to be integrated via API with the tooling and workflows already used in modern DevOps pipelines.

## DevOps TDM Solution Checklist

To prevent data from becoming a bottleneck in key workflows, DevOps TDM capabilities must be integrated into the larger DevOps toolchain:

- » Fully-automated solution for centrally provisioning and refreshing data from multiple, heterogeneous sources into dev/test environments
- » Pre-built integrations with DevOps tools including infrastructure provisioning, continuous software integration and deployment, configuration management, and automated testing solutions
- » Open platform with robust API layer to develop new integrations

Data environment provisioning capabilities must be integrated into the larger DevOps toolchain.



# Data Automation Paves the Way to CI/CD

Test data automation enables faster development of a member and provider web portal.

**Company**

Large health plan provider

**Headquarters**

San Francisco, CA, USA

**Revenue**

~13B

**Employees**

6,000

**Key Applications**

Web portal for members and providers

## Challenge

In order to deliver a faster, better experience to members and providers, this healthcare company's goal was to improve the throughput of their software delivery pipeline.

However, they lacked agility and automation in provisioning new environments, which was a critical blocker in their planned DevOps initiative.

- » As a health insurer for over 3.5 million members and 65,000 physicians, this company has many large databases. Due to the number of customer records, it took over three days to create a development copy of their web portal for members and providers, which limited their ability to quickly release new code.
- » Slow restore times also affects their ability to process claims data. For instance, analysts often run multiple tests for a set of claims that alter the underlying dataset, making the next test run inconsistent with the previous, which ultimately slowed the process of resolving claims errors.
- » After each release, development environments were updated with a new production dataset. When errors were discovered several weeks later, it was often difficult to reproduce those errors without the appropriate test dataset.

## Solution

In order to support the company's goal to rapidly deploy changes while ensuring that the same process works in production, they selected Delphix to automate the provisioning of test data in their software delivery pipeline.

- » With Delphix, developers can deploy new database copies in minutes. In addition, Delphix APIs seamlessly integrate with existing automation tools like Jenkins for continuous integration and delivery.
- » Delphix enables data to be reset to a consistent baseline between tests, improving the speed at which claims issues can be reconciled.
- » The company now retains a version-controlled repository of database builds that allow developers to access archived test datasets in Delphix and quickly retrieve them as needed.

As a result, IT can deliver higher quality services to members and providers through their online web portal, which has led to higher customer satisfaction.

## Key Challenge #4

# Managing Data Across a Heterogeneous IT Landscape

## DevOps Challenge

In complex enterprises, application data sprawls across many systems and siloes. DevOps practices often need this data for development purposes, requiring data management solutions to support a wide range of technologies—from legacy databases to a new wave of cloud-based data stores.

## DevOps TDM Solution Checklist

DevOps drives demands for a platform-based, extensible approach to provisioning data that can support a broad range of repositories and environments:

- » Robust support to virtualize and mask workhorse transactional databases that underlie core business applications
- » Integration with all database types including NoSQL, mainframe, and PaaS solutions
- » Deployment flexibility to work with sources across on-premises, cloud, or hybrid environments
- » Extensible layer for building connections with emerging data sources



In complex enterprises, TDM must harness application data that sprawls across many systems and siloes.



# FinTech Leader Automates Microservices Testing in AWS

Delivers data to CI/CD pipeline from multiple, heterogeneous data sources.

**Company**

Major financial  
technology firm

**Headquarters**

Washington, DC, USA

**Key Applications**

Mortgage securitization  
platform



## Challenge

A key goal of this firm is to bring speed and automation to the development of a mortgage securitization platform that forms the heart of this company's business. Their solution is built entirely on environments in AWS, based on a microservices architecture that decomposes their platform into lightweight components to help teams work autonomously and allow for CI/CD patterns. However, provisioning test data across RDBMS and NoSQL databases was an area that resisted existing approaches to automation and, ultimately, delayed the testing of their microservices.

## Solution

The firm evolved both technology and process to address this challenge. First, they developed a standardized approach for staging "gold copy" environments housing high-quality data from Oracle, SQL Server, and Neo4j databases that would serve as the source for testing activities.

Next, they leveraged Delphix DevOps TDM to quickly and automatically deliver gold copy data to dev/test environments in AWS. This was key to unlocking speed. Continuous Integration teams were able to build greater automation into their build and test workflows: New code changes triggered the testing of builds against data that could be automatically provisioned or restored to a baseline state to drive more consistency and productivity.

Many organizations operate in an environment where teams have come to expect infrastructure and applications to be delivered automatically within minutes. This firm created an innovative approach to bring similar capabilities to test data, changing how their teams work and allowing them to evolve their core platform at maximum speed.

## Key Challenge #5

# Improving Test Data Quality to Eliminate Defects

## DevOps Challenge

Difficulty provisioning test data often leads teams to resort to workarounds involving the use of subsetting or synthetic data, approaches that can fail to satisfy the need for tests to occur in a production-like setting. In addition, dev/test teams are sometimes forced to work with stale data environments that have not been refreshed in months or even years, leading to data-related defects.

## DevOps TDM Solution Checklist

Teams need the ability to provision the right data to the right target environments at the right time, and then continually refresh those environments to maintain a production-like setting for testing:

- » Automated provisioning of complete, production-like copies of data
- » Data virtualization to deliver new data copies using a fraction of the time and storage space compared to traditional delivery approaches
- » An immutable data time-machine to refresh data to any point in time, ensuring dev/test environments accurately reflect the state of production

Difficulty provisioning test data often leads teams to resort to workarounds.



## Key Challenge #6

# Providing Developers with API Data Access and Control

## DevOps Challenge

Complex processes for provisioning, restoring, or refreshing data environments require handoffs across individuals and teams that introduce delays and coordination challenges. DevOps teams can push critical development activities “to the left” by empowering developers and testers with the ability to access and control data via API.

## DevOps TDM Solution Checklist

DevOps teams work faster and more efficiently when developers access data environments with the ability to manipulate and share data without requiring administrative intervention:

- » Immediate access to data environments containing multiple copies of data
- » API controls to automatically refresh, restore, bookmark, rewind, and branch data copies
- » Easy sharing of data copies with other developers or testers
- » Data controls exposed to developers via API

Complex processes for provisioning, restoring, or refreshing data environments require handoffs across individuals and teams that introduce delays and coordination challenges.



# Gain Capital Shortens Development Cycles by 75%

Fast data delivery and self-service dramatically improve developer productivity.

 **GAIN** | CAPITAL

**Industry**  
Financial services

**Products & Services**  
Derivatives trading

**Headquarters**  
London, UK

**Key Applications**  
Online payments  
platform



## Challenge

The Gain Capital development teams needed to get software from development into production as efficiently as possible via continuous integration, automated testing, and fast environment spin-up. However, one factor was holding things back—test data.

Application teams worked on up to eight projects simultaneously, but delivering data environments for a single project took up to four hours. Multiplied over eight projects with regular environment refreshes, it was clear that data had become a key development bottleneck.

## Solution

Gain Capital turned to Delphix for a solution, using the Delphix DevOps Data Platform to virtualize and deliver data for applications based on SQL Server. The project commenced with a three month proof of concept, which demonstrated immediate results. Gain Capital then deployed Delphix across their entire IT organization with the full implementation completed in only one month.

Gain Capital realized benefits in the agility of their IT operations teams that, ultimately, translated into faster application development and greater value to the business:

- » The time taken to create database copies was reduced from four hours to just three minutes.
- » Over thirty developers now access data via a self-service model, without requiring involvement from database or storage administrators.
- » Project times are dramatically shorter; in one case, a complex application archiving process was rolled out in six weeks rather than the planned period of six months.
- » Faster data delivery increased environment utilization, allowing Gain Capital to reduce the number of QA environments required and lower infrastructure costs.

Overall, Gain Capital estimates that Delphix has reduced development cycle times by 75% and increased IT's output to the business by 20%.

Delphix has increased our output to the business by 20%, leaving more time for innovation, which in turn drives business growth.

Anup Anand, Database Director, Gain Capital

# Accelerate DevOps with Test Data Automation



Delphix is the industry leader for DevOps test data management.

Businesses need to transform application delivery but struggle to balance speed with data security and compliance. Our DevOps Data Platform automates data security, while rapidly deploying test data to accelerate application releases. With Delphix, customers modernize applications, adopt multicloud, achieve CI/CD, and recover from downtime events such as ransomware up to 2x faster.

Leading companies, including Choice Hotels, Banco Carrefour, and Fannie Mae, use Delphix to accelerate digital transformation and enable zero trust data management. Visit us at [www.delphix.com](http://www.delphix.com). Follow us on [LinkedIn](#), [Twitter](#), and [Facebook](#).

©2022 Delphix

372