REVOLUTIONIZING ENTERPRISE-CLASS SYNTHETIC TEST DATA

Addressing Critical Challenges in Enterprise Test Data Management

As an organizational leader on the frontlines of software testing, you're probably all too familiar with the challenges of managing test data in an enterprise environment. You're juggling the demands of stringent security requirements, accelerated development cycles, and the need for high-quality, diverse test data across a complex landscape of applications.

It's a tall order, and traditional approaches to test data management are falling short.

Let's talk about the realities you're facing and how GenRocket's Test Data Automation (TDA) platform is changing the game for enterprise-level organizations like yours.

The Security Imperative: A Mandate for Change

In today's digital landscape, data breaches are an ever-present threat, making the use of production data for testing increasingly risky and often prohibited. As a leader in software development and testing, you're likely facing a critical mandate: **Stop using production data in your testing environments.**

The presence of sensitive data in lower environments has become unacceptable, creating a significant challenge for maintaining robust testing practices while ensuring data security. This isn't just a best practice anymore; it's becoming a non-negotiable requirement for many organizations.

But security is just the tip of the iceberg. Let's dive deeper into the full spectrum of challenges you may be facing and how GenRocket's TDA platform provides a comprehensive solution.

The Enterprise Testing Dilemma

ENTERPRISE TESTING CHALLENGES

Speed & Agility — Delivering test data on demand

Security & Compliance — Protecting sensitive data

Complex Application Landscape — Managing hundreds of interconnected systems

Distributed Teams — Coordinating across time zones

Continuous Deployment — Keeping pace with rapid releases

Data Quality & Variety — Ensuring comprehensive test coverage

You're not just dealing with a handful of applications or a single technology stack. In your world, it's hundreds, maybe even thousands of interconnected applications. From legacy mainframes that have been running for decades to cutting-edge cloud infrastructures, your testing needs span a broad technological spectrum. And let's not forget about commercial off-the-shelf (COTS) systems integrated into your environment. Each one adds another layer of complexity to your testing process.

Your development teams are likely spread across the globe, operating in different time zones, and working on various parts of your systems simultaneously. Coordinating test data across these teams is a complex logistical challenge. You need a solution that can keep up with this distributed, fast-paced environment.

Then there's the security aspect. In today's world of frequent data breaches and stringent regulations like GDPR, CCPA, and industry-specific mandates like HIPAA, using production data for testing is becoming increasingly risky and, in many cases, outright prohibited. Your CISO is probably (and rightly) putting the pressure on you to find a more secure alternative.

And let's talk about the challenges of continuous deployment. Your organization is pushing for faster release cycles, aiming for *continuous integration and deployment* (CI/CD). But how do you provide comprehensive test data at that pace without compromising on quality or security?

These are real, pressing challenges. You need a solution that doesn't just address one or two of these issues but tackles them *all* head-on. That's where GenRocket comes in.
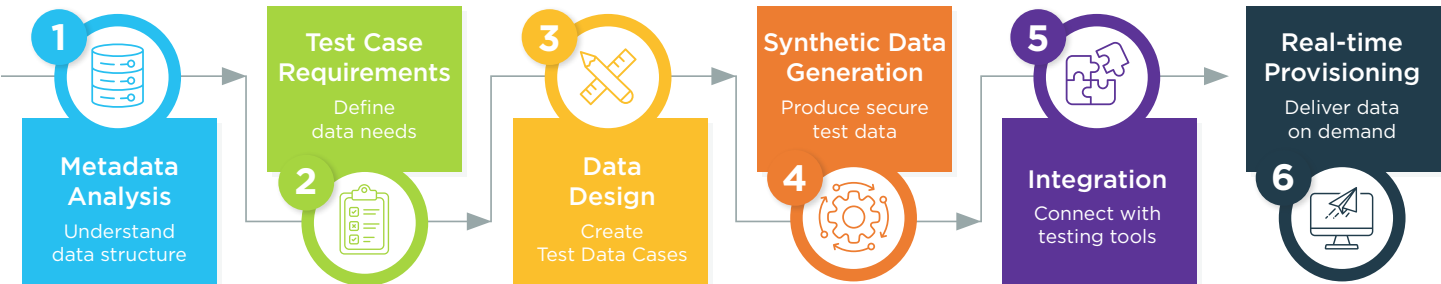
GenRocket's Approach — A Paradigm Shift in Test Data Management

At GenRocket, we've reimagined Test Data Management from the ground up. Our Test Data Automation (TDA) platform isn't just another tool in your testing arsenal; it's a comprehensive solution designed to address the unique challenges faced by enterprise-level organizations like yours.

	Traditional TDM	Synthetic TDM	GenRocket TDA
Data Source	Production data	Production Data	Design-driven synthetic data
Security Risk	High	Medium	None
Test Coverage	Limited by available data	~50% of test objectives	Up to 100% of test objectives
Speed of Data Availability	Days to weeks	Hours to days	Real-time, on-demand
Flexibility	Low	Medium	High
Compliance	Challenging	Manageable	Assured

Security First With Design-Driven Test Data

Let's start with what's probably keeping you up at night: *data security*. We understand that you're under pressure to eliminate the use of production data in testing environments. Traditional approaches to test data often involve copying production data and then trying to mask or anonymize it. But here's the problem: during this process, that sensitive data is exposed, creating a window of vulnerability. Plus, the data discovery and masking process often misses some sensitive data values meaning there is *still* risk after the masking process has been completed.

1 **Metadata Analysis** Understand data structure

2 **Test Case Requirements** Define data needs

3 **Data Design** Create Test Data Cases

4 **Synthetic Data Generation** Produce secure test data

5 **Integration** Connect with testing tools

6 **Real-time Provisioning** Deliver data on demand

What sets GenRocket apart is its innovative approach to test data management through *Design-Driven Data*. This methodology allows organizations to create test data from the ground up, designed and generated based on specific test case requirements.

Unlike traditional solutions that rely on anonymizing or masking production data, GenRocket captures test data designs as executable *Test Data Cases*, seamlessly integrated into development tools and testing frameworks. This enables enterprises to create precise, executable **synthetic** data sets tailored for a variety of test environments — ensuring high accuracy while maintaining security and efficiency.

GenRocket's approach directly addresses the mandate to transition from the use of production data. Our platform is built on a metadata-driven architecture.
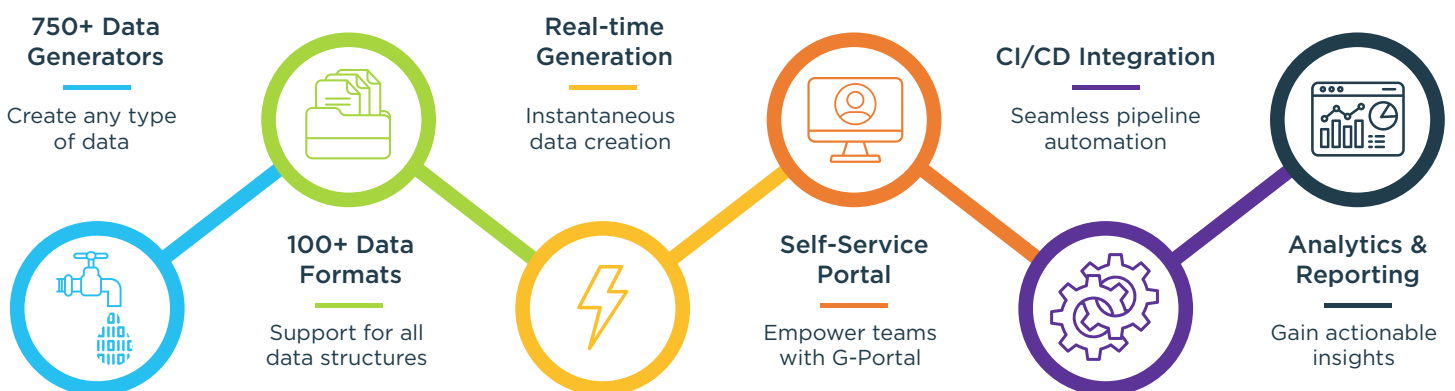
What does this mean for you?

Simply put, we never look at your production data. Instead, we use the *metadata* — the **structure** and **relationships** of your data — to generate synthetic test data from scratch. This synthetic data looks and behaves like your production data but contains no actual sensitive information.

For you and your CISO, this means:

- Zero risk of exposing sensitive customer data during testing
- Full compliance with data protection regulations without the headache and risks of complex masking processes
- The ability to generate test data for new systems or scenarios where production data doesn't even exist yet

Quality Data, On Demand

GenRocket TDA Platform

750+ Data Generators
Create any type of data

100+ Data Formats
Support for all data structures

Real-time Generation
Instantaneous data creation

Self-Service Portal
Empower teams with G-Portal

CI/CD Integration
Seamless pipeline automation

Analytics & Reporting
Gain actionable insights

Let's talk about *data quality*. We know you've heard promises before about synthetic data, but often these solutions fall short when it comes to the complexity and specific needs of your testing scenarios. Moreover, they may not fully eliminate the need for sensitive data in lower environments.

Most synthetic data tools today fall into a category we refer to as **Synthetic TDM**. These tools use data profiling techniques to statistically simulate production data, solving the security issue but often falling short in terms of data quality.

Synthetic TDM solutions are useful for training machine learning models where statistical accuracy is critical. However, they don't offer the ability to design test data for specific test case objectives.

Synthetic TDM data may only provide 50% coverage for your test case objectives. GenRocket, on the other hand, is purpose-built to generate high-quality, design-driven synthetic data that aligns *precisely* with all your test case needs. This improves test case coverage close to 100%, without the significant data gaps of Synthetic TDM solutions.

With GenRocket you can design any data pattern, all permutations & combinations of data, and generate both positive and negative data into your test case scenario. Need to test a specific edge case that rarely occurs in production? Want to simulate high-volume data scenarios that your current systems have never encountered? Our platform can do all this without ever touching sensitive production data.

Our platform offers:

- **Over 750 intelligent data generators** that can create virtually any type of data you need
- **Support for more than 100 data formats**, to simulate any form of structured or unstructured data, ensuring we can fit into your existing ecosystems seamlessly
- The ability to **maintain referential integrity across complex, interconnected systems** — a critical feature for those end-to-end tests that span multiple applications

What this means for your testing teams is the ability to create comprehensive test scenarios that cover all bases — from common use cases to those rare, hard-to-replicate scenarios that often slip through the cracks with traditional testing methods.

Speed & Agility

In the world of CI/CD, waiting days or weeks for test data is simply not an option. More importantly, you can't afford to let data security concerns slow down your development process. GenRocket's platform generates data in real-time, on-demand. This isn't just fast; it's *instantaneous* and *secure*.

Imagine your developers and testers having access to the exact test data they need, when they need it, without having to submit data requests or wait for approvals — and without any risk of exposing sensitive information. That's the reality with GenRocket.

Our platform integrates seamlessly into your existing testing tools and frameworks as part of a CI/CD pipeline. It doesn't matter which tool or framework you are using, GenRocket can be called by the test case, generate data on demand, as part of a pipeline. Regardless if you are using Jenkins, Azure DevOps, GitHub, or any other popular CI/CD tool, GenRocket can plug right in, providing fresh, relevant test data at every stage of your development process.

This level of speed and on demand data integration means:

- No more delays in your testing cycles due to data availability issues
- No more data reservation issues
- No more data refresh issues
- The ability to run comprehensive tests on every code commit, catching issues earlier in the development process
- Support for true continuous testing practices, aligning perfectly with your DevOps initiatives

Scalability & Flexibility

Enterprise environments are not static. Your testing needs today might be different from what they'll be six months from now. GenRocket's platform is designed with this reality in mind.

Our scalable deployment model means you can start small — perhaps with a handful of applications or teams — and then expand usage across your entire organization as you see the benefits. The platform can handle everything from unit testing needs to complex, multi-system end-to-end testing scenarios.

This scalability extends to the types of testing you can support, for example:

- **Unit & Integration** testing for your developers
- **Functional** testing with precisely controlled data scenarios
- **Non-Functional** testing (e.g. load & performance testing with high-volume data generation capabilities
- **Security** testing with data that mimics potential attack vectors without using actual sensitive information
- **Compatibility** testing across different systems and data formats

One Platform for Comprehensive Data Provisioning
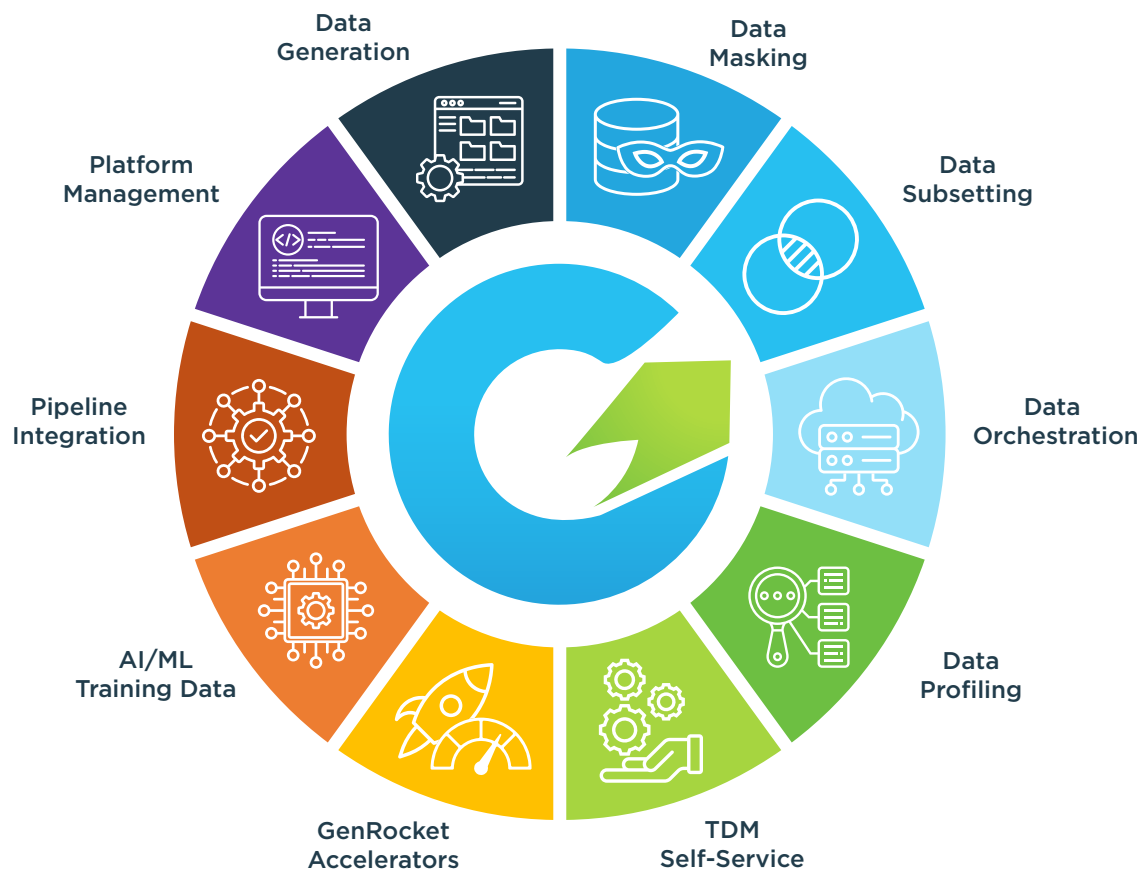
GenRocket is more than just a tool for synthetic test data; it's a complete platform capable of provisioning any type of test data, whether it's synthetically masked production data, synthetically masked files, synthetically generated data, or a combination.

By providing a single platform for all test data needs, GenRocket allows enterprises to smoothly transition from only using production data to more use of synthetic data in a controlled, non-disruptive manner. This ensures that testers can continue working with the test data they are familiar with, while also leveraging the power of Design-Driven synthetic data to enhance test coverage wherever possible.

With GenRocket's unified data platform, organizations can achieve optimal data provisioning agility without sacrificing quality, control, or security.

Self-Service & Ease of Use

We understand that introducing a new platform across a large organization can be daunting. That's why we've designed GenRocket with ease of use in mind.

Our G-Portal provides a user-friendly interface where your teams can access predefined test data scenarios, modify them as needed, or create their own data scenarios in G-Questionnaire. This self-service approach democratizes access to quality test data, reducing bottlenecks and empowering your teams to work more efficiently.

For your more technical users, we offer a programmable API that allows dynamic data decisions to be made in real time and "electronic testers" can be designed to test at a level that is humanly not possible. This means GenRocket can adapt to *your* processes, not the other way around.

Insights & Control

In large enterprises, visibility and control over your testing processes are crucial, especially when it comes to ensuring data security and compliance. GenRocket provides comprehensive analytics and reporting capabilities, giving you insights into:

- **Test data usage patterns** across your organization
- **Efficiency gains** and **time saved** in data provisioning
- **Coverage metrics** to ensure your testing is as comprehensive as you need it to be

These insights allow you to continuously optimize your testing processes, identify areas for improvement, and demonstrate the ROI of your test data management strategy to stakeholders.

The GenRocket Difference: It's Not Just About the Technology

While our technology is industry-leading, what truly sets GenRocket apart is our understanding of the enterprise testing landscape. We're not just selling a product; we're providing a solution to the real-world challenges you face every day, including the critical need to eliminate production data from testing environments.

Our team has worked with financial institutions processing millions of transactions daily, healthcare providers processing tens of thousands of claims daily, and technology companies pushing the boundaries of what's possible. We understand that each industry and each organization has its unique needs and challenges.

That's why we offer:

- **Pre-built accelerators** for specific industries and common use cases
- **Comprehensive training** and support to ensure your teams can make the most of the platform
- **Ongoing partnerships** to continually align our solution with your evolving needs

Real Results in the Real World

We could talk about features and capabilities all day, but what really matters are results. Our enterprise clients have seen:

- 90% reduction in test data provisioning time, from weeks to minutes
- 75% decrease in production defects related to data issues
- 50% increase in test coverage across applications
- 30% reduction in overall testing cycle time
- 100% elimination of sensitive production data in testing environments, significantly reducing data security risks

These aren't just numbers; they represent real improvements in efficiency, quality, and speed-to-market. They represent fewer late nights for your teams, fewer emergency patches, and more confident releases.

	Traditional TDM	With GenRocket TDA
Test Data Provisioning	Days to Weeks	**Minutes** 90% reduction
Production Defects	Medium to High	**Low** 75% decrease
Test Coverage	Limited	**Comprehensive** 50% increase
Testing Cycle Time	Long	**Shortened** 30% reduction
Sensitive Data in Testing	Always a Risk	**Eliminated** 50% increase

Taking the Next Step

We understand that adopting a new approach to test data management is a significant decision. It impacts not just your testing processes but your entire development lifecycle. That's why we're here to partner with you every step of the way.

We invite you to see GenRocket in action in your own environment. Let us show you how we can address your specific challenges, integrate with your existing tools, and drive real, measurable improvements in your testing processes.

In a world where data is both your most valuable asset and your biggest potential liability, GenRocket offers a way forward. A way to test thoroughly, release confidently, and innovate freely, all while keeping your sensitive data secure.