DATA SHEET

IN-PLACE MASKING (IPM)

Enterprise-Grade In-Place Masking with a Clear Path to Design-Driven Synthetic Data

Executive Overview

Enterprises depend on database masking performed by Test Data Management (TDM) systems to protect sensitive production information when provisioning test and training data for software development and testing. GenRocket, the technology leader in synthetic test data generation, now offers database masking through new In-Place Masking (IPM) technology with an even higher standard of security, performance and data quality.

The Natural Evolution of Test Data Management

Database masking solutions from traditional TDM vendors come with a high level of complexity and cost. However, the real challenge lies in what comes next. These legacy platforms perpetuate a paradigm of production data dependency and non-integrated workflows. They are not architected for the future of test data management where secure synthetic data is provisioned on-demand and delivered seamlessly into fully automated test environments.

GenRocket's IPM solution delivers enterprise-class, high-performance in-place masking that aligns with current data provisioning processes — while uniquely providing a strategic path forward to design-driven synthetic data delivery.

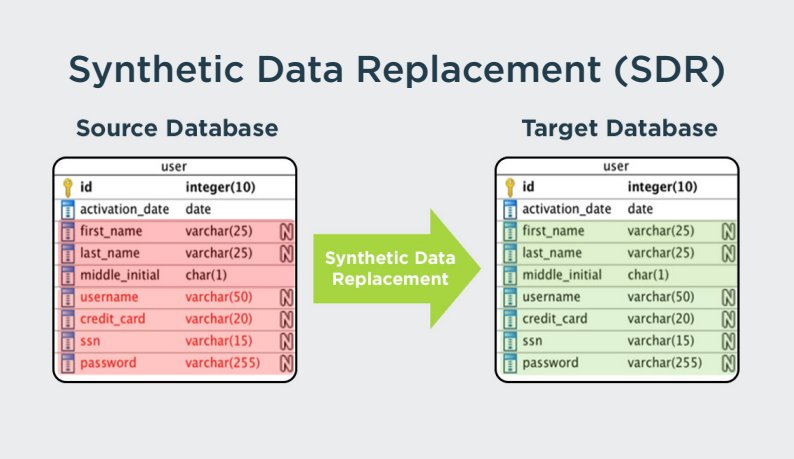
GenRocket IPM: Familiar Capability, Future-Ready Architecture

GenRocket IPM is intentionally designed as a drop-in replacement for traditional TDM in-place masking. It mirrors the capabilities enterprises expect, including sensitive data discovery, in-database masking, and preservation of referential integrity across large datasets. And IPM is the foundation of an extensive data masking capability that includes intelligent data subsetting and flexible file masking.

IPM allows organizations to replace all traditional masking solutions with a more secure and scalable approach in a platform that incorporates the industry's most advanced synthetic data technology.

Secure Masking Through Synthetic Data Replacement

GenRocket IPM uses Synthetic Data Replacement (SDR) to protect sensitive values. Rather than transforming or scrambling existing data, SDR replaces sensitive values entirely with synthetic data generated by GenRocket. This approach provides irreversible protection while preserving realistic data behavior, ensuring masked data remains usable for testing, validation, and downstream processing.



This is made possible by GenRocket's metadata-driven approach for synthetic data replacement. With GenRocket, the entire in place masking process can be performed without production data ever leaving a secure production environment. That's because GenRocket uses metadata to identify sensitive data values targeted for synthetic replacement.

Now when there is an executive mandate that sensitive production data cannot be copied to a lower environment, Quality Engineering can safely transfer a production database "masked" with 100% secure and compliant synthetic data BEFORE it is transferred.

And for companies that do not yet have this mandate in place yet, it's likely to be becoming soon. Increasingly organizations are looking to reduce if not eliminate the risk of security breaches and to ensure total compliance with global privacy laws.

Data Consistency and Referential Integrity by Design

GenRocket's In-Place Masking (IPM) is architected to preserve data consistency and referential integrity across complex enterprise data landscapes—including multi-table schemas, cross-database dependencies, and heterogeneous platforms. IPM ensures that related values—such as primary and foreign keys, shared identifiers, and duplicated sensitive attributes—are deterministically replaced with the same synthetic values wherever they appear. The result is a secure, production-like dataset that remains fully usable for testing, analytics, integration, and compliance.

Enterprise-Class Performance at Scale

Performance is a non-negotiable requirement for in-place masking at enterprise scale. GenRocket IPM is engineered to meet and exceed the performance expectations established by leading TDM platforms. IPM achieves this through multi-threaded parallel processing, dynamically generated database-native stored procedures, and a distributed client-server architecture that supports horizontal scaling across tables and databases.

Depending on masking complexity and configuration, GenRocket IPM consistently delivers throughput in the range of 2 to 5 million rows per minute—enabling large production-scale datasets to be masked efficiently without disrupting development or release schedules.

Validated Performance Benchmarks

The table below summarizes representative GenRocket IPM performance results across SQL Server and Oracle environments at 10 million and 100 million row volumes. Throughput is normalized as rows per minute to provide a consistent, executive-level view of performance.

Masking Performance Summary – 10M vs. 100M Rows

Platform	Execution Model	Rows	Masking Columns	Time Spent	Throughput (Rows / Minute)
SQL Server	Single Table	10M	5	2m 07s	4.72 M
		100M	5	23m 18s	4.29 M
	Multi-Table (Horizontal Scaling)	10M	5	3m 47s	2.64 M
		100M	5	1h 11m 34s	1.40 M
Oracle	Single Table	10M	5	3m 44s	2.68 M
		100M	5	32m 55s	3.04 M
	Multi-Table (Horizontal Scaling)	10M	5	1m 59s	5.04 M
		100M	5	23m 20s	4.29 M

These results demonstrate consistent throughput as data volumes scale. Performance remains predictable across platforms and execution models, validating GenRocket IPM as an enterprise-ready in-place masking solution.

Supported Databases and System Requirements

GenRocket's in-place masking supports Microsoft SQL Server and Oracle in its initial release, with PostgreSQL, MySQL, DB2 and Snowflake database solutions currently in development and test. The solution runs on Linux or MacOS, requires Java (Java 17+ for multi-table masking), and uses an SFTP server for metadata- driven mapping. Core platform components include GenRocket Runtime, G-Repository, G-Subset, and Data Column Profiling.

Compelling Economic Value

With GenRocket's in place masking solution, Quality Engineering organizations can realize significant economic savings over traditional methods. First and foremost, GenRocket does not charge based on the amount of data that is being masked, as is the case with many other vendors. For a fixed annual license fee, any amount of data can be masked and provisioned any number of times. For enterprise-scale requirements, this often represents a six-figure or seven-figure annual savings.

From In-Place Masking to Design-Driven Data

While GenRocket IPM delivers the in-place masking capabilities enterprises require today, its strategic value extends further. IPM serves as the entry point to GenRocket's broader Design-Driven Synthetic Data platform.

Organizations can adopt IPM as a direct replacement for existing masking tools and, over time, introduce synthetic, purpose-built data to support advanced testing, automation, and quality engineering—without disrupting established workflows.

By combining enterprise-class performance with a clear evolutionary path to design-driven synthetic data, GenRocket IPM enables organizations to protect sensitive data today and modernize their test data strategy for the future.

Security, Speed and Savings at Scale

With the addition of In Place Masking to GenRocket's synthetic data platform, organizations can have the best of all worlds. With its metadata driven architecture and synthetic data replacement strategy, GenRocket offers unparalleled security and data privacy. It's multi-threaded parallel processing approach delivers some of the highest performing masking operations available in any enterprise-class data masking platform. And with the opportunity to realize major cost savings over traditional solutions, GenRocket makes it extremely economical to solve today's data provisioning challenges while positioning for the future of synthetic data.

Finally, GenRocket's Navigator Services bring deep industry experience and technology know-how to guide the implementation and operation of its in-place masking and synthetic data capabilities. This makes GenRocket more than a leading technology company in test and training data. We are strategic partners with our customers in the delivery of the highest quality data that can be designed and deployed seamlessly in our customers automated release pipelines. The result is faster delivery, reduced risk, and complete confidence in the data that powers enterprise software and AI initiatives.