

# Self Service Synthetic Test Data

Test Data Automation for the Age of Agile

# Enterprise Launch – Channel Partners

## AGENDA

1. Welcome
2. GenRocket Company Update
3. Software Quality & Test Data Update
4. GenRocket Enterprise Launch
5. Live Demo
6. Q&A



## 2. Company Update

### Team Growth

**35 Team Members**

### Revenue Growth

**100%**

### License Retention Rate

**95.5%**

- 5 X 24 Hour Support
- 1,000+ Knowledge Base articles
- GenRocket University training
- Customer Success Managers

- 30+ Alliance & Technology Partners
- 500+ GenRocket Certified Engineers
- No cost GenRocket Proof of Concepts
- Deal Registration Process – from Website

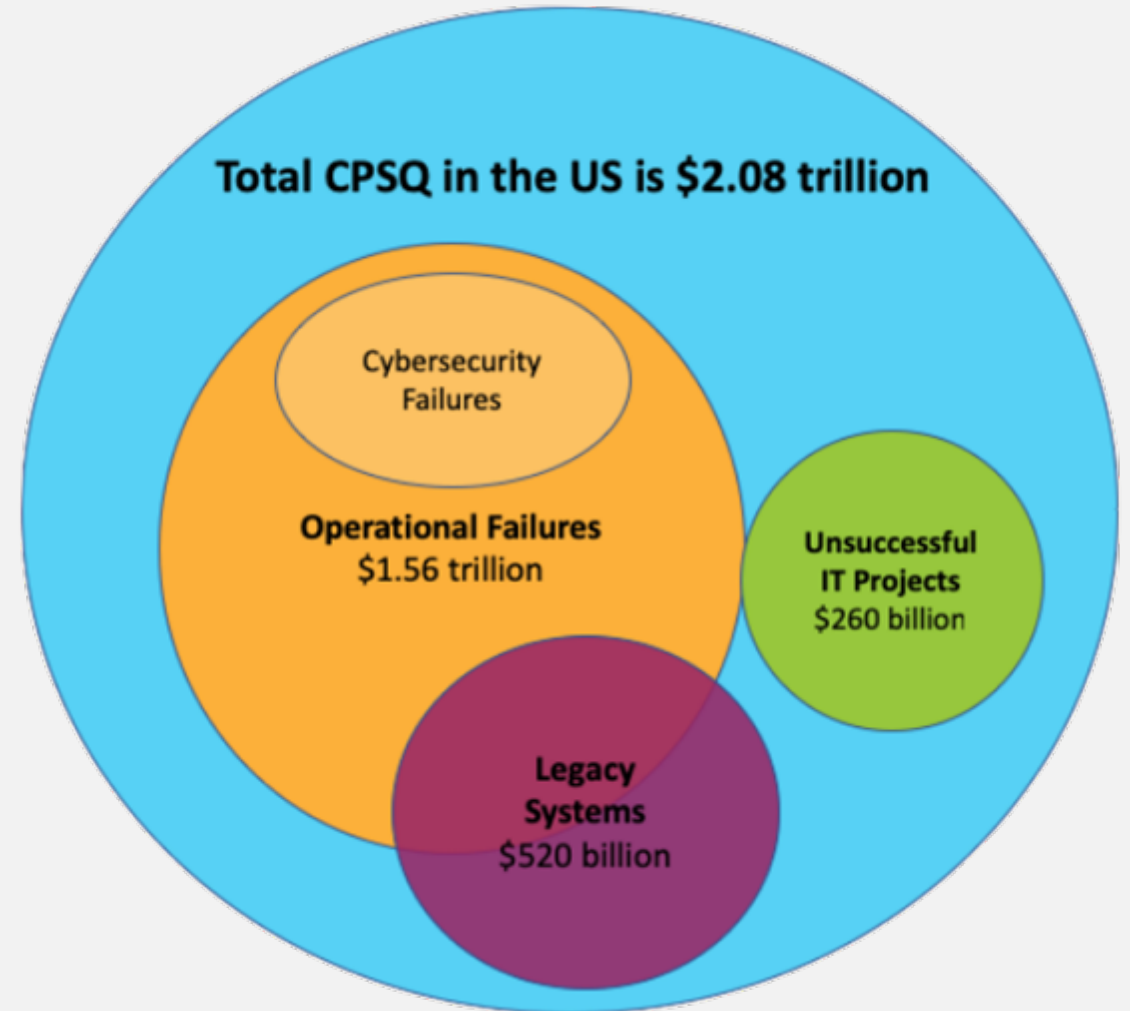


# 3. The Cost of Poor Software Quality

**Last year, \$2.08 trillion was lost in the U.S. because of poor software quality\***

- Software defects
- Fragile legacy systems
- Cybersecurity failures
- Failed IT projects

**Organizations are failing to fully test their code prior to production release.**



\*Consortium for Information & Software Quality (CISQ)

# To Maximize Software Quality ...

## Testing With the Right Test Data is Critical

**Data Variety** is needed to maximize test coverage

**Data Volume** is needed to ensure system performance

**Data Velocity** is needed to enable continuous delivery

# Traditional Test Data Provisioning

Use spread-sheets to manually generate new test data



Copy production data that we anonymize before testing

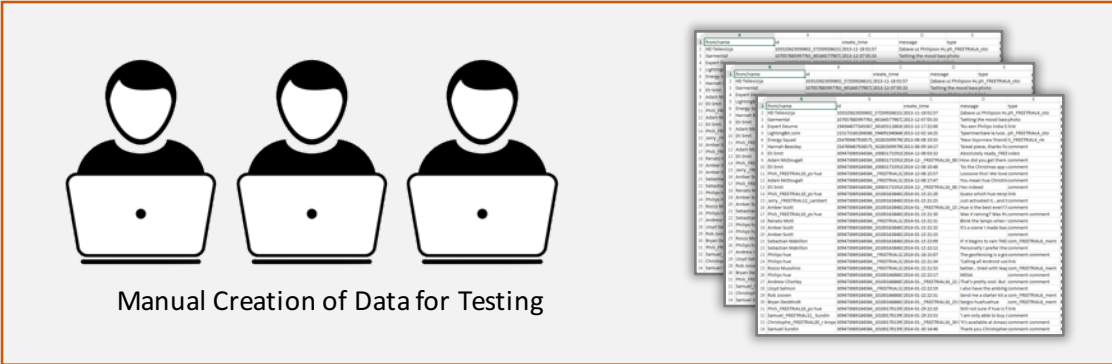


- Over 50% of QA professionals report challenges with test data
- Testers spend 30% to 60% of their time provisioning test data
- Most organizations have automated less than 20% of testing

\*World Quality Report 2019-2020

# Current Test Data Challenges

## Using Spreadsheet Data for Testing



### Challenges:

Labor Intensive

Limited Volume

2-Dimensional

## IMPACT on Agile Teams: *Reduced Coverage and Speed*



Need Combinations  
& Permutations



Need Data for  
Negative Testing



Need Faster  
Provisioning Time

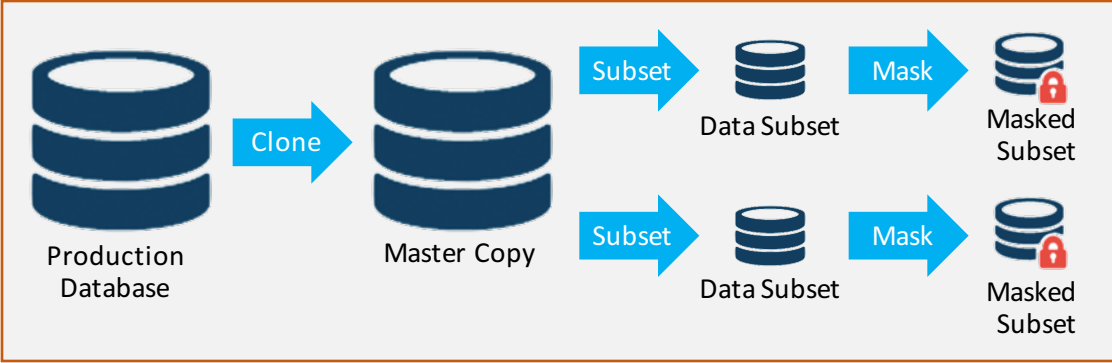


Need Dynamic  
Data for Testing  
Workflows



Need High  
Data Volume for  
Load Testing

## Using Production Data for Testing



### Challenges:

Days to Provision

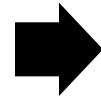
Limited Variety

Cost of Ownership

# The Emergence of Synthetic Test Data

## DESIGN ANY TEST DATA

- Positive
- Negative
- Unique
- Permutations
- Workflows
- Transactions
- Data Feeds
- X12 EDI
- Messages
- IoT Sensor
- Dynamic
- Salesforce



## GENERATE IT FOR ANY TEST

- Unit
- API
- Integration
- Functional
- System
- Security
- Smoke
- Load
- Performance
- Compatibility
- Acceptance
- Regression



# GenRocket Enterprise Class Synthetic Test Data

1. Data Generators
2. Data Formats (Receivers)
3. Distributed Self Service
4. Data Validity (blended production data values)
5. Scalability
6. Life Cycle Management
7. Designed for Agile & DevOps Integration



# 1. Data Generators

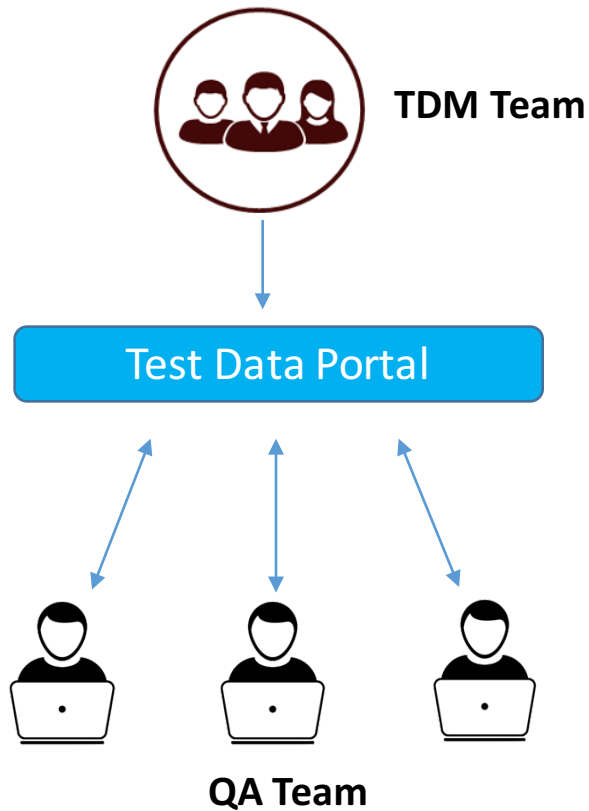
- 650+ Data Generators
- Country Generators for 39 countries
  - name, address, city, state, postal code, passport, national id
- Calendar & date
- Financial
- Business logic
- String manipulation
- Permutations
- Edge cases
- Etc.

## 2. Data Formats (Receivers)

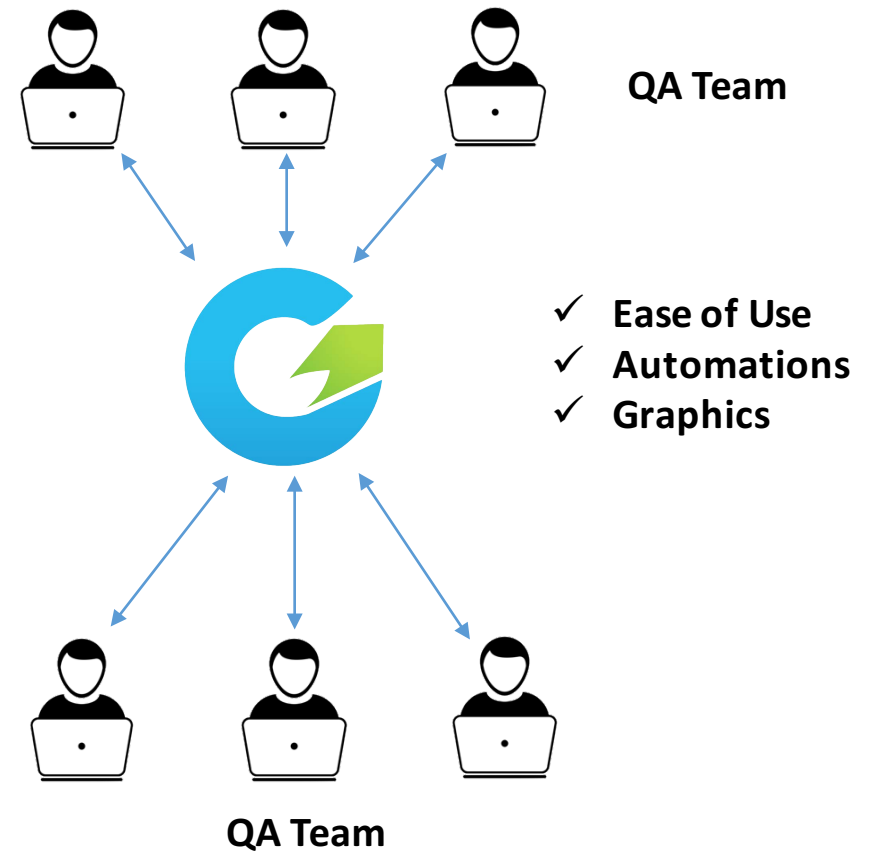
- 75+ Receivers
- Any SQL database
- Any NoSQL database
- XML, JSON (flat, nested)
- REST API, Socket API, SOAP
- COTS – Salesforce, SAP, Guidewire, Duckcreek...
- Kafka, SWIFT, ISO 20022
- Snowflake, Parquet, Avro (flat, nested), AWS S3
- X12 EDI 837, 835, 834..., HL7, FHIR
- Data Feeds
- Transactional Data

# 3. Distributed Self Service






## Centralized Self Service



## Distributed Self Service



### 3. Self Service Components

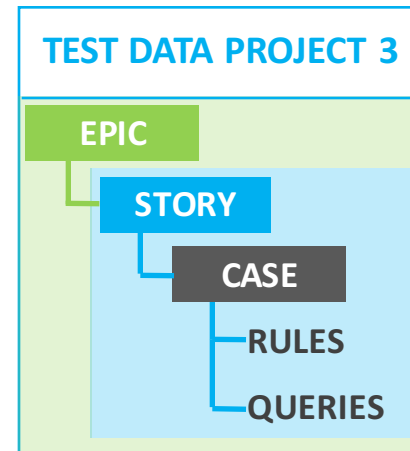
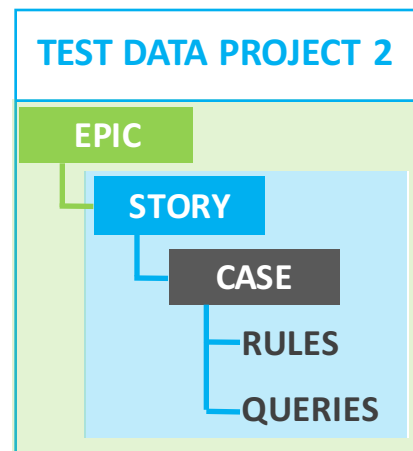
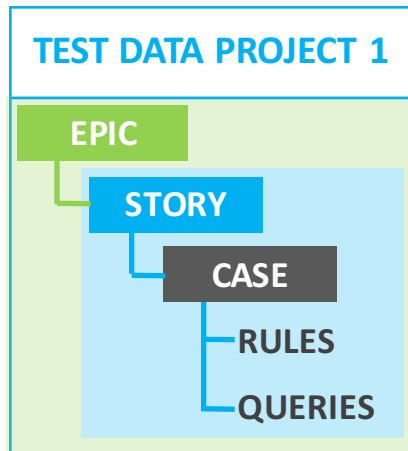
GenRocket Term	Think of it like...	Example
 Test Data Case	How you specify the exact test data needed for a test case	100 customers (unit), 5 Branches with 10 Accounts with 1,000 Customers (Integration)
 Test Data Rule	How to apply rules against your Test Data Case to only get the data you want	Platinum customer starting bank balance: \$10,000, Gold customer starting balance: \$5,000 - \$9,999
 Test Data Query	Ability to query specific production data values from a file or database	Query Platinum and Gold customer Account #'s to blend with synthetically generated data
 Test Data Stories	Stories combine a group of Test Data Cases	Combine Type Tables Test Data Cases with Account Table Test Data Cases
 Test Data Epics	Epics combine a group of Test Data Stories	Combine Integration Test #1 with Integration Test #2

## 4. Data Validity

- Real production data values (enumerated data) needed for test validity
  - Account #
  - Customer ID
  - ICD-10 code (healthcare)
- Query Generators (17)
  - Query from a database or file (csv)
- Blend synthetically generated data with real production data - in real time

# 5. Scalability

- High speed data for automated functional tests
  - ~100 milliseconds for most functional tests
  - 10,000 rows of data per second for most functional tests
- High volume data for big data requirements
  - Partition engine to generate millions to billions of rows in minutes
- Organize, manage, share & maintain thousands of test data cases



# 6. Life Cycle Management

- Management
  - Team Permissions
  - SSO (Single Sign On)
  - Maven Repository integration
  - G-Analytics – full reporting & analytics dashboard – users, projects, platform activity
- Data Model Changes (Add / Remove Database Tables, Columns)
  - G-Delta\*
    - Run G-Delta
    - Look for data model changes
    - Alert Admin to accept (or not) data model changes
  - G-Refactor
    - Automatically update the data model in GenRocket
    - Automatically update impacted Scenarios

\*G-Delta to be released April 2021



# 7. Designed for Agile and DevOps Integration

## An Agile Epic

As an agent, I wish to generate a quote, so I can add a new customer

Agile Stories

Create Agent

Create Customer

Create Quote

Make Payment

Create Policy

## The GenRocket Methodology

MODEL

DESIGN

DEPLOY

MANAGE

### Define Model

Test Data  
Project

Any Data  
Model

Referential  
Integrity

### Design Data

Any Data  
Variation

Blended  
Prod Data

Unlimited  
Volume

### Deploy Data

Any Output  
Format

Framework  
Integration

Automated  
Execution

### Manage Projects

Team  
Permissions

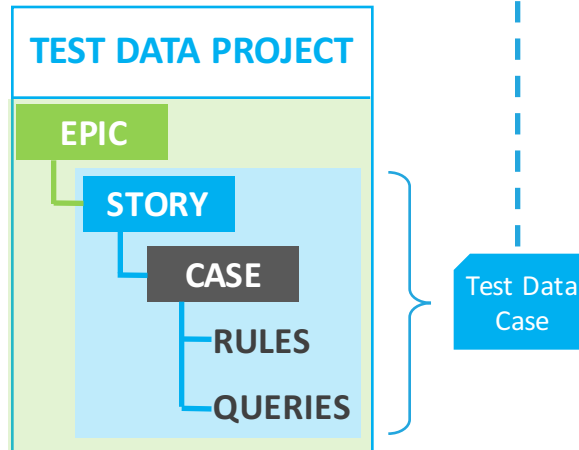
Lifecycle  
Management

Analytics  
& Reporting

# 7. Test Case <> Test Data Case

## Agile Sprint

Test Data is Designed to Meet the Needs of Each Test Case



## Test Data Projects Contain:

### Test Data *Cases*

- Configures data for various test categories

#### Test Data *Rules*

- Applies business rules for generating data

#### Test Data *Queries*

- Retrieves production data values

### Test Data *Stories*

- Defines test data for an *Agile Story*

### Test Data *Epics*

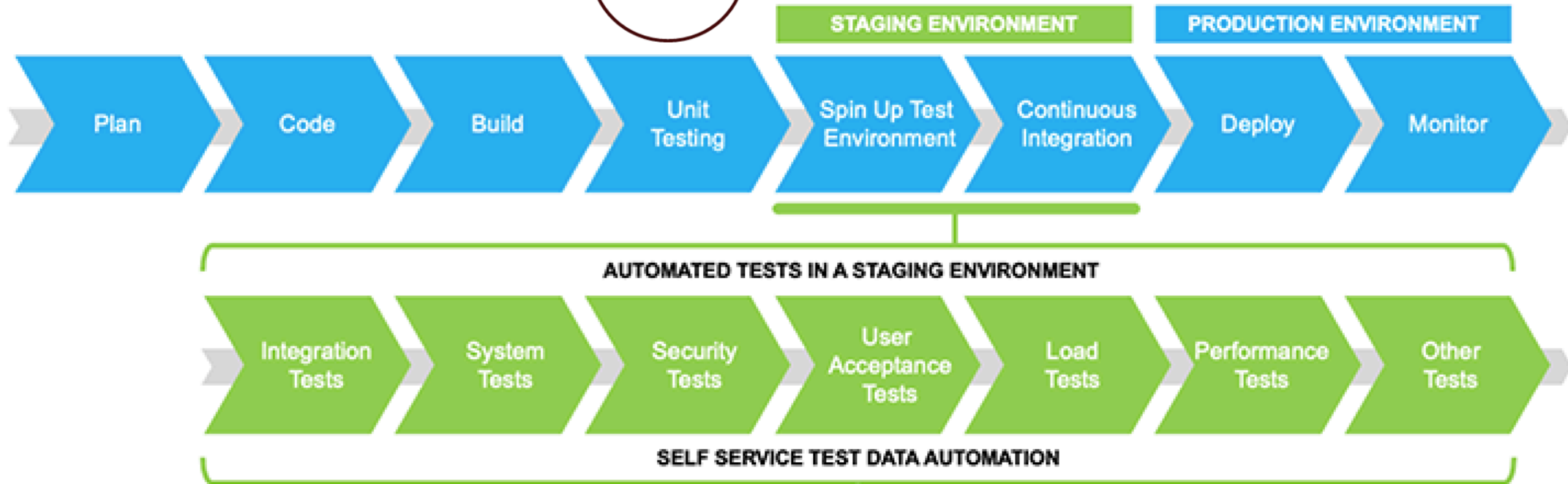
- Defines test data for an *Agile Feature*

# 7. Test Data for CI/CD Pipeline Automation

Synthetic Test Data On-Demand



for Developers



Synthetic Test Data On-Demand

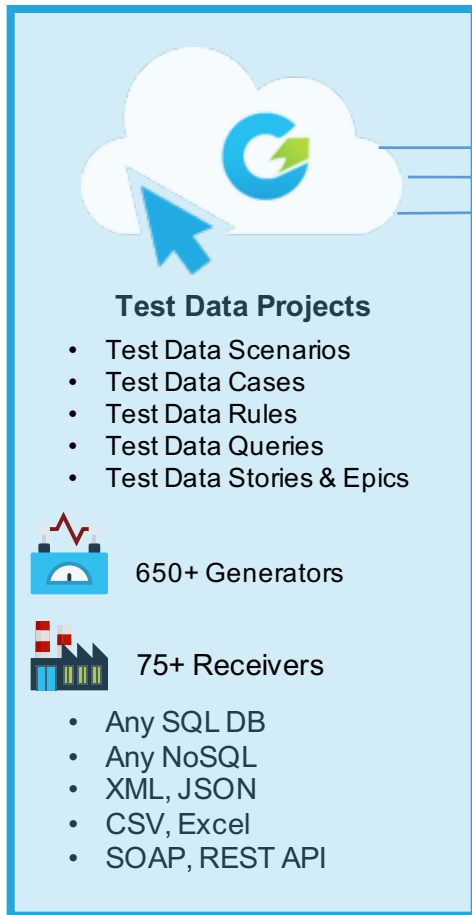


for Test Automation

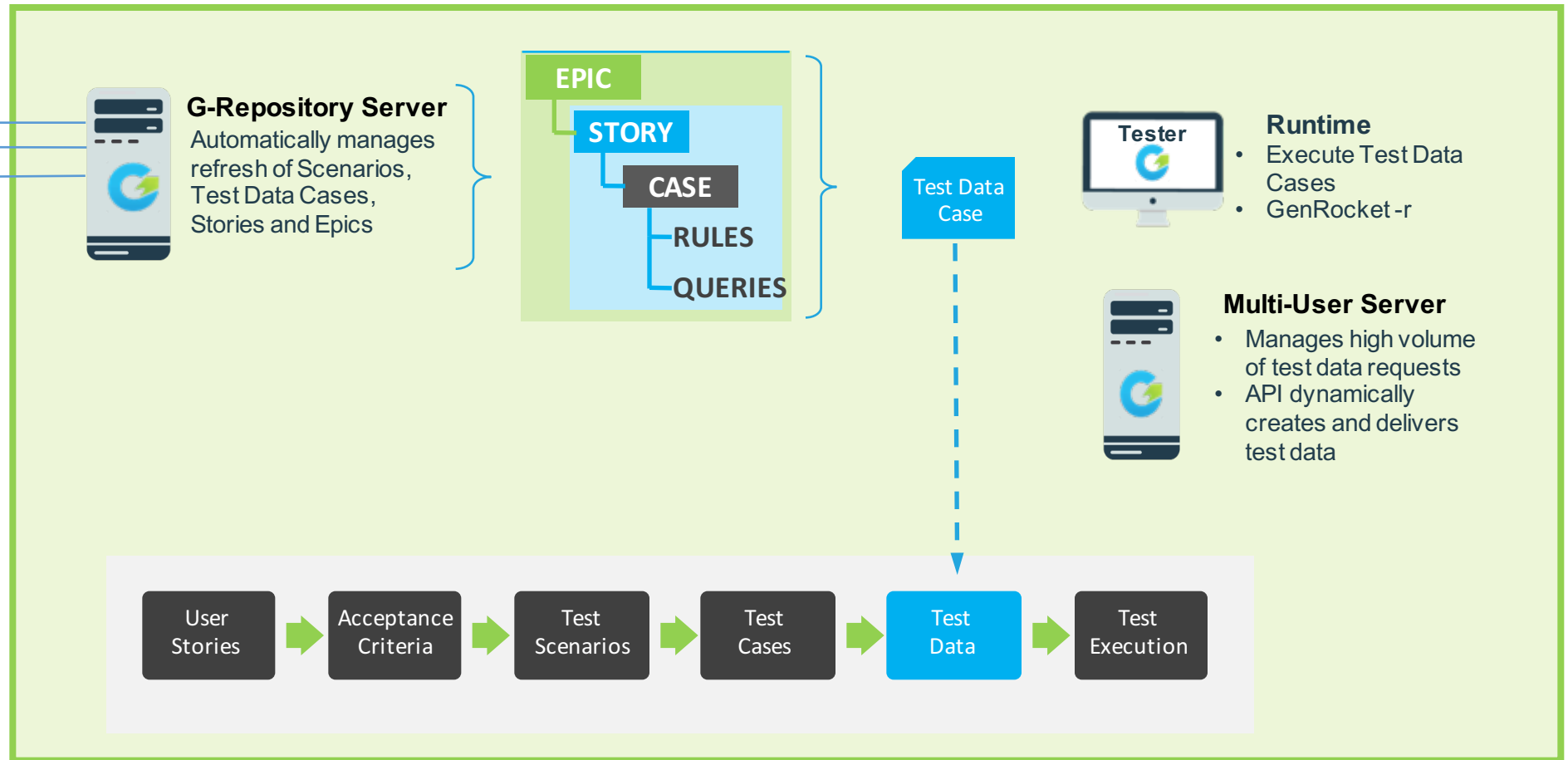
# Live Demo

# Enterprise Solution Architecture

## Cloud



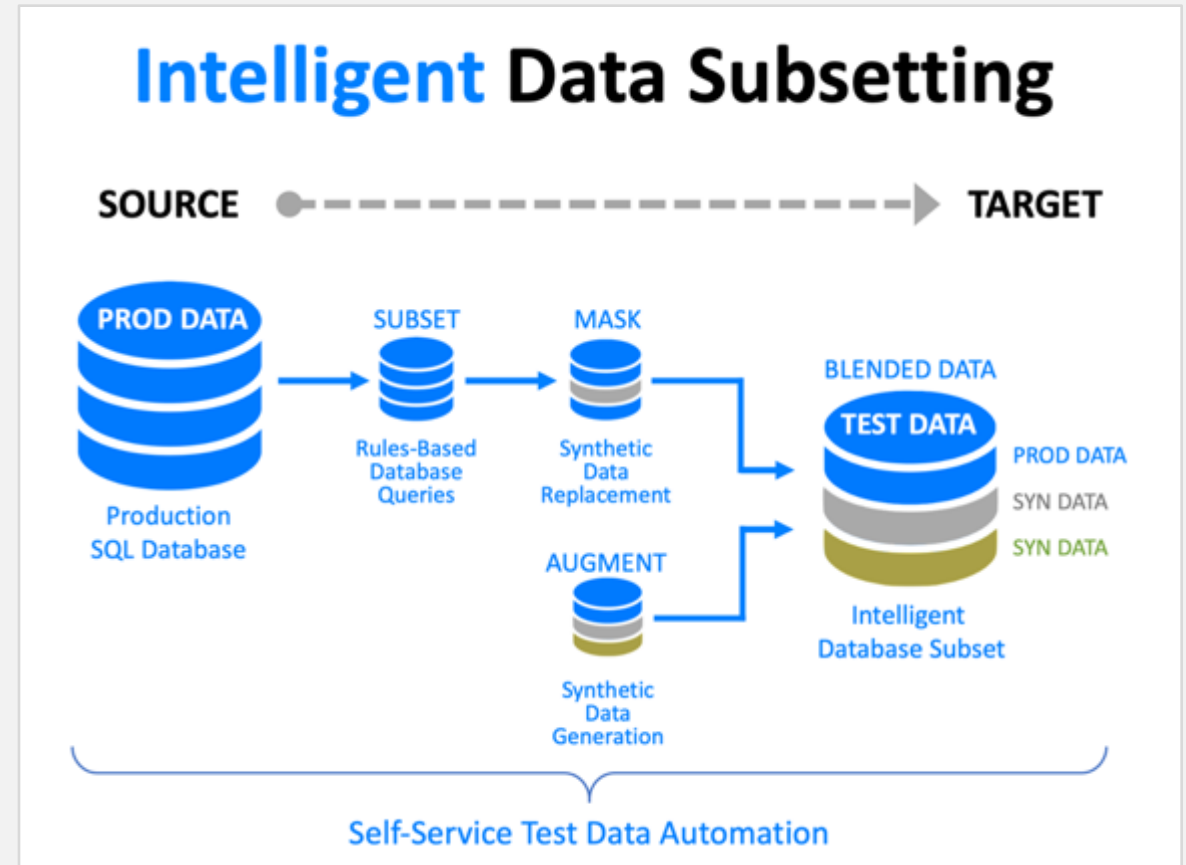
## On Premise



# Also Announcing: G-Subset

## Introducing G-Subset

- Configure **rules-based queries** to retrieve a production data subset
- “Mask” all sensitive data using **synthetic data replacement**
- Augment data variety and volume with **synthetic data generation**
- Share and re-use **blended data subset** configurations for multiple test cases



# New Pricing

		STARTUP	TEAM	PREMIUM	ENTERPRISE	UNLIMITED
Annual License Fee		\$10,000	\$15,000	\$25,000	\$50,000	<i>Request Quote</i>
<a href="#">Maximum Projects</a>		3	10	25	50	<i>Request Quote</i>
Total Domains (Tables) across Projects		1,000	5,000	15,000	30,000	<i>Request Quote</i>
<a href="#">Named Users and/or Named Servers</a>		10	25	50	100	<i>Request Quote</i>
KEY FEATURES		STARTUP	TEAM	PREMIUM	ENTERPRISE	UNLIMITED
<a href="#">Self Service Test Data Design</a>		Yes	Yes	Yes	Yes	Yes
<a href="#">Library of 650+ Data Generators</a>		Yes	Yes	Yes	Yes	Yes
<a href="#">Library of 70+ Data Receivers (Formats)</a>		Yes	Yes	Yes	Yes	Yes
<a href="#">Team-Level Permissions</a>			Yes	Yes	Yes	Yes
Data Lifecycle Management*			Yes	Yes	Yes	Yes
<a href="#">Intelligent Data Subsetting &amp; Masking</a>				Yes	Yes	Yes
Complex Test Data Workflow Management*					Yes	Yes

# Q&A