

IBM Consulting



G-Cloud 15

IBM – Quality Engineering – Test Data
Management as a Service
Service Definition Document

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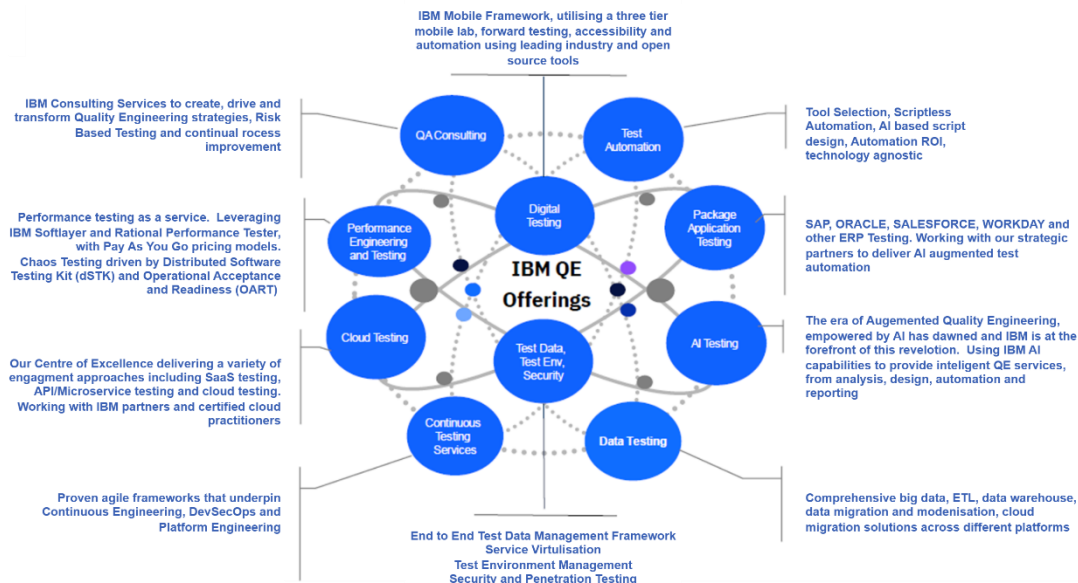
IBM - Quality Engineering –Test Data Management as a Service

Our offering Framework

The Test Data Management as a Service is part of the IBM QE (IBM Quality Engineering) suite of offerings.

IBM QE offerings cover the full breadth of testing needs.

The purpose of these services is to help you deliver quality government services at scale and to get increasingly complicated applications to market faster, with fewer defects and at a lower cost.



Our Data Testing services are part of IBM Quality Engineering (QE). They are designed to ensure data accuracy, optimise data management, promote Data Quality through automation, and empower Through Knowledge during upgrades, migrations, and modernisation.

IBM - Quality Engineering –Test Data Management as a Service

Service Overview

Features

- Data Migration and Modernisation Quality Engineering
- Cloud Migration and Big Data Testing Services
- Business Intelligence and Extract, Transform and Load (ETL) Testing
- Master Data Management (MDM) and Test Automation
- End-To-End Test Data Management
- Consulting, Advisory and Skill Development
- On-site, Off-site, Near-shore, and Off-site delivery enabled
- Test Data Assessment
- Experience in delivering complex data solutions
- Experience in leading data tools, i.e. Optim & Test Data Manager.

Benefits

- Improved ROI on tooling investment
- Increased automation adoption
- Reduced costs
- Increased speed of delivery
- Reduced CapEx costs
- Reduced risk of outage
- Increased brand reputation
- Improved ROI on Infrastructure investment
- Streamlined Path to Live.

Key Differentiators

- Dedicated Test Data Management specialists across the globe
- Experience enabling Test Data Management tools and process transformation
- AI and automation built into the IBM IGNITE Platform to accelerate Quality and Testing delivery
- Global Centre of Excellence for the delivery of Quality and Testing services

We have operational clients in the UK Government and across all UK sectors.

Real World Case Studies

- 90% reduction in execution efforts, 65% reduction in overall QA efforts, 65% reduction in QuerySurge CRC analytics execution runtime.
- Insurance firm facilitated 100% data validation, resulting in increased operational efficiency. It also provided comprehensive, accurate reports directly to Azure DevOps.
- A large retailer was able to improve their software testing efficiency by 25% by using IBM Test Data Management Services. The solution enabled the retailer to create realistic test data scenarios, reducing the risk of errors and improving the overall quality of their software
- A government agency was able to reduce its test data management costs by 30% by using IBM Test Data Management Services. The solution enabled the agency to automate test data creation and management, reducing the time and effort required for manual data preparation.

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Addressing Business Needs

In increasingly complex, integrated systems environments. Organisations are looking to create referentially intact, “right-sized” test databases.

Additionally, testing teams are looking to automate test result comparisons to identify hidden errors, whilst protecting confidential data used in test, training & development.

Our services encompass the entire spectrum of Data Validation and Migration Testing, providing businesses with end-to-end solutions that address today's most pressing data challenges. Whether you require quality engineering for data migration, big data, ETL, or MDM applications, our expertise covers it all.

Through our advanced automation capabilities, we bring speed, precision and coverage to data validation, effectively transforming your DevOps processes and Business as Usual (BAU) controls

IBM can help you address your requirements for testing essential government digital services with rigour and depth. We can help you address your key business needs, including:

Data validation across large programs poses several significant challenges that organisations need to overcome to ensure data integrity and accuracy:

Data validation testing is an essential control during the DevOps cycle and as a BAU control for regular data loads.

Manual data validation is time-consuming for both testing teams and business users.

A variety of source systems (files and databases) requires different skills to validate data.

Defects identified later in execution are more complex to fix when they involve ETL design.

Data validation testing is currently done manually, with little automation.

Manual spot checks/sampling do not provide complete coverage of the dataset.

Unstructured data, live streaming, third-party data, and packages such as SAP and Mainframe VSAM files are typically very challenging to manage. This leads to low-level trust in the data among the business.

IBM's Quality Engineering will help customers by delivering a set of fully Managed Testing Data processes and Tooling on a project or organisational basis. Enabling on-demand, high-availability, reusable, stable, and managed testing data utilising an obfuscation process and industry-standard tools, including IBM Accelerators.

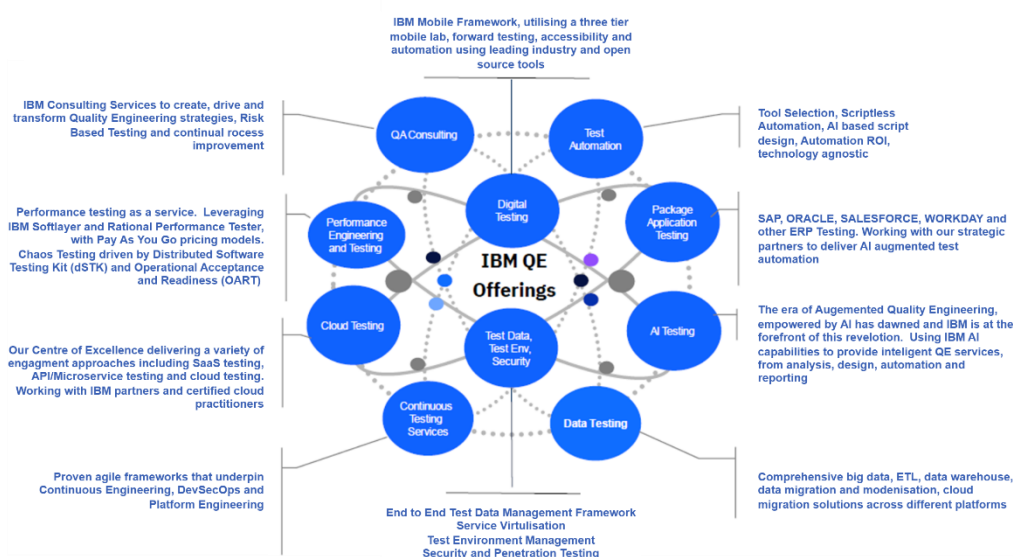


Tools and partnerships we leverage



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Service Definition



The diagram above details all the IBM QE offerings. Those offerings highlighted in BLUE are in scope for this Test Data Management as a Service.

IBM Data Testing Services delivers substantial value to our clients by focusing on several key areas:

Shift-Left Approach: IBM believes in early testing. We develop testing scripts during the design phase, which are then executed alongside unit testing to enable early defect identification and resolution.

Data Test Automation: We offer comprehensive data validation with automation tools, ensuring 100% data coverage and enhancing data solution quality beyond manual testing.

Component Testing: Each component is tested individually based on the design document, making defect identification easier and providing root causes to developers early in the process.

End-to-End Quality Engineering: We align business outcomes and Key Performance Indicators (KPIs) with requirements beyond technical testing, delivering a comprehensive quality solution for data management systems.

Integration and Extensions: Given the variety and ever-increasing number of file formats and source/target systems, we create custom extensions to extract data before validation.



Skilled Talent Pool: Our certified professionals are experienced in ETL/BI/MDM/Automation tools and scripting languages, ensuring high-quality deliverables for our clients.

Quantifiable Benefits: Our approach can reduce overall data testing QA efforts by up to 65%, improving accuracy, control, transparency, and integration. Moreover, it significantly increases test engineer efficiency and reduces invalid defects.

Industry Partnerships and Accreditations: IBM proudly carries industry-leading credentials in data services. We hold ISO 9001 certification, demonstrating our commitment to quality. Our partnerships with tech giants such as AWS, Informatica, Azure, and Google Cloud amplify our data handling capabilities. Our mastery of tools such as QuerySurge™, Tricentis Tosca™, and our IGNITE Quality platform solidifies our expertise in data validation and migration testing services.

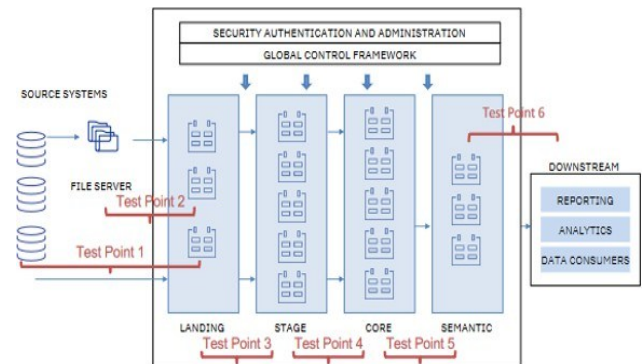
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IBM Test Data Automation

IBM's data testing automation enables organisations to address the challenges posed by the volume and complexity of data testing without incurring significant overhead or additional effort in testing processes.

IBM leverages automation tools to address data testing challenges.

- Incorporate data validation into DevOps
- Implement ongoing automated validations as BAU control
- Create reusable assets for new projects
- Achieve 100% coverage through data validation automation
- Utilise one-time configuration for repeatable runs
- Validate each ETL/transformation stage separately
- Leverage the IGNITE Quality Platform with AI to accelerate testing.



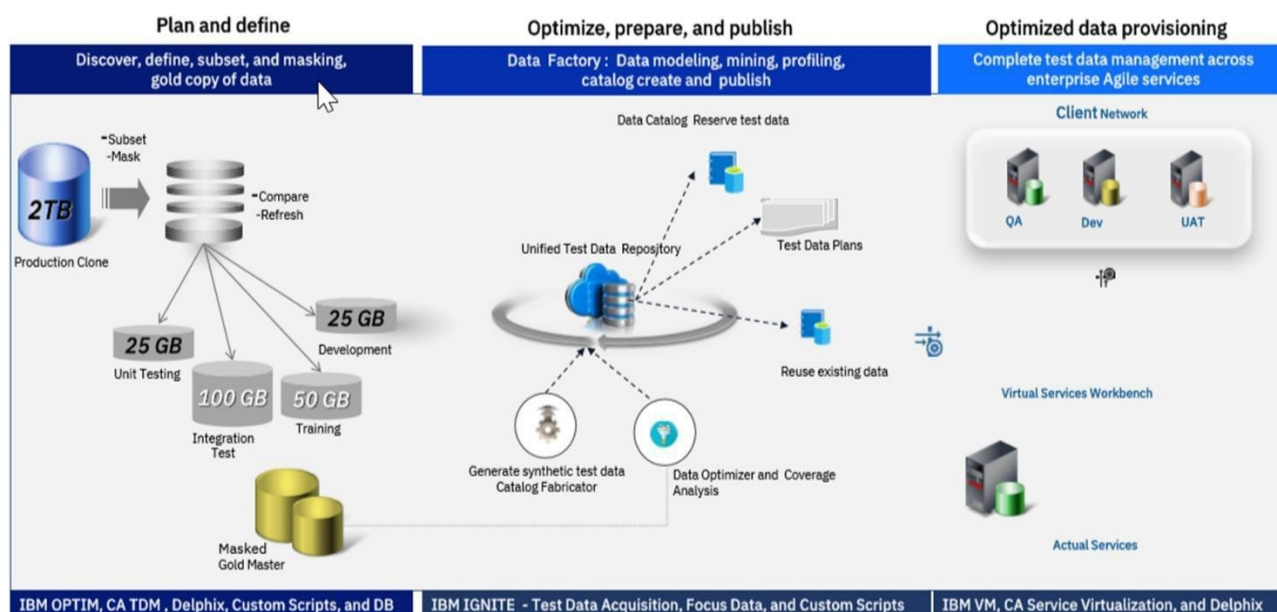
How IBM leverages QuerySurge™ to accelerate the process:

- QuerySurge enhances data test capability
- QuerySurge is a commercial leading ETL & Big data testing automation tool
- Validates data cell-by-cell across all test points
- Validates each transformation
- Supports end-to-end / 100% high-volume testing
- Runs unattended
- Integrates with ALM and CI/CD
- Offers scheduling and email features
- Supports multiple projects per instance.



Significantly, the partnership between QuerySurge and IBM enhances data integrity and migration efficiency by leveraging QuerySurge's advanced automation capabilities within IBM's environment. leading data services framework.

IBM has developed several Test Data Management accelerators and has adopted industry-standard tools such as QuerySurge, Optim, and TDM, while investing in people to ensure they have the skills for a rapidly changing technology landscape.



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IBM Approach

The most critical systems that support government organisations demand quality outcomes. To achieve this, we take an asset-driven approach to delivery and bring extensive expertise in Quality and Testing methods.

We categorise our approach into six areas, each of which has a set of specific activities:

Governance

- Environmental governance
- Data governance
- Quality governance
- Control functions

Stakeholders

- Strategy & Digital Testing
- Product ownership
- Communications approach
- Stakeholder engagement

Inception

- Onboarding
- Coaching
- Training
- Location management

Team

- Team sizing and structure
- Quality standards
- Tooling and automation
- Metrics

Process Integration

- Demand
- Branching and merging
- Testing approach
- Path to live

Ways of Working

- Methods
- Empowering Team
- Transparency
- Continuous Improvement



We have a “Test Less, Test Right” mantra and we believe in accelerating testing using AI to improve root cause identification and achieve faster resolutions.

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About IBM

Supporting Governmentt

The problems we solve for clients are complex and cannot be satisfied with technology alone. They require a partner who can also offer deep industry expertise and a trusted relationship.

IBM combines the portfolio, people and sense of purpose necessary to meet today's enterprise demands. Every day, we support and manage complex delivery for government clients, with the impact of delivery reaching far beyond citizens and national services.

We bring industry experience, insight, and technology capability to deliver and operate secure, scalable, optimised, and available services for government. We support you by bringing:

- **Industry expertise** – Professionals who understand and are passionate about delivering quality public services and can bring industry insights and apply innovation to your business processes
- **Trust and security capabilities** – Protecting valuable data and insights and deploying innovations responsibly
- **Innovative technology** – Expertise in areas such as AI, blockchain, 5G, Automation, IoT, cybersecurity and quantum, delivered in a Hybrid Cloud environment
- **Experienced Services professionals** - to support strategy, innovation and deliver transformation and change to processes, applications and cloud infrastructure
- Global alliances – valuable partnerships with the world's leading vendors

We help government organisations in the UK and worldwide deliver and transform essential public services – our teams are passionate and proud about helping you to make a real difference to people's lives.

Government Services Supported by IBM



Defence and Intelligence



Public Safety and Policing



Healthcare



Life Sciences



Tax and Revenue Management



National Infrastructure



Social Care



Education



Works and Pensions

This is IBM in the UK

We have worked together with organisations in the UK for over 100 years, with a rich history of joint innovation and achievements, built on trusted relationships.



Cloud

Together, IBM and Red Hat are working to deliver the world's only **next-generation hybrid multicloud platform**



Economy

IBM has been **integral to the UK economy for >100 years**, and is one of its largest tech employers



R&D

In the UK alone, IBM **invests £170 million in R&D** each year



Quantum

IBM Q, the world's most advanced quantum computing initiative for commercial use, is being used by CERN



Environment

IBM's **focus on sustainability** began in 1971 with our first environmental policy



Artificial Intelligence

IBM develops **watsonx based generative AI solution** for the Austrian federal armed forces to **provide fact-based evaluation and classification** for the ability to remain capable of acting in the light of risk scenarios.



Changing the world

IBM was awarded **World Changing Company of the Year 2019** by Fast Company



Royal recognition

29 UK IBMers received **honours from the Queen** for contributions to tech and society



Diversity

IBM won the **Global Diversity Award 2019** and the ENEI's **Gold Standard**



Graduates

IBM is committed to developing future talent – we are Target Jobs' **Graduate Employer of the Year 2019**



Volunteering

IBM dedicates **>20,000 volunteering hours every year** for a better society



Tech talent

IBM runs P-TECH schools in 18 countries, helping **>100,000 students build skills for careers of the future**



Inventors

IBM UK is home to many Master Inventors, with **>250 patents filed last year alone**

