

IBM Consulting

G-Cloud 15

IBM – Quality Engineering – Non-Functional and Infrastructure Testing

Service Definition Document

Email: ukcat@uk.ibm.com

Contact: Anne-Marie Wheeler

Contents

Our Offering Framework	3
Service Overview	4
Addressing Business Needs	5
Service Definition	6
IBM IGNITE Quality Platform	7
IBM Approach	8
About IBM	9

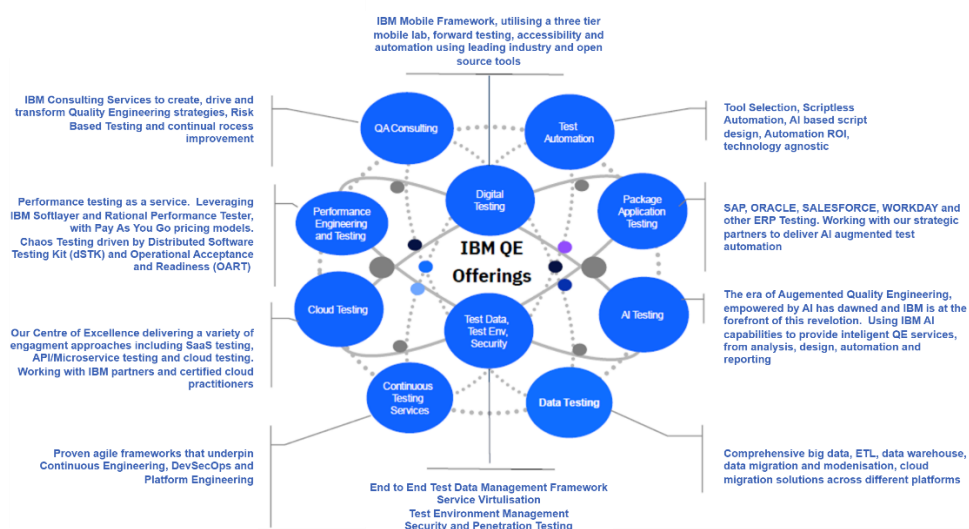
IBM - Quality Engineering – Non-Functional and Infrastructure Testing

Our Offering Framework

The Non-Functional and Infrastructure Testing 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 services, part of IBM Quality Engineering, are designed to minimise performance defects, identify performance issues early, and optimise production capacity planning.

Our Services include:

- Performance Testing as a Service on Cloud
- E2E performance and Stress test
- Digital User Experience Management
- Data Centre Migration Non-functional test
- Performance engineering and Benchmarking Services
- Operational Acceptance and Readiness Testing and
- Chaos Engineering services.



IBM - Quality Engineering – Non-Functional and Infrastructure Testing Service

Overview

Features

- Performance Testing as a Service on Cloud
- E2E performance and Stress Testing
- Performance Engineering and Benchmarking Services
- Digital User Experience Management
- Data Centre Migration Non-Functional Testing
- Accessibility Testing
- Chaos Engineering services
- Infrastructure Testing and Resilience
- Operational Acceptance Testing.

Benefits

- Quality standards across the enterprise delivering business outcomes
- Understand the system's capacity and failover impact
- Achievement of Service Level Objectives
- Increased application availability in production
- Reduced cycle time through test accelerators such as automation, virtualisation, AI, and Performance Methods
- Profiling using Jprobe, Jvisual, Yourkit, dotTrace and SQL Explain Plan
- Extensive tooling experience, JMeter, Locust, dSTK, NeoLoad, Open Source, Rational.

Key Differentiators

- A global team of dedicated performance, OART, and Chaos testing engineers
- Thousands of non-functional tests run every day
- 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 as well as a wide breadth across all UK sectors.

Real World Case Studies

- A multinational life insurance company in Europe used Chaos Engineering to test their IBM Cloud, Red Hat OpenShift, AWS, SaaS Managed Services and Distributed Microservice
- A large FX settlement services company in the US used Chaos Engineering to test their On-premise, VMware, Private Cloud, Blockchain, and Hyperledger Fabrics
- A large commercial bank in the UK used Chaos Engineering to test their VMware: On-Premise and Off-Premise (IBM Cloud)
- A large diagnostics company in Europe used Chaos Engineering to test their Red Hat OpenShift and AWS
- A large cooperative financial institution in the UK used Chaos Engineering to test their Red Hat OpenShift, VMware and AWS.

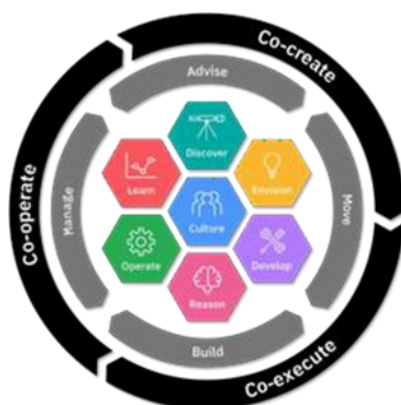
IBM - Quality Engineering – Non-Functional and Infrastructure Testing

Addressing Business Needs

IBM's Non-Functional Test (NFT) and Infrastructure Testing Services help customers validate systems' Non-Functional requirements, ensuring they are defined, testable, and met during execution; enabling customers to realise enhanced value from delivered systems and upgrades, and reducing any brand-damaging outages.

IBM Garage approach used to co-create performance engineering plans.

What are the challenges that businesses face when trying to ensure high-performance applications?



- Testing services related to large-scale engagements
- Poor performance can lead to lost revenue, lost customers and damaging brand reputation
- Complex IT environments demand high-performance applications
- Scalability issues, poor coding practices, poor performance testing and inadequate capacity planning can all contribute to poor application performance
- Emerging technologies such as cloud computing, AI and machine learning require a holistic approach to performance engineering.

Our services address these critical challenges by providing a comprehensive range that ensures your applications perform at their best.

We use a proven performance engineering framework integrated with Agile/DevOps and micro-level innovations, assets and accelerators derived from our global experience with similar engagements.

How does IBM deliver services for Performance Engineering?

Horizontal across the organisation: We deliver performance. Testing/engineering, performance monitoring, and performance consulting services across all sectors, including EA, SAP, Salesforce, and cross-brand offerings such as IBM Technology and Systems. Using the IBM Garage approach, co-creation workshops lead to co-execute and co-operate.

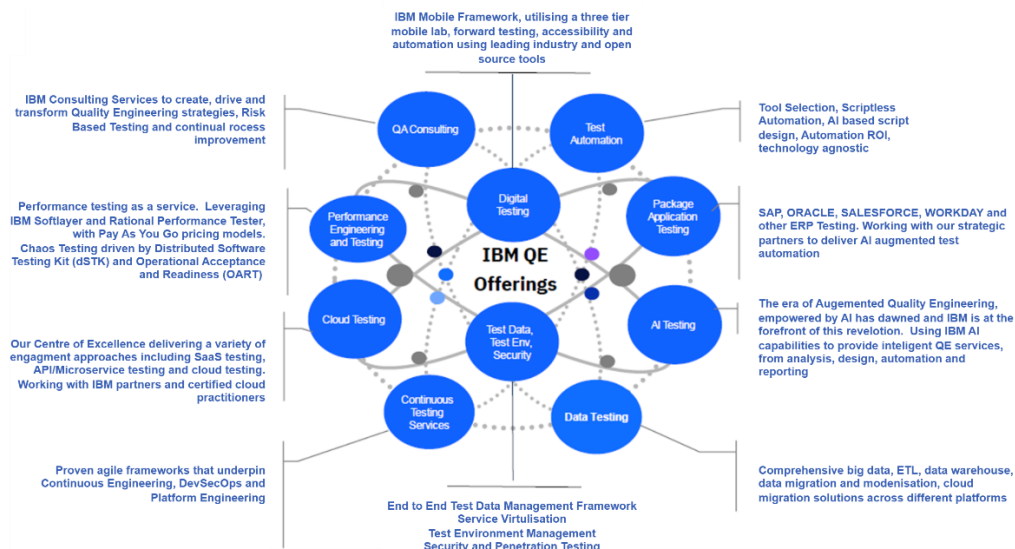
Our services use a variety of performance engineering tools across eight categories, including profiling and application performance management.

We can also deliver services to support an evolving Quality Engineering approach. Services include:

Profiling, Application Performance Management, Performance Modelling, Performance Analysis, Shift-Left delivery Framework, Automation, Cloud, Microlevel innovations.

IBM - Quality Engineering - Non-Functional and Infrastructure Testing

Service Definition



The diagram above details all the IBM QE offerings. Those offerings highlighted in BLUE are in scope for this Non-Functional Testing and cover mobile and digital channel quality and testing, utilising the latest automation techniques and implementing Continuous Testing into delivery.

IBM's Non-Functional and Infrastructure Testing delivers proven quality assurance to government organisations.

OART Testing

OART helps ensure that the system meets business requirements and performs as expected in the production environment. At IBM Quality Engineering, we offer a comprehensive OART service that covers all aspects of system readiness, so you can confidently deliver solutions that meet your business needs.

Chaos Engineering

Chaos Engineering (ChE) is a practice that proactively tests IT systems for potential failures and weaknesses, helping organisations build more resilient and reliable systems.

Cloud Testing

Our Centre of Excellence delivers a variety of engagement approaches, including SaaS testing, API/Microservices testing and Cloud testing circles.

Continuous Testing Services

Our Proven agile testing frameworks underpin DevSecOps & Continuous Engineering, utilising techniques such as Chaos Testing and Canary Testing.

AI Testing

IBM QE provide quality and testing services to verify the accuracy of your AI and Machine Learning applications. IBM QE also make extensive use of AI and Machine Learning technologies.

IBM - Quality Engineering - Non-Functional and Infrastructure Testing

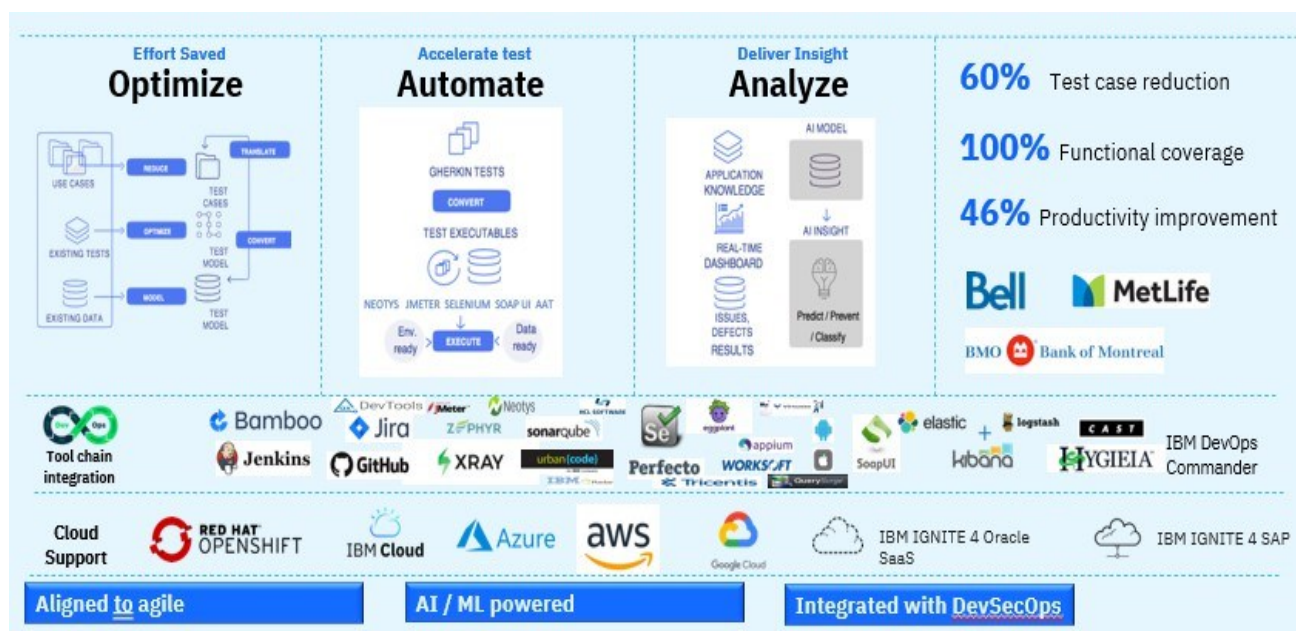
IBM IGNITE Quality Platform

Underpinned by IBM's proven testing methodology. IBM has extensive expertise in Testing Accelerators (Tools, Risk-Based, Combinatorial, Model-based), supported by the IGNITE Quality Platform. To support our offerings, IBM also provides the IGNITE Quality Platform. This AI-enabled framework enables you to move from detection to prevention faster, with higher quality and at lower cost.

The IBM IGNITE Platform provides a set of loosely coupled tools within a toolchain to support industry-leading quality and testing services. Our services are built on real Quality and Testing experience with highly critical systems across government and other industries. We have made extensive investments in toolchains, automation and robotics to deliver quality services that go beyond traditional testing.

The platform offers extensive integration capabilities across toolchains and hyperscalers. The IBM Quality Engineers are highly trained across the Quality platform and other vendor tools.

The three phases depicted below are: Optimise to reduce costs whilst ensuring coverage (through Combinatorial, Risk-Based, or Model-based testing techniques). Automate to accelerate Testing using AI-infused tools. Analyse with AI-infused tools to identify trends, and Root Cause Analysis to deliver actionable insights.



IBM is a recognised leader in Quality Engineering and Testing Services :

- Gartner: Magic Quadrant for API Management and Testing, October 2023,
- The Forrester Wave™: AI Decisioning Platforms, Q2 2023:
- Gartner: Market Guide for Application Testing Services, January 2022,
- The Forrester Wave™ : Continuous Automation and Testing Wave 2021,
- IDC 2018 : IBM Delivers Market –Leading Software Test Automation.

IBM - Quality Engineering - Non-Functional and Infrastructure Testing

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.

IBM - Quality Engineering - Non-Functional and Infrastructure Testing

About IBM

Supporting Government

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



About IBM

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**

