

# IBM Consulting



G-Cloud 15

IBM – Quality Engineering - Functional Testing

Service Definition Document

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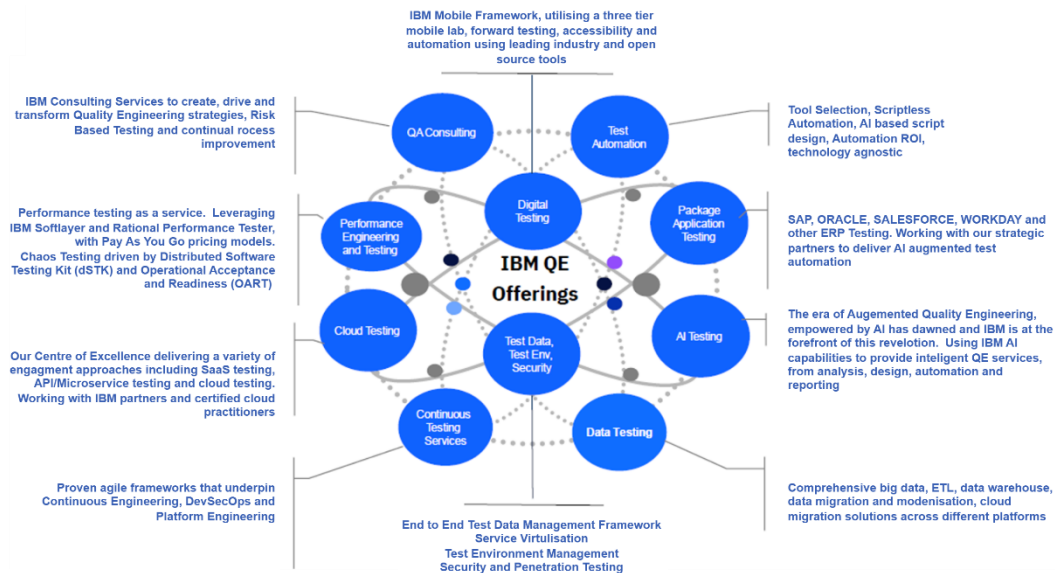
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# IBM - Quality Engineering - Functional Testing

## Our Offering Framework

Functional Testing service is part of the IBM QE (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 high-quality government services at scale and bring increasingly complex applications to market faster, with fewer defects and at a lower cost.

Services, which are part of IBM Quality Engineering, are designed to minimise functional defects, trap functional issues early, quality first mindset with shift left testing and optimising test cases whilst maximising coverage. Our Services include:

- Functional Testing across multiple test phases
- End-To-End Functional Testing
- Functional Testing Optimisation and Automation
- Functional Testing on the Cloud
- Digital Migration and Functional Testing.

# IBM - Quality Engineering - Functional Testing

## Service Overview

### Features

- System Testing
- System Integration Testing
- User Accessibility and Acceptance Testing
- End-to-End Testing
- Quality Engineers with a Quality First Mindset
- A shift in Quality culture
- Continuous Functional Testing
- Technology spectrum from Mainframe to AI
- Powered by IBM IGNITE Platform, a set of Accelerators
- Tool and methodology agnostic.

### Benefits

- Quality standards across the enterprise delivering business outcomes
- Proven test methods providing a platform to support all build approaches
- Reduced cycle time through test accelerators such as automation or virtualisation
- Quality at speed and scale through an integrated managed service
- Reduced costs, increased speed of delivery and increased brand reputation.

### Key Differentiators

- Thousands of dedicated Quality and Testing professionals globally
- 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

- IBM QE engages a local Water Utility company to improve End-To-End Quality and Test approaches
- AI and automation built into the IBM IGNITE Platform to accelerate Quality and Testing delivery
- As a long-term partner, IBM has collaborated with a Canadian Telco to deliver an award-winning Test Centre of Excellence with 99% Defect Removal Rate and a 98% Customer Service Rating
- A large UK building society, 55% reduction in test Headcount, automation up to 90%, zero production defects due to test.
- World's largest US financial institution, 60% reduction in the number of tests created and maintained with complete coverage of requirements (read 100%).

# IBM - Quality Engineering - Functional Testing

## Addressing Business Needs

IBM Quality Engineering (IBM QE) addresses customers' functional testing needs. The IBM QE method and platform implementation will help customers bring quality applications and features to market more quickly and cost-effectively.

- **Legacy systems and outdated technology.** Modernisation strategies, integration testing with AI-led test automation and legacy system transformation
- **Cybersecurity threats and data breaches.** Robust security testing, vulnerability assessments and data protection measures
- **Ensuring compliance with government regulations and standards.** Compliance testing frameworks, adherence to rules and quality assurance processes
- **Increasing user demands for seamless digital services:** User-centric design, agile testing methodologies and automation and continuous feedback for enhanced user experience
- **Optimising resource allocation and budget constraints.** AI-led test automation, efficient resource utilisation and optimisation of testing efforts for cost-effective quality engineering.

Our teams can help you address your requirements for testing essential government services with rigour and depth.

IBM Quality Engineering (QE) provides comprehensive and innovative solutions to address the unique challenges faced by the public sector.

With the ever-growing dependence on technology in government operations, ensuring the quality, reliability and security of software systems become paramount.

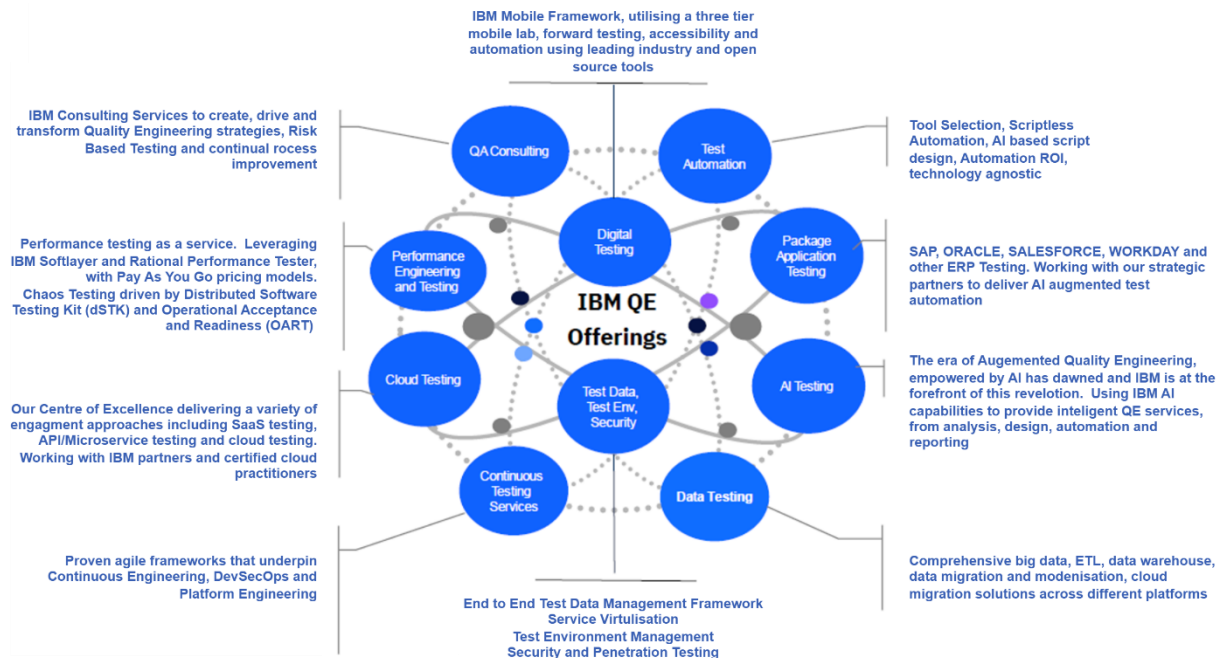
IBM QE brings its deep industry expertise, cutting-edge tools and proven methodologies to help government agencies achieve their quality goals, enhance citizen services and drive digital transformation.



# IBM - Quality Engineering - Functional Testing

## Service Definition

IBM Testing Method provides end-to-end, industry-leading, delivery lifecycle-agnostic processes for implementing and delivering functional testing across the system, system integration, and acceptance.



The diagram above details all the IBM QE offerings. Those offerings highlighted in BLUE are in scope for this Functional Testing as a Service offering and cover quality and testing services for Cloud computing, the implementation of Continuous Testing Services, the verification of AI components, as well as building in the use of AI to predict failure points and provisioning and proving that functional data models are fit for purpose.

### 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.

### Data Testing

Big Data, ETL, Data Warehouse. IBM QE provides a comprehensive quality and testing solution across platforms, including data warehouse technologies, Hadoop, NoSQL, database types, flat files, XML & front-end transactions.

### AI Testing

IBM QE provide quality and testing services to verify the accuracy of your AI and Machine Learning applications.

# IBM - Quality Engineering - Functional Testing

## IBM IGNITE Quality Platform

To support all of 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 Quality 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.

IBM Functional Testing support services include:

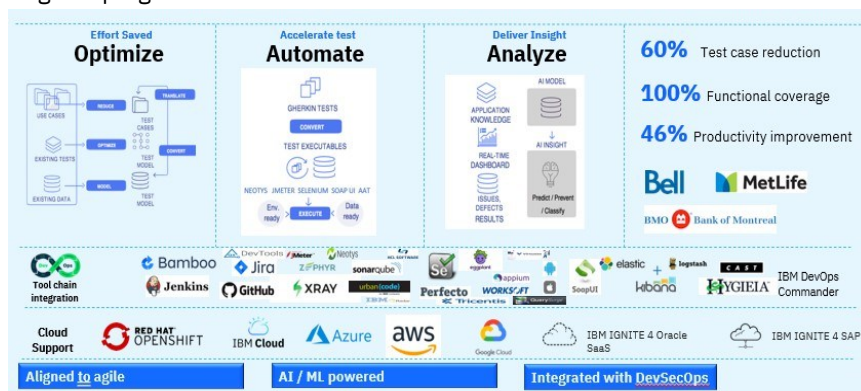
- Comprehensive testing capabilities based on the IBM IGNITE Method, IGNITE Platform, Skills and learning functions
- Industry-standard frameworks covering methods, standards, governance and measurements to accelerate quality delivery
- A global specialist resourcing model with a standard job role speciality taxonomy and rapid resource scaling model
- Highly resilient physical and IT infrastructure, with 40 delivery centres (local and remote) and BCP across test services.

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). Automation to accelerate Testing using AI-infused tools. Analyse with AI-infused tools to identify trends, and Root Cause Analysis to deliver actionable insights.

IBM has developed management and measurement tools, including quality dashboarding and standardised Service Level Agreements, to inform requirements.

Dashboarding, standardised testing, and quality management reporting provide consistency, speed to insight, and improved decision-making and programme outcomes.



# IBM - Quality Engineering - Functional 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:

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Governance</b></p> <ul style="list-style-type: none"> <li>• Environmental governance</li> <li>• Data governance</li> <li>• Quality governance</li> <li>• Control functions</li> </ul> <p><b>Stakeholders</b></p> <ul style="list-style-type: none"> <li>• Strategy &amp; Digital Testing</li> <li>• Product ownership</li> <li>• Communications approach</li> <li>• Stakeholder engagement.</li> </ul> <p><b>Inception</b></p> <ul style="list-style-type: none"> <li>• Onboarding</li> <li>• Coaching</li> <li>• Training</li> <li>• Location management</li> </ul> | <p><b>Team</b></p> <ul style="list-style-type: none"> <li>• Team sizing and structure</li> <li>• Quality standards</li> <li>• Tooling and automation</li> <li>• Metrics</li> </ul> <p><b>Process Integration</b></p> <ul style="list-style-type: none"> <li>• Demand</li> <li>• Branching and merging</li> <li>• Testing approach</li> <li>• Path to live</li> </ul> <p><b>Ways of Working</b></p> <ul style="list-style-type: none"> <li>• Methods</li> <li>• Empowering Team</li> <li>• Transparency</li> <li>• Continuous Improvement</li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**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 - Functional 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



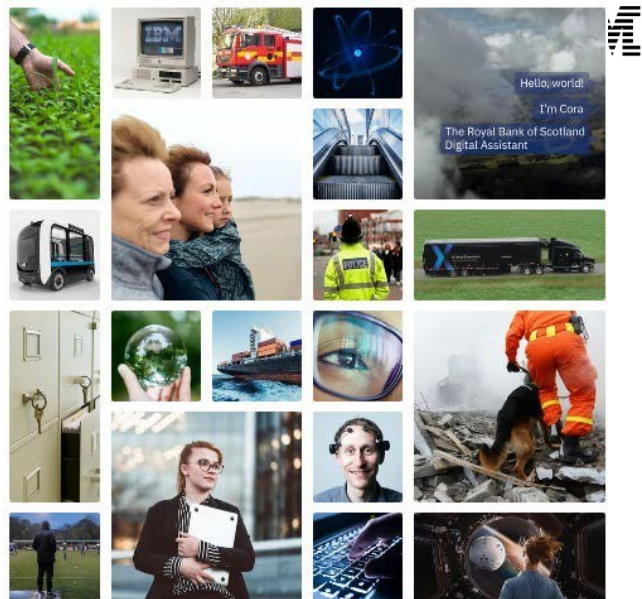
Education



Works and Pensions

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&amp;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**

