

IBM Consulting



G-Cloud 15
IBM – Quality Engineering - Chaos
Engineering Services

Service Definition Document

Email: ukcat@uk.ibm.com

Contact: Anne-Marie Wheeler

Contents

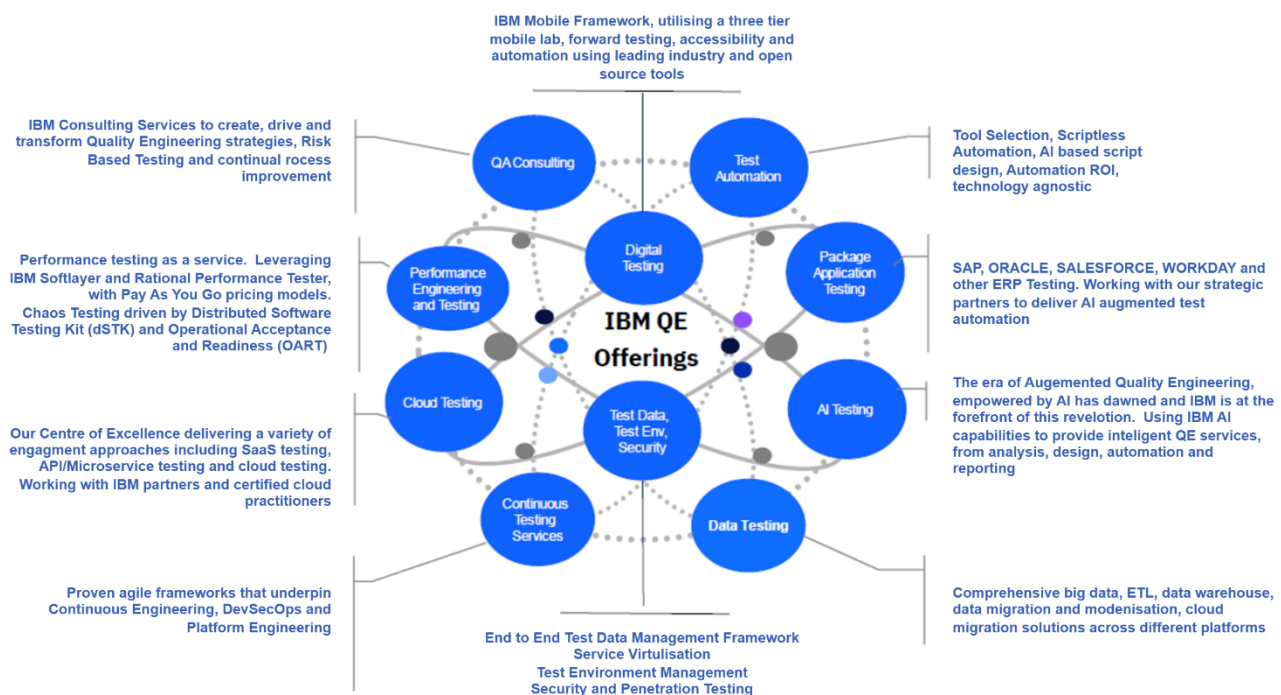
Our offering Framework.....	3
Service Overview.....	4
Addressing Business Needs	5
Service Definition.....	6
Chaos Engineering Services - IBM Approach	7
About IBM Supporting Government	8

IBM – Quality Engineering - Chaos Engineering Services

Our offering Framework

The Chaos Engineering 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 quality government services at scale and to get increasingly complicated applications to market faster, with fewer defects and at a lower cost.



IT systems have become integral to many businesses, and when they fail, the impact can be significant, both financially and reputationally. Chaos Engineering can help enterprises to avoid these types of IT disasters. By proactively testing IT systems for potential failures and weaknesses, businesses can identify and address these issues before they cause costly outages. Chaos Engineering (ChE) is a practice that proactively tests IT systems for potential failures and weaknesses, helping organisations build more resilient and reliable systems.

IBM – Quality Engineering - Chaos Engineering Services

Service Overview

Features

- Improved system resiliency
- Increased innovation
- Reduced downtime and cost
- Enhanced security
- Better decision-making
- Supports continuous improvement.

Benefits

- Identify and mitigate the impact of complex system failures before they occur
- Reduced costs
- Increased speed of delivery
- Reduced CapEx costs
- Reduced risk of an outage
- Increase brand reputation
- Improved ROI on Infrastructure investment
- Streamlined Path to Live
- Support Continuous Delivery Pipelines.

Key Differentiators

- IBM has a long history and expertise in managing complex IT systems.
- IBM offers unique CE-related tools, like dSTK and services to automate and streamline ChE experiments
- IBM's Hybrid Cloud Platform and Red Hat OpenShift provide a flexible and scalable environment for testing complex systems in production
- IBM has a large ecosystem of partners and collaborators for leveraging best practices in ChE
- IBM offers security and compliance solutions for identifying and mitigating potential risks during ChE experiments.

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 Microservices
- 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.

IBM – Quality Engineering - Chaos Engineering Services

Addressing Business Needs

Chaos Engineering is a form of 'non-functional testing' that should be approached with a scientific mindset, using hypotheses and data-driven experiments to validate assumptions and learn from failures. It requires collaboration and communication across teams, including developers, operations, security, and business stakeholders, to be effective. ChE is a practice that involves deliberately injecting failures, errors, or attacks into a system as experiments to learn from them and improve overall system performance.



We have a team of experienced and certified professionals who can provide end-to-end support for your ChE needs. We can help you address your key business needs, including:

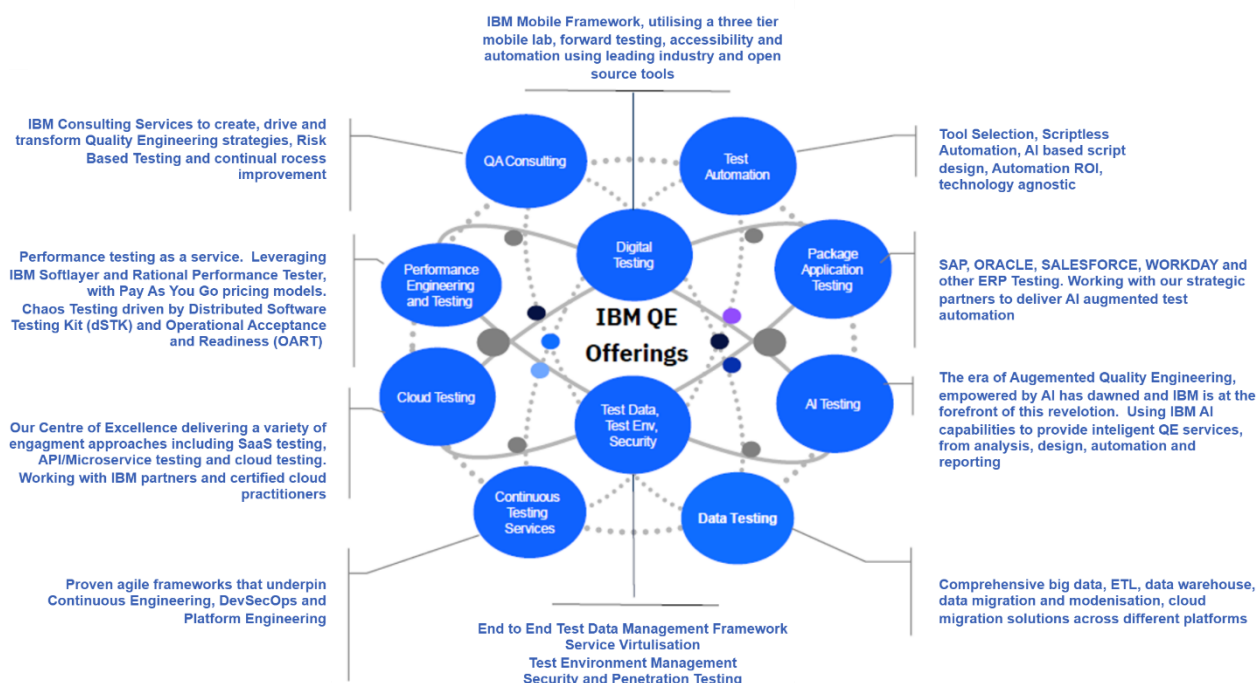
- **Chaos Engineering as a Service** - IBM provides a fully managed Chaos Engineering Service, which allows teams to focus on building resilient systems without worrying about managing the underlying infrastructure
- **Realistic Simulations** - IBM uses real-world scenarios and simulations to test systems' resilience, ensuring that the experiments are relevant and valuable
- **Continuous Feedback** - IBM provides real-time feedback and analytics, enabling teams to make data-driven decisions and continuously improve their systems' resilience
- **Collaborative Approach** - IBM works closely with teams to understand their unique requirements and tailor the Chaos Engineering approach to their specific needs.

Overall, IBM Cloud Garage Method for Chaos Engineering is a comprehensive service that helps teams build resilient systems, reduce downtime and improve their overall system performance.

IBM – Quality Engineering - Chaos Engineering Services

Service Definition

IBM Quality Engineering will provide externally accredited senior advisors to work with customers to understand and assess the current challenges in the delivery and testing organisation.



The diagram above details all the IBM QE offerings.

Those offerings highlighted in BLUE are in scope for this Chaos Engineering Service offering and cover Non-Functional Testing in Performance Engineering, Cloud, Continuous Testing and AI Infused Testing. The business value of ChE lies in its ability to reduce the risk of revenue loss, reputational damage, and customer churn, and to drive innovation by encouraging teams to experiment with new technologies and architectures. Overall, ChE can help organisations achieve higher levels of agility, scalability and customer satisfaction, while minimising the cost and impact of downtime and service disruption.

To provide this service, IBM leverages a unique Chaos Testing Asset called dSTK (Distributed Software Testing Kit). dSTK uncovers systemic weaknesses by intelligently injecting Chaos with AI-led chaos engineering and testing. dSTK enables integrated execution of non-functional chaos test probes alongside the functional test suite. dSTK extends API testing at scale with IBM Research assets and enables AI-driven chaos testing to validate business-functionality-driven resilience.

IBM – Quality Engineering - Chaos Engineering Services

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:



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.

Governance

- Environment 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

About IBM Supporting Government

We help government organisations in the UK and worldwide deliver and transform essential public services – our teams are both passionate and proud in making a real difference to people’s lives.

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.

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**

