

IBM Consulting



G-Cloud 15

IBM – Migrate and Modernise to Cloud and
Containers with Red Hat
Service Definition Document

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IBM Migrate and Modernise to Cloud & Containers with Red Hat

Service Overview

Features

- Proven experience of application and data migration within complex infrastructure architectures
- Technical debt removal & optimisation using approaches including re-factor, re-platform and containerisation
- Modernisation assessment led by design thinking that includes deep discovery & insights of the application portfolio
- Proven approach to Cloud migration and modernisation using IBM Garage Method for Cloud
- Strategic partnership with hyperscalers utilising industry-leading Cloud Innovate methodology and tooling
- Plan and manage your hybrid cloud migration making use of generative AI where appropriate, ensuring predictable outcomes and minimising risk.
- AI-powered application discovery and tooling providing insight to Cloud Portfolio Migration
- DevSecOps and shared services provide consistent, efficient, and portable applications.
- Roadmap for phased modernisation while minimising impact on operations
- Application reengineering & transformation to cloud using API enablement, in place modernisation, re-architecture including modularisation of applications, defining and developing Microservices
- Modernise approach with standard patterns derived from 'The Six Rs':
- **Retire, Retain, Rehost, Re-platform, Re-purchase, Re-architect**

Benefits

- Migration of large-scale legacy applications and data at pace, leveraging our global migration factories
- Redesign legacy applications using microservices architectures to run natively on any cloud in Red Hat OpenShift containers.
- DevSecOps pipelines achieve consistent compliance with government security standards
- Enhanced user experience through application stability, scalability, and consistent integration
- Increased enterprise agility with "on-demand" environments, faster time to market (40 to 50%) and Up to 30% reduction of operational costs of IT portfolio
- Reduced Risk & Improved quality through analytics-led, structured re-engineering approach
- Ability to transform culture and skills through new ways of working with IBM's approach: IBM Garage 'co-creation', Virtual First model, Modernisation framework.
- Improve portfolio availability and resiliency by 20-30%
- Ensure application portability through containerisation

Key Differentiators



- Unparalleled experience with resiliency, security and compliance with hundreds of Clients engaged on a Cloud journey with IBM
- IBM Garage's model that focuses on starting small and scaling rapidly, resulting in customer-centric implementation of modernisation initiatives that deliver value faster.
- More than twenty five + ready to use technical assets covering various solution patterns like Rehost, Re-platform, Re-architect, Refactor and others
- Dynamic delivery model enabling real-time network of innovation micro-centres with access to virtual global talent pools for resilient, portable rapid cloud platform- based application development
- Faster "container led modernisation at Scale" across Application and Data by combining Red Hat offerings with pre-built GBS Services assets
- Deeper end-to-end DevSecOps adoption by combining GBS DevOps accelerators, Red Hat's automation and IBM's security capabilities
- Underpinned by IBM's industry expertise, hybrid Multicloud assets with Red Hat and Journey to Cloud services.
- IBM's expertise in working with Fortune 500 and other clients is crucial for successfully implementing modernisation programs, where integrating new and old systems can pose significant challenges.



IBM Migrate and Modernise to Cloud & Containers with Red Hat Addressing Business Needs

We work in partnership with you to understand your business needs, leveraging our deep industry and technical expertise, assets and approach delivering Digital ready solutions for a range of business requirements.

Hybrid Cloud can have significant benefits, however, it can come with complexity and concerns over integration, security and skills. IBM's Cloud Migration and Modernisation accelerates the creation of a future-ready business, reducing cost and resolving technical debt.

IBM provides the skills, methods and tooling to modernise legacy applications, help align IT with business requirements, reduce operating costs and free up capital for innovation and enhance the overall application security posture.



How do we Migrate to Cloud from a large complex legacy estate operating highly critical services?

Our clients often struggle with a lack of deep application knowledge, capabilities and tools which impacts their ability to successfully extract requirements, automate code analysis and implement a safe migration and modernisation plan. Regulatory & Compliance roadblocks can stand in the way of cloud goals. Data privacy concerns are holding back enterprises from unlocking the full potential of partnerships in Cloud.

IBM can help you to create your journey from legacy to cloud with a range of IBM's AI and market leading application modernisation tools such as ADDI, CAST, DevOps Commander, Red Hat Application Migration Toolkit, and Pathfinder. These tools are used to evaluate the application codebase and validate our client's IT/business landscape to co-create the most suitable Migration and Modernisation strategy.

Cloud security enablement based on industry leading practices, regulations, and compliances.

Our clients face challenges with scalability as the complexity of their application landscape prevents them from integrating old and new. Significant technical debt and complexity in landscape and inability to integrate & compose impacting speed of digital initiatives. This also results in ineffective leverage of data for insights etc.

IBM provides needed skills and demonstrates new ways of working by co-creating, co-executing and co-operating with client teams. Our modernisation approach can efficiently transform applications and data to enable customer-centric innovation and deliver exceptional client experiences.

IBM Migrate and Modernise to Cloud & Containers with Red Hat Service Definition

We provide a full migration and modernisation service that drives value from your journey to the cloud.

IBM Cloud Modernisation

In-depth analysis of applications at the code level reveals application dependencies and level of remediation needed. The results of this analysis along with any new business requirements are used to develop a detailed design of the modernised application. This is followed by required code conversion, remediation, and any development.

Modernisation Discovery informs the IBM Design Thinking workshops working with IT and the Business are used to identify opportunities for enhancement. Together this information is used to create detailed blueprints for the modernised application and execution plans.

IBM Cloud Migration

Migrating applications to modern cloud platforms consists of:

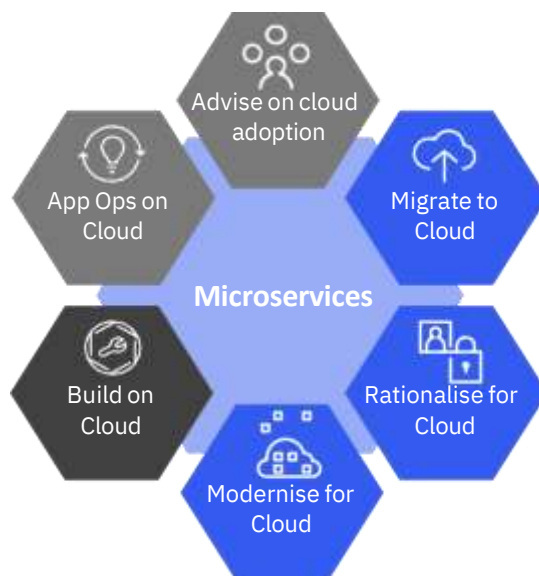
- Enabling them to run on current and supported operating platforms, middleware, and databases
- Redeploying them to the target cloud on OpenShift using a deployment pattern providing targeted performance

Each application is assessed in detail to determine changes that need to be made to prepare them for the new platform. An efficient factory approach is used to accelerate the migration execution using the IBM Garage Method for Cloud and the associated automation toolsets.

IBM Cloud Rationalisation

Rationalise for Cloud is the simplification of the application estate including data migration, archive and decommission at end of life, with an approach based on repeatable and scalable methods, tools and accelerators.

- Data migration – Moving the required data from source systems and securing this in the archive solution. This includes all ETL actions in addition to making the data and associated schema available for search and reporting capabilities.





- Archive and decommission at end of life – Defining the right archive strategy and solution in line with policies on Information Lifecycle Management to deliver cost benefits through application decommission and ending both licenses and contracts.

Power of Hybrid cloud + AI

In the race for business transformation, initiatives such as generative AI, sustainability and workforce upskilling are top-of-mind when seeking a strategic advantage. For development and deployment at enterprise scale, often the preferred engine of transformation is hybrid cloud.

IBM provides the skills, methods and tooling infused with AI to modernise applications, aligns IT with business requirements, reduces operating costs to free up capital for innovation and enhances the overall application security posture.

IBM Migrate and Modernise to Cloud & Containers with Red Hat IBM Approach

We bring the benefit of having worked with the world's largest organisations, transforming complex, critical services in a cloud agnostic way. Our approach is based on robust methods, processes and personalised engagement.

We focus on your business needs and developing trusted long-term relationships, underpinned by industry-leading experience and capabilities. To address the complexity within your portfolio, we have developed a framework comprising of Solution Patterns to drive consistency in our transformation approach.



Solution Patterns support the required migration and modernisation journey for complex workloads. For instance, Cloud Accelerator is a specialised asset for cloud transformation that provides most optimised modernisation path based on landing zone choices and business objectives (virtual machines (VMs), containers or native).

Cloud Accelerator enables clients to accelerate cloud transformation through pre-packaged, prescriptive solutions called Hybrid Cloud Journeys. These pre-packaged solutions that guide organisations through three patterns:

- Rehost
- Replatform
- Refactor

These journeys offer a framework with expert rules, assetised code, playbooks, and reference implementations to ensure consistent, predictable modernization outcomes.

IBM uses Migration Factory to modernise workloads safely and securely, with automation to accelerate and to reduce risk.

- Continuous discovery – Monitors for changes and schedule impacts and prioritisation
- Multicloud by design – Built on Red Hat OpenShift to enable you to move workloads
- Automation and orchestration – Accelerate and reduces risk, integrates DevSecOps
- Migration squads – Teams scale up to drive end to end migrations following a consistent method



IBM Migrate and Modernise to Cloud & Containers with Red Hat

Why IBM?

Experience

Major transformations to Multi-Cloud for Fortune 500 Companies to AWS, Azure, BlueMix, Google and Private Cloud built on Red Hat OpenShift

Complexity

Significant migrations performed with thousands of applications.

Expertise

Cloud consultants and experts globally with experience of IBM Cloud, Red hat, Open Shift, AWS, Azure, Google and more.

The principles of how we think and act in our delivery to clients include:

- Building long-term client relationships based on innovation, trust and service excellence
- Using Design Thinking and agile approaches to help frame and execute our client's change programs
- Infusing cognition and emerging technologies into our clients' enterprises and core processes
- Exploiting hybrid multi-cloud-based solutions to underpin evolving client processes
- Developing and deploying world-class talent
- Using consistent, modern methods and tools – constantly reviewing and refining to accelerate the value we deliver
- The ability to thrive and succeed in engagements driven by globally dispersed, multi-disciplined teams using our suite of collaboration tools is at our core.



IBM Migrate and Modernise to Cloud & Containers with Red Hat Innovation

Garage Method for Cloud

The IBM Garage Method for Cloud is a collection of practices and workflows that have been curated to help organisations rapidly design, build, deploy, and scale innovative solutions.

The Method uses Enterprise Design Thinking, Lean Startup, and agile DevOps concepts to enable continuous design, delivery, and validation of new functionality.

Containerisation

Containerisation enables the agility, scalability, and portability of workloads, resulting in speed and efficiency in the cloud transformation.

This innovation has delivered the following quantifiable benefits during a cloud migration for a leading UK Bank:

- Reduced remediation effort of application layer components – Reducing end-to-end migration timelines by up to 35%.
- Rapid application infrastructure scalability – Adding containers with minimal effort by replicating the application image across new VMs.
- Allowed portability across environments and cloud providers, minimal future remediation for infrastructure/framework currency – Speed and lower costs to upgrade infrastructure or change providers.

Garage Method for Cloud Toolkit

The IBM Garage Method for Cloud toolkit is a suite of integrated tools and assets with a scalable, flexible architecture supported by an analytics engine and automation that helps our clients accelerate their transformation journey to a multi-cloud environment.

This toolkit supports our client's cloud transformation journey by the acceleration of cloud adoption with automation for greater efficiency and deeper analytical insights for improved decision-making ability, delivering benefits such as:

- Up to 40% reduction in time and effort to process new sources of information.
- Up to 25% reduction in errors from manual activities related to migration.
- Up to 25% reduction in time and effort required for migration activities.

Migration Factories

Our Migration Factories provide a comprehensive design and delivery engine to drive cloud adoption that includes people, process, and tools. These services are constantly upgraded/updated based on the lessons learnt and include:

- A core set of services that help clients transform their applications and infrastructure to cloud.
- The more “common” services such as solution design, architecture, design thinking etc. are leveraged as appropriate for client delivery.
- Factory style operations services that are required to support client delivery. Talent & skill management, Capacity management and financial operations for example.

Modernise applications with hybrid cloud and AI

Organisations are investing in modernising their application portfolios. This means optimising business operating models with a hybrid cloud and AI to drive down cost, increase productivity and create opportunities for innovation.

Applying generative AI with code generation power can also enable hybrid cloud developers of all experience levels to migrate and modernize legacy application codes at scale to the new target platforms with code consistency, less error, and speed accelerating modernisation.

IBM Migrate and Modernise to Cloud & Containers with Red Hat

Value from Migration and Modernisation

Cloud migration can modernise your workflows, improve performance and reduce work for your system administrators. If you are undecided about moving your applications to the cloud, consider these benefits.



Agility

Offer IT resources on demand, providing users and business groups with what they need rapidly, without having to acquire and deploy new hardware.

Scalability

Why buy equipment to try to anticipate usage spikes? Cloud providers bill you only for the resources you use, so you can accommodate unexpected surges or seasonal usage patterns.

Cost control

Understand how your cloud costs are allocated and be able to manage and control them.

Cloud Agnostic

Building on Red Hat OpenShift allows you to be cloud agnostic and move your workloads onto the most appropriate cloud provider while also running the same capabilities in your own data centre.

Ease of Maintenance

Pushing updates to individual computers, patching servers and provisioning new hardware are expensive and time-consuming tasks. Free your IT administrators to work on bigger projects and leave the infrastructure maintenance to your cloud provider.

Security

Physical data centre security together with state-of-the-art software security measures help safeguard your data. You gain the flexibility to manage security levels and select among a variety of security options.

IBM Migrate and Modernise to Cloud & Containers with Red Hat

About IBM

Supporting Government

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 & Revenue Management
	National Infrastructure
	Social Care
	Education
	Work and Pensions

The problems we solve for clients are complex and cannot be

satisfied with technology alone. They require a partner that can also offer deep industry expertise and a relationship of trust.

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 where the impact of delivery has wide-reaching impact on citizens and national services.

We bring access to the 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 new 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

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**