

Unlocking innovation and business value for your financial institution

Drive end-to-end enterprise transformation
with an open hybrid cloud platform



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The opportunity

Modernize for impact with hybrid cloud

Rising customer expectations and increasing business competition present a challenging environment for today’s financial institutions. The imperative to continuously reinvent processes and fulfill customer needs, while increasing profitability and reducing costs, demands substantial transformation of operations.

Financial institutions require a stable yet flexible infrastructure—founded on hybrid cloud technologies—that increases portability, interoperability and consistency. Adopting a hybrid cloud strategy can help modernize processes and applications that generate value across all mediums.

Drive end-to-end enterprise transformation with hybrid cloud as the foundation.

According to a recent IBM Institute for Business Value (IBV) report, **hybrid cloud generates 2.5 times greater business value than a single cloud platform.**¹ The more hybrid cloud is tightly coupled with enterprise transformation, the greater the revenue impact of technology investments.

Furthermore, the revenue impact of cloud investments **can be amplified by up to 13 times** when executed in combination with other levers of business transformation.²

There is a multiplier effect on revenue growth by combining cloud investments with other transformative levers, such as:

- Enhanced data capabilities with AI and IoT for decision-making
- Refined operating models with improved processes, skills and cybersecurity
- Increased involvement in ecosystems, platforms and culture

For financial institutions in banking and financial markets, the potential value of cloud, when combined with other transformative levers, is **20 times greater than the value of cloud implemented alone.**³



Unify to remove barriers to innovation

Today’s competitive landscape requires financial institutions to reconsider and reinvigorate their IT strategy for improved connectivity, integration and differentiation. To successfully meet escalating market demands, these institutions must redesign their IT infrastructure to make the right data available to the right people at the right time, while assuring the highest standards of regulatory compliance and security.

Financial institutions also face additional challenges to creating business value while balancing the new currencies of speed and security:

These challenges—and their solutions—often start with data. And as a financial leader, you need your IT teams to have consistent and appropriate data access, no matter where the data resides.

We meet you wherever you are in your cloud journey

IBM’s [hybrid cloud strategy](#) is founded on the belief that you know your business and its capacity for transformation. IBM has provided computing services to financial institutions for over 100 years—since its inception in 1911. Today, IBM serves 93 of the top 100 banks in the world and is the first and only provider offering a public cloud specifically for financial institutions.

With our deep industry expertise, we understand your unique business and IT challenges and help you achieve them most efficiently. A fully customized approach creates tangible value that helps optimize your resources and improves time to market.

We also help your institution integrate your cloud and on-prem environments. You don’t have to replace what you have or rebuild from the ground up. Instead, our approach helps you:



Modernize
Modernize your applications and data, connecting and integrating them across a distributed hybrid cloud environment.



Optimize
Optimize your hybrid infrastructure with agility and flexibility across on-prem, cloud and multicloud environments to gain resiliency and reliability and support consistent data access from edge to cloud to core.



Secure
Protect your data and applications and mitigate risks. Keep your core workloads and data compliant, secure and resilient—spurring innovation.

79%

of banking executives emphasize four key building blocks toward a resilient hybrid cloud.⁴ These four building blocks are:

- Scalable data storage
- Minimal vendor lock-in
- Unified security control framework
- Accessible data and services

IBM’s open hybrid cloud approach is designed to create a single platform on which you can run applications and manage data. It integrates and connects across your hybrid, multicloud and on-prem IT environments. This paper includes examples of how your enterprise IT can realize the full value of an open hybrid cloud approach and enable innovation for greater business benefit.

[Explore how IBM’s hybrid cloud strategy has helped enterprises be more agile →](#)



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IBM and Red Hat

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Gain the control and flexibility your institution requires

Full-scale implementation and adoption of a hybrid cloud strategy will allow your financial institution to operate and integrate into any environment and orchestrate resources across those environments to speed time to value.

“Red Hat® OpenShift® reduces complexity, which makes it easier for the development team to innovate. It allows us to move faster than the traditional release cycle. That ability to move faster and prove or disprove what you’ve created allows innovation to fly. For us, that translates into being able to develop new products and get them to market faster.”

[A financial services study participant, IDC study: The Business Value of Red Hat OpenShift](#)

Central to IBM’s hybrid cloud strategy is a common, infrastructure-independent environment consisting of [Red Hat OpenShift](#) and [Red Hat Enterprise Linux®](#) platforms running on IBM Cloud® or the cloud of your choice.

Your financial institution can quickly adapt to new market conditions because of the increased flexibility and agility of IBM-optimized Red Hat platforms. You can then respond faster, resulting in improved time to value and an impactful ROI. Increased agility can also shorten development lifecycles, enabling your IT teams to innovate more.

According to an IDC white paper, Red Hat OpenShift drives:

20%
higher DevOps and development team productivity⁵

29%
faster application development lifecycles⁶

636%
five-year return on investment (ROI)⁷

Simplify your environment to innovate faster
Red Hat technology allows IT teams to work together while accommodating different deployment environments. You can build, deploy and run applications using native cloud services, such as managed Red Hat OpenShift. With full stack-automated operations, developers can access what they need at any time.

The open-source, managed environment from IBM and Red Hat can bring your cloud and on-prem data together and can simplify deployment to drive innovation. IBM and Red Hat provide tools and an open, flexible infrastructure to get all the benefits of IBM Cloud or the cloud of your choice.

For IT teams seeking to build cloud-native applications but lacking Kubernetes skills, Red Hat OpenShift and IBM Cloud Code Engine provide an ideal development environment.

The Masters make every shot count with IBM and Red Hat

IBM powered The Masters Tournament using an open hybrid cloud approach enabled by Red Hat OpenShift. IBM was able to manage the data while boosting efficiency. The flexibility and hyperscalability of Red Hat OpenShift, deployed on the Red Hat Enterprise Linux operating system, enabled the tournament’s computing platform and fan-engagement apps like My Group to operate consistently across environments.

The tournament provided personalized video feeds, highlights and regular updates to golf fans worldwide. Every shot mattered, and IBM and Red Hat were behind the scenes and ensured fans did not miss a single swing.

[Learn how IBM and Red Hat drove fan engagement to new heights →](#)



03

IBM's open hybrid cloud approach

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Open is the cornerstone of a financial institution’s hybrid cloud strategy

With a hybrid cloud model based on the Red Hat open-source platform, financial institutions can follow a “fit for purpose” approach that leverages existing technology investments and systems to optimize resources and improve time to market.

80%

of IT leaders, including those from financial services, expect to increase their use of enterprise open-source software for emerging technologies.⁸

“We don’t want to be tied to any single cloud provider, and we want to be able to flexibly deploy solutions across different cloud platforms and move applications between them... Red Hat OpenShift was the most mature platform and had all of the capabilities we were looking for.”

A financial services study participant, IDC study: The Business Value of Red Hat OpenShift

IBM and Red Hat’s deep engagement in open-source communities combined with leading technology and industry expertise enables an open, hybrid multicloud environment. Based on Red Hat Enterprise Linux and Red Hat OpenShift, our hybrid cloud approach includes a model that bridges platforms to create a unified experience for your users and customers. With a shared foundation, cloud deployments are faster and more reliable.

IBM is also contributing key elements of its intellectual property to the open-source community through participation in projects such as Linux, Eclipse and Kubernetes. IBM with Red Hat offers an open, top-to-bottom hybrid cloud stack—from infrastructure to software to consulting.

One of Banco Sabadell’s first steps was to select **IBM** to help expand and manage its banking-as-a-service model and continue innovating its digital solutions and services.

Enable standardized IT through our open architecture.

You can use Red Hat OpenShift to create a standardized environment for workload portability, orchestration and management of all cloud deployments: public clouds such as IBM Cloud, private clouds and on-prem environments, and at the edge. On this shared infrastructure, you can build, deploy and manage applications and automate tasks at enterprise scale. IBM’s entire cloud-native software portfolio is optimized to run on the open hybrid cloud platform.

CaixaBank banks on automation

CaixaBank is a Spanish multinational financial services company. With 35,000 employees, it was challenging for CaixaBank to manage around 400 processes with more than 2000 users. It looked for ways to automate core processes, centralize back offices, and improve customer service.

CaixaBank collaborated with IBM and automated processes using IBM Business Automation Workflow. Intelligent automation solutions from IBM helped CaixaBank gain insights into its operations.

“Process automation allows us to obtain a lot of information about the task that we are doing and how we are doing and why we are doing this task. And this information is used by us to improve this process.”

Ramon Aliaga Ugarte, Director of IT Process Automation, CaixaBank

[Learn more about CaixaBank’s automation journey →](#)

Engage with experts to accelerate your transformation.

The technology experts working within the IBM Garage™ service model can help you accelerate your digital transformation. IBM Garage empowers your team to take manageable risks, speed up product development and measure the value of everything you do. With a smaller investment, you get support that helps you generate innovative ideas and equips you with the practices, technologies and expertise to turn those ideas into business value.

[Learn how IBM Garage is applied to the four pillars of IBM Consulting™ →](#)

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Modernize

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Modernize your financial institution’s applications and data for a connected and integrated hybrid cloud environment

An open but resilient and secure infrastructure is essential for modernizing financial operations and enabling growth—without sacrificing data security and compliance.

Deploying applications through a hybrid cloud interface will allow your financial institution to maximize its application modernization efforts and select the path most suitable for your critical workloads.

An infrastructure based on an open hybrid cloud strategy lets you modernize mission-critical applications while building new, cloud-native applications. Cloud-native applications can then evolve at the pace of the business and can quickly respond to changing market and customer demands. When you invest in cloud-native applications, you can

expect a consistent development experience with the rapid deployment of a new function. In managing a hybrid multicloud environment, you need consistency across private clouds, public clouds and on-prem infrastructure. IBM and Red Hat enable new cloud-native applications to be built once, deployed anywhere and remain connected to existing data and applications. As a result, you experience advantages, such as flexibility of workload placement, the agility of delivering new business value, and common DevOps skills across the enterprise.

Accelerate development without the need to skill up

Red Hat OpenShift and [IBM Cloud Pak®](#) are supported across your on-prem, virtualized and cloud environments. Red Hat OpenShift provides a consistent foundation for building, deploying and managing applications across the hybrid cloud environment. IBM Cloud Pak employs AI technology to accelerate application modernization with pre-integrated data, automation and security capabilities.

We also offer a spectrum of modernization options to make your applications cloud-native. Whether you want to migrate existing applications to the cloud or integrate your on-prem and cloud infrastructure, we have the tools to help you create a connected and integrated hybrid cloud environment.



Banco Sabadell has migrated its applications to **IBM Cloud** and deployed workloads on both virtual machines and IBM Cloud bare metal servers.

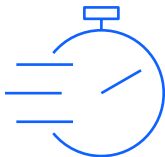
IBM and Red Hat are open and vendor-agnostic. We deliver strategic flexibility that allows you to adapt to changing business needs. You can optimize your application modernization efforts by selecting the path most suitable to your workload. The combined power of IBM and Red Hat helps you in performing the following activities:



Modernizing applications to make them easier to build and maintain



Supporting the portability of workloads across multiple clouds and systems to protect investments



Accelerating the delivery of high-impact business processes on a more secure and scalable platform

EBank uses integration and automation to expand its business

The Export Development Bank of Egypt (EBank) wanted to expand into retail banking. Furthermore, EBank wanted to use digital technology to make an impact on the market and offer the best in 21st century banking to its customers. Previously EBank had relied on point-to-point integrations between legacy solutions, and this architecture could not support the agility that new digital services would demand.

With help from IBM Business Partner Sumerge, EBank built a containerized API integration layer, using IBM Cloud Pak for Integration and the Red Hat OpenShift container platform, to connect its corporate and retail business channels and partners with its core banking and other banking systems. The bank also used the IBM solution to build a full Automatic Clearing House (ACH) remittance flow over the integration layer, unifying integration requirements and enabling rapid, secure connectivity between all applications in a heterogeneous environment.

[Learn more about EBank's transformation journey →](#)

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Optimize

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Optimize enterprise infrastructure for reliable storage across distributed environments

A modern hybrid cloud approach focused on interoperability, standards and componentization allows financial institutions to scale and optimize their overall IT investment. They can adopt a flexible banking-as-a-service and payments-as-a-service model and can respond more nimbly to fluctuating business needs and demands as well as any security concerns.

On-prem infrastructure is a critical part of most enterprises’ IT architectures. With IBM and Red Hat, your on-prem infrastructure can be used and managed as efficiently as the public cloud. You can create an on-prem infrastructure in the image of cloud by balancing your existing IT infrastructure and clouds for greater reliability and resiliency.

Furthermore, by adopting an energy-efficient approach, you can play an essential role in reducing your institution’s carbon footprint.

Increase capacity as your needs fluctuate
At IBM, we offer a flexible as-a-service consumption model. You can leverage it to pay only for what you use while comfortably scaling resources during periods of fluctuation and responding to spikes in demand.

PNC Bank delivers an integrated and unified experience
PNC Bank wanted to reduce multiple systems complexity and attract new customers through streamlined experiences. It employed a data-first approach to an event-driven architecture where data can be sourced in real time from across systems.

In this new scenario, customer interactions streamed into the platform, regardless of the channel. The bank could provide an integrated and unified experience to build and maintain customers’ trust.

This next-generation, data-first architecture was made possible by a hybrid cloud approach based on a highly scalable and reliable platform-as-a-service model. PNC Bank modernized its applications and created cloud-native development environments with its critical data stored in a security-rich, private cloud.

[Learn more about how PNC Bank transformed its core process →](#)

IBM’s hybrid cloud approach helps you establish a consistent storage solution across distributed computing environments. You can manage your hybrid storage resources wherever they reside—on premises, in a public or private cloud, or at the edge.



Efficient use of resources supports sustainability

For many financial institutions, aligning sustainability goals to organizational and regulatory compliance goals is a top priority. By using assets and facilities more efficiently, institutions can begin operationalizing sustainability into their IT practices.

The energy consumed in a data center can affect the environment adversely. Hence, it's essential to make your on-prem servers more energy efficient. By taking this step, you can optimize your IT infrastructure and reduce the overall carbon footprint. Building an energy-efficient infrastructure is a priority for enterprises committed to simplifying IT, driving cost efficiency, and supporting environmental sustainability.

Two of IBM's most relied upon platforms, IBM Power® and IBM z Systems®, provide the scalability and efficiency you need

from on-prem architectures. This enables server consolidation and more efficient use of resources. An IBM z16™ can reduce the CO2e footprint by approximately 75% each year compared to x86 servers running the same Linux workloads under similar conditions. This is the equivalent of taking approximately 37 gas-powered vehicles off the road annually.⁹

In relation to building a sustainable IT infrastructure, IBV conducted a study that included around 300 banking and financial market executives in 40 countries. According to the survey, 76% of executives felt pressure from board members to increase transparency around sustainability.

59% of executives felt pressure from the investor community to build a transparent, sustainable IT infrastructure. However, the most important fact was that 80% of executives believed sustainability investments would improve business results in the next five years.¹⁰



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Secure

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Speed innovation while addressing your regulatory compliance and security needs

Improve your security and compliance posture

A primary challenge for financial institutions is to rapidly adopt the cloud framework for competitive advantage—without compromising security and regulatory compliance. To address growing cybersecurity risk and regulatory complexity, financial institutions require a cloud platform that helps them innovate while keeping their data and applications secure and compliant.

We have built [IBM Cloud for Financial Services®](#), a first-of-its-kind public cloud platform specifically developed for the industry with built-in security and controls. It helps clients protect data, mitigate risks and accelerate cloud adoption for even the most sensitive and mission-critical workloads. To ensure compliance with industry

requirements, regulations and standards, platform development is guided through collaboration with major financial institutions. IBM Cloud for Financial Services clients can enhance their security and compliance posture with industry-specific capabilities built into the cloud platform—not offered as add-on tools or do-it-yourself features. They can protect sensitive data—at rest, in transit, and in use. This includes Keep Your Own Key (KYOK) encryption that gives clients exclusive control of their data, which not even IBM can access.

IBM Cloud for Financial Services is strengthened by deep IT operations knowledge, industry expertise, and a rich ecosystem of partners. The result is a secure environment that helps financial institutions perform the following activities:

- Lower the risk and cost of moving sensitive data to the cloud
- Modernize workloads
- Integrate the capabilities needed to move the business forward

Utilizing the IBM Cloud for Financial Services platform, your financial institution can take advantage of the benefits of the public cloud while addressing cybersecurity and regulatory compliance requirements. There is no dilemma of choosing between innovation and risk management.

[Explore IBM Cloud for Financial Services →](#)

A leading insurance provider in Europe uses a full stack of Red Hat technology to support its cloud strategy, which incorporates multiple public cloud vendors. Red Hat OpenShift allows the company to comply with local financial regulatory requirements while staying flexible to minimize migration efforts if there is a need to change one of the public cloud vendors. The Red Hat foundation helps the insurance provider accelerate software development, boost employee productivity, and improve financial transparency and business agility.

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Take the next step

Maximize the value of your investments with a single, integrated platform

IBM and Red Hat offer a compelling combination of strategy, technology and skills that helps build an effective and innovative open [hybrid cloud strategy](#). Integrating cloud and on-prem infrastructure in a single platform leads to simple, frictionless interoperability and enables IT leaders to maximize the business value of infrastructure investments.

[Kick-start your financial institution's open hybrid cloud journey with the help of IBM expertise](#). See how our hybrid cloud approach creates efficiencies to enable your team to innovate with speed and agility. Working with

IBM advisors can help you prioritize your focus area—modernizing applications, optimizing the infrastructure or protecting regulated data and applications. With IBM and Red Hat, you can completely control your institution's transformation, regardless of the path you choose.

[Learn More →](#)



^{1, 2, 3} [Unlock the business value of hybrid cloud](#),
IBM Institute for Business Value,
Jul 2021

⁴ [Foundations of banking excellence](#),
IBM Institute for Business Value/BIAN,
Oct 2022

^{5, 6, 7} [The Business Value of Red Hat OpenShift](#),
IDC, Mar 2021

⁸ [The State of Enterprise Open Source:
A Red Hat report](#), Feb 2022

⁹ [Greenhouse Gas Equivalencies Calculator](#),
United States Environmental Protection Agency,
Mar 2022

¹⁰ [Foundations of banking excellence](#),
IBM Institute for Business Value/BIAN,
Oct 2022

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