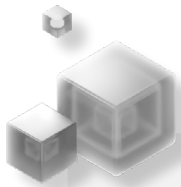




# Modern virtualization

New paths forward for  
financial services



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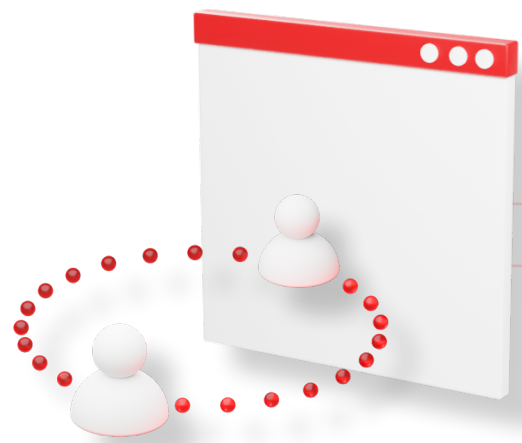
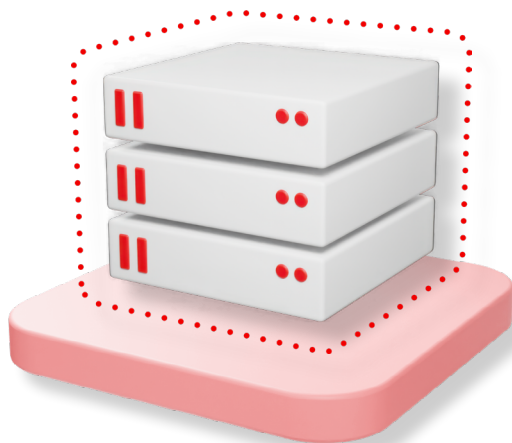
# Beyond virtualization: A new model for financial services

Many financial institutions are contemplating migrating virtual machines (VMs) from their current platforms to modern ones, for many reasons. The escalating subscription costs of existing VM strategies with in-place vendors, combined with the need to modernize infrastructure to support cloud-native applications, adds burden to IT budgets, prompting the need for cost-effective alternatives. Over the last 10 years, the infrastructure of distinctive platforms for legacy VMs and containers has evolved, leading to duplication of many operational functions, including resource allocation, automation, and security management.

Moreover, banking, insurance, and wealth management organizations continue to face the unique challenge of needing to adhere to regulatory oversight and mandates while also keeping pace with an ever-accelerating environment in which flexible technology solutions must be adopted to maintain a competitive advantage. They have long used VMs, and now, like other industries, are evaluating cloud infrastructure strategies that incorporate both VMs and application development. They are seeking cost savings, improved DevOps, and scalability, viewing new cloud infrastructure strategies as an opportunity to migrate and modernize.

Red Hat can help financial institutions accelerate their virtualization and modernization strategies with trusted enterprise solutions. [Red Hat® OpenShift® Virtualization](#), an included feature of Red Hat OpenShift, simplifies migration and management of VMs onto a comprehensive hybrid cloud application platform, and offers a path to a modernization.

In this e-book, we'll explore benefits of a reimagined virtualization solution for financial institutions, migration and modernization success stories from Red Hat customers, and how to unlock your own path to success with solutions and support from Red Hat.



## Benefits of a reimagined virtualization solution

### Cost efficiency

- Simplified VM, container, and serverless management with a single interface.
- A shared storage stack for backup and maintenance processes.
- Shared monitoring and networking capabilities.
- Support for new microservice, event, and AI-powered applications in containers alongside traditional virtualized applications.
- Consistent policy, resource, and security management across all applications.

### Revenue growth

- Scaling advantages of Kubernetes for VMs using the same tools and pipelines.
- Streamlined application delivery with a platform supporting self-service and continuous integration and continuous delivery (CI/CD) integrations.
- Integration of VMs with development pipelines using application programming interfaces (APIs).

## Virtualization and modernization yield immediate and long-term value

### Red Hat solutions can help:

- Streamline management of VMs and containers, reducing complexity and enhancing adaptability.
- Limit skill sprawl by mastering a single administration framework with Red Hat OpenShift.
- Boost current and future integration flexibility and strengthen your security posture while avoiding vendor lock-in.



# Simplify, consolidate, and modernize: Customer success in action

## A leading U.S. bank unlocks cost and time savings

Our customer, a top U.S. bank, needed to simplify the complexities associated with managing a broad range of tools and over 700 applications. The customer also wanted to implement a hybrid cloud modernization strategy focused on moving its applications and development to a CI/CD pipeline, while maximizing a virtualization solution.

Working with Red Hat to develop and implement a strategic path forward, the customer was able to enact a nondisruptive migration plan for thousands of VMs, and conduct a thorough review of a proposed architecture to realize modernization benefits. Key considerations were made to include on-premise and cloud environments, to maximize the advantages of a transformed managed application platform.

The overall customer solution included:

- The adoption of a virtualization approach with Red Hat OpenShift, allowing the management of containers, registries, and virtual environments on a single platform, using either Red Hat Enterprise Linux® or Microsoft Windows.
- The use of Red Hat application toolkits to assist in modernizing applications and aiding the migration to containerization.
- The consolidation of software packages ([Red Hat OpenShift Platform Plus](#) and [Red Hat OpenShift Data Foundation](#)).

With Red Hat OpenShift as the foundation, the customer is able to take advantage of other Red Hat products, including Red Hat Ansible® Automation Platform, without the need for separate licenses. They can also access other, complementary third-party tools available for use with the Red Hat OpenShift platform.



### Benefits gained:

- Modernization and migration of thousands of VMs to Red Hat OpenShift, and conversion of monolithic services into microservices.
- Ability to realize cost savings by repurposing hardware.
- Avoidance of vendor lock-in by maximizing flexibility and choice as market demands evolve.



We could automate our VM migration with our own internal development Python application leveraging APIs, but with Red Hat's migration toolkit we have a very streamlined process."

Enterprise System Engineer,  
North American Financial Institution



## A large global investment bank improves its operational lifecycle

Our customer, a large U.S.-based investment bank with a global reach, recognized the potential benefits of OpenShift Virtualization to help maintain application and operational availability, while building a competitive advantage.

Already a user of many solutions in the Red Hat portfolio, the customer undertook a multiyear effort to engineer a solution that was implemented in its full-scale production environments, working closely with Red Hat teams across multiple business units.

Like many financial institutions reliant on VMs, the customer was already focused on migrating its VMs into Kubernetes environments to allow for efficient integration of virtualization with modern cloud-native architectures. This transition was especially appealing because of its ability to inherit many features and functions from Kubernetes, including scheduling, high availability, and the capability to attach or detach IT resources.

The overall customer solution included:

- The replacement of 36,000 physical hypervisors with OpenShift Virtualization over a 3-year period.
- Approximately 6,000 running network desktop services facilitated by Windows VMs.
- About 30,000 running stateless Red Hat Enterprise Linux VMs, with 3,000 servers dedicated to traditional Kubernetes container application multitenant use cases.

Benefits gained:

- Critically designated application availability with the benefits of a cloud-native environment, achieved through an improved operational lifecycle.
- Live Red Hat OpenShift upgrades with minimal effects on application availability through the use of OpenShift Data Foundation.



... it allowed folks who spent the last decade or so on existing technologies to help drive to create a single solution where we deploy one set of capacity and they burn down that capacity, whether it becomes a VM or it becomes a container ..."

VP Tech Fellow, Global Investment Bank



# Migration to modernization with Red Hat

Banks and other financial services firms need a virtualization platform that is cost effective, intuitive, and supports automated management while avoiding being wholly dependent on a single vendor. They must uphold exceptional levels of security, comply with numerous regulations, and deliver outstanding user experiences while managing licensing costs to make sure the deployment and management of virtual environments is sustainable.

Red Hat delivers proven results for customers in the banking and financial services industry, demonstrating an understanding and ability to adapt its solutions to the industry sector's unique and complex requirements. Selecting a new virtualization platform that contains familiar features that work with your preferred hardware and storage infrastructure is essential to minimize unnecessary effort and staff demands.



## Start with a Red Hat Virtualization Migration Assessment

Red Hat Consulting offers a structured approach for VM infrastructure migrations, well-suited to the unique needs of the financial services sector. The [Red Hat Virtualization Migration Assessment](#) helps you understand, plan, and create a strategic path for migrating VMs from traditional virtualization providers, and accelerating cloud-native modernization when you're ready.

Working alongside your teams, [Red Hat Consulting](#) will assess your current environment and gather requirements. Red Hat architects will then analyze infrastructure and workload complexities to create a customized migration plan you can feel confident in. The final deliverable is a high-level design solution and roadmap detailing pilot priorities and outlining an efficient approach for a migration factory and optional modernization.



# Accelerate your journey with Red Hat's partner ecosystem

Implementing new virtualization infrastructure can be daunting, but you don't have to do it alone.

To maximize the effectiveness of this initiative, a collaborative approach can be highly valuable, delivering flexibility and confidence—especially applicable in the banking and financial services industries.

Red Hat's comprehensive [partner ecosystem](#) provides tested, proven solutions that integrate with Red Hat OpenShift and Red Hat OpenShift Virtualization to help you accelerate success and remain future-focused. Certified [independent software vendors \(ISV\) and original equipment manufacturer \(OEM\) partners](#) offer expertise and solutions in storage, networking, backup, and additional focus areas to extend and enhance the capabilities of Red Hat solutions.

Through access to specialized solutions and services without vendor lock-in, you can tailor your platform without sacrificing flexibility. Whether your goal is a VM migration or a broader, more strategically focused modernization effort, working with Red Hat partners can help you continue using preferred technologies while adopting compatible solutions that help:

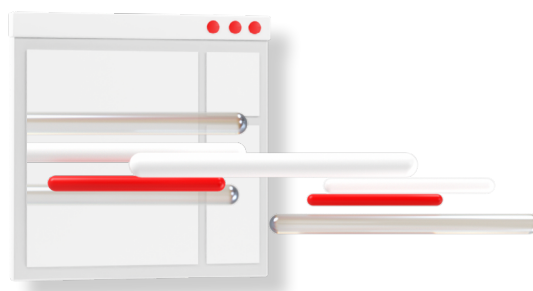
- **Streamline VM migration.** Find support for a range of migration needs, including storage, backup, and recovery.
- **Modernize infrastructure and applications.** Get help with modernization of VM-based applications and support on the pathway to infrastructure and application modernization.
- **Reduce integration and management complexity.** Access expertise and support to simplify the integration and management of the virtualization platform.
- **Boost deployment efficiency.** Accelerate workload deployment and management for both VMs and containers on an efficient and effective virtualization platform.

By engaging experts and solution providers skilled in Red Hat technologies, you can save time and money by applying best practices from the start, and avoid or mitigate challenges such as:

- Lack of in-place staff skills.
- Transition costs.
- Misalignment with IT governance, compliance, and security requirements.
- Lack of integration with existing technology investments.
- Need to outsource expertise to accomplish the transition.
- Operational effects of a new virtualization platform on critical business applications.
- Slowed pace of innovation.
- Changes to tooling used by developer teams.

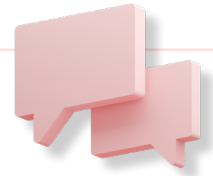
Red Hat and its certified ecosystem partners can help chart the best path forward to meet your goals and optimize your technology investments in traditional virtualization, hardware, storage, backup, disaster recovery, networking, and security.

Learn more about how [Red Hat partners can help meet your VM platform needs](#).





# Get started



Without seeking virtualization alternatives and modernization platforms—and maintaining present platforms—banks and financial services firms risk complexity, slowed innovation, and unpredictable and increasing costs. It's critical that the right technology is selected to meet both present and future demands, helping you prepare for modernization and to adopt new technologies like AI that can help you further differentiate your products and services and strengthen your competitive advantage.

## Red Hat brings virtualization choice and confidence with minimal disruption

With a [proven track record](#) of helping customers in the banking and financial services industry meet their business goals, Red Hat can be a trusted virtualization partner, helping you navigate migration and prepare for modernization.

Red Hat's value proposition is centered on:

- Proven virtualization technology.
- Demonstrated customer success.
- A diverse ecosystem of integrated partner solutions.
- Strategy-based migration to a future-ready platform.

## Additional resources

Migration and modernization efforts of virtualization platforms give organizations in the financial services sector an opportunity to rehost existing applications onto new open source technologies, avoiding chaotic cost uncertainty, gaining modern skills, and accessing developer tooling that increases productivity. With industry pressure accelerating, incrementally upgrading environments and applications is a necessity to maintain improved functionality and outperform competitors.

To learn more about Red Hat's approach and solutions that can support your virtualization journey, please explore the following resources:

- ▶ **Start your journey with the [Red Hat Virtual Migration Assessment](#)**
- ▶ **Discover the [Red Hat portfolio of virtualization solutions and services](#)**
- ▶ **Learn more about how Red Hat works with [financial services](#)**

