(intel®)

Red Hat* Private Cloud Solutions Help Enable Rapid Innovation

With on-demand services, unified management, and interoperability, IT organizations can optimize infrastructure, efficiently utilize resources, and speed time-to-market

This solution brief describes how to solve business challenges through investment in innovative technologies.

If you are responsible for...

- **Business strategy:** You will better understand how a Red Hat* private cloud solution will enable you to successfully meet your business outcomes.
- **Technology decisions:** You will learn how a Red Hat* private cloud solution works to deliver IT and business value.

Executive Summary

Imagine a cloud solution that overcomes the challenges of vendor-specific technology, multiple hardware solutions, incompatibility with new and innovative solutions, and the high cost of maintaining legacy systems. What if this solution could bring rapidly changing technology and new innovations within reach, and also enable businesses to gain and maintain a competitive advantage by freeing themselves from the burden of existing IT infrastructure and purpose-built systems that stifle innovation?

Red Hat* private cloud solutions, built on Intel® technology, offer on-demand services, efficient resource allocation, unified management, and interoperability for scalability, security, and innovation. These benefits can empower businesses to achieve rapid innovation and improve time-to-market (TTM) while helping to lower operational expenses.
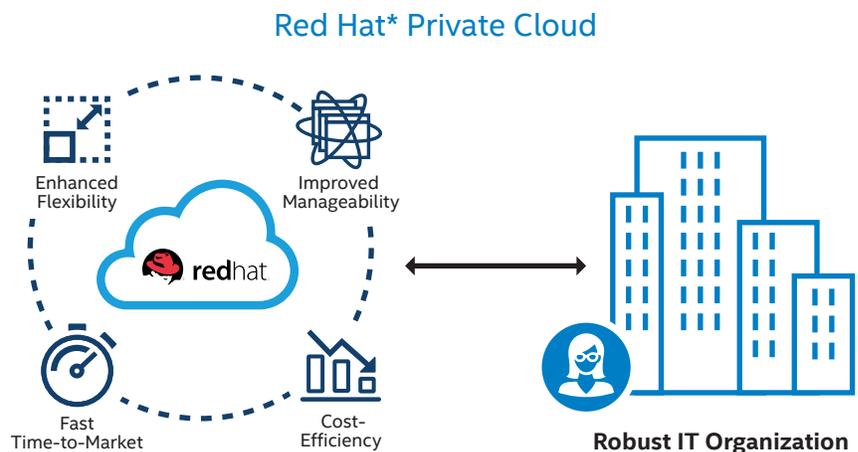

Figure 1. With Red Hat* private cloud, IT organizations gain rapid innovation, greater manageability, and cost-efficiency.

Solution Benefits

IT organizations with existing resources can do more while helping to reduce costs with Red Hat. Built with security-focused, reliable Intel® technology, Red Hat's private cloud solution offers the following benefits:

- Flexibility
- Agility
- Manageability
- Cost-efficiency

Business Challenge: Legacy Infrastructure Impedes Scalability

In a constantly changing, technology-focused landscape, businesses with existing IT systems need new strategies to maintain rapid responsiveness. But outdated, costly infrastructure may not be able to keep up with business needs, leading to bottlenecks and an imbalance in utilization. These businesses face challenges in the following areas:

- **Increased cost.** Existing infrastructure that was installed to meet a single purpose can lock organizations into vendor-specific technology, which is often costly to maintain.
- **Reduced scalability.** Multiple existing hardware solutions are often unable to cope with the increasingly rapid changes in technology, leaving businesses with utilization problems that prevent scalability.
- **Poor flexibility.** Existing infrastructure is often proprietary and not compatible with new and innovative solutions, preventing interoperability.
- **Higher total cost of ownership (TCO).** Maintaining legacy systems can be costly, and businesses may miss opportunities to optimize solutions that can help to lower costs over the life of a solution.

The challenges of meeting today's needs, including security and compliance requirements, require new strategies for reducing expenses, achieving service levels, and improving time-to-market (TTM). A Red Hat private cloud solution can help organizations gain scalability and agility.

Internet Service Provider Helps to Reduce Total Cost of Ownership

MyRepublic* provides ultra-fast fiber broadband. Customers choose MyRepublic for its reliability in delivering a consistent, predictable user experience regardless of the application. For example, MyRepublic needed to scale applications across multiple hardware implementations to meet the growing demands of its customers, but fragmented legacy infrastructure was impeding flexibility. MyRepublic also wanted to optimize resources and reduce utilization imbalances, improve system administration, reduce downtime, and improve TTM.

MyRepublic migrated to a unified private cloud using an OpenStack* Platform, supported by Red Hat CloudForms* and Red Hat Gluster Storage*. As a result, MyRepublic has cut TTM

for new services, simplified management, improved availability, and helped substantially reduce hardware costs and TCO.

Solution Value: Do More for Less with Flexible Solutions

IT organizations need the infrastructure to be efficient and scale as needed. Red Hat's private cloud solution provides excellent scalability and security, and gives IT the tools for rapid innovation. For organizations that have reached the limits of traditional infrastructure, Red Hat's private cloud solution can help reduce costs and complexity with on-demand services, unified management, efficient resource allocation, and interoperability.

Built with Intel® technology, Red Hat's private cloud solution offers the following benefits:

- **Flexibility.** Red Hat provides IT organizations with the ability to build, broker, and automate services with improved scalability, while keeping options open to new and innovative technology.
- **Agility.** Businesses need fast solutions, and they often turn to unapproved services (shadow IT) when IT is unable to meet the demand. Automated provisioning through Red Hat helps IT organizations speed innovation and eliminate shadow IT.
- **Manageability.** Multiple segregated systems, applications, and workloads lead to complex integration issues and reduced visibility. Red Hat gives IT organizations the tools for greater visibility, improved governance, optimization, and more control and configuration of workloads.
- **Cost-efficiency.** By speeding IT service delivery and increasing efficiency of cloud management, IT organizations can use existing infrastructure and a broader selection of solutions to help reduce overall costs and improve forecasting of operational expenses.

Private clouds eliminate vendor lock-in, provide on-demand storage and computing, and significantly reduce workload bottlenecks. By effectively using on-premises equipment with higher-than-average utilization, private clouds offer better returns on investment. And the vast community of open source developers offers more choices for solutions and services, increasing interoperability.

Solution Architecture: High Performance without Compromising Security

Red Hat relies on Intel technology for its high performance and focus on security. Intel's open source ecosystem also brings outstanding collaboration and innovation to software-

REDUCE RESOURCE TIME

Our customers saved 25-30 person hours per provisioned workload with Red Hat CloudForms*, translating to USD 2.5 million per year savings.[1]

defined infrastructure with hundreds of new solutions that meet standards for interoperability. Red Hat's private cloud solution, powered by Intel technology, offers scalability and flexibility (see Figure 2).

Intel's approach to software and hardware design enables private cloud solutions to provide these benefits:

- **Security.** Intel® Trusted Execution Technology (Intel® TXT) provides cloud operators with automated security and compliance monitoring. Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) accelerates encryption and decryption algorithms. Intel® Secure Key helps reduce vulnerability to sophisticated cyberattacks.
- **Performance.** Intel® Xeon® processor family and Intel® Ethernet Gigabit Server Adapters deliver reliable, high-performance network, compute, and storage capabilities for virtualized environments.
- **Scalability.** Intel® Solid State Drives (Intel® SSDs) deliver high-performance and stable reliability for data storage; Intel Xeon processors improve high-performance computing; and Intel® Resource Director Technology (Intel® RDT) brings new levels of visibility and control over how shared resources such as last-level cache (LLC) and memory bandwidth are used by applications, virtual machines (VMs), and containers.

Red Hat helps IT organizations meet business needs quickly, with greater visibility and efficient management.

Conclusion

In the rapidly changing technology landscape, existing IT systems can slow innovation and lock businesses into proprietary platforms. Businesses must implement new strategies that build on existing systems while providing interoperability, increased speed, and more choices.

Red Hat's private cloud solution can provide the benefits businesses demand, as well as the scalability and enhanced security IT organizations seek. On-demand services, efficient resource allocation, interoperability, and unified management are attainable with Red Hat's private cloud solution.

Find the solution that is right for your organization. Contact your Intel representative or visit **intel.com/cloud.**

Solution Provided By:

Red Hat* Private Cloud

Software Solutions
Orchestration Tools

Red Hat* Cloud Platform

Red Hat Gluster Storage	Red Hat Enterprise Clustering and Storage Management	Red Hat CloudForms*	Red Hat Virtualization	Red Hat OpenStack Admin

Hypervisor
Linux*

Built on Intel® Technology

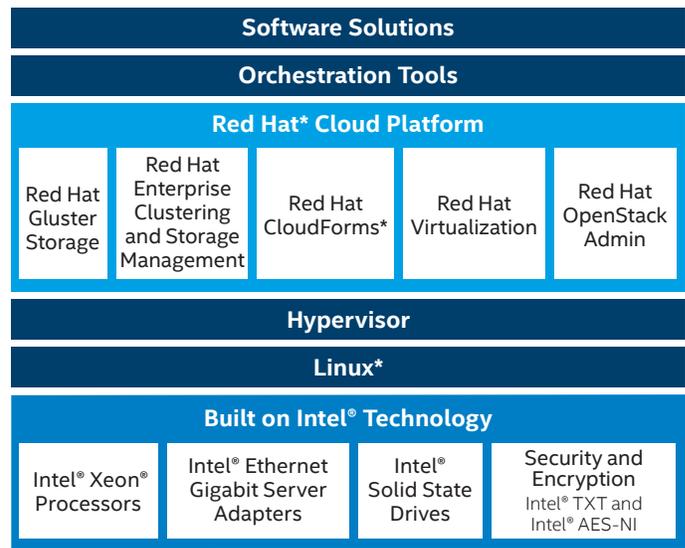| Intel® Xeon® Processors	Intel® Ethernet Gigabit Server Adapters	Intel® Solid State Drives	Security and Encryption Intel® TXT and Intel® AES-NI

Figure 2. Powered by Intel® technology, the Red Hat* private cloud solution offers excellent security, scalability, and flexibility.

Focus on Red Hat*

Red Hat is a leading open source solutions provider headquartered in Raleigh, NC with locations spanning the globe. Red Hat is leading Linux* and open source solutions with accessible high-quality, low-cost technology by providing an operating system platform, Red Hat Enterprise Linux, along with applications, management, and middleware solutions. Red Hat is accelerating the shift to service-oriented architectures and enabling the next generation of web-enabled applications running on a low-cost, security-focused, open source platform. Red Hat also offers support, training, and consulting services worldwide through top-tier partnerships. Red Hat's open source strategy offers customers a long-term plan for building infrastructures that take advantage of open source technologies with a focus on security and ease of management.

Learn More

You may also find the following resources useful:

- Red Hat Cloud Computing
- Cloud Solutions Deliver Flexible Choices for Improving Innovation and Capabilities solution brief (ask your Intel Representative)