# CIOs HARNESS DATA'S POTENTIAL WITH RED HAT STORAGE

TECHNOLOGY OVERVIEW

*"The Cornell Center for Advanced Computing (CAC) uses Red Hat Storage to support our Institute of Biotechnology and Life Science Technologies. We needed a storage platform robust enough to handle data produced by Genomics, Proteomics, and Imaging technologies. With Red Hat Storage, we have gained a highly scalable, reliable storage solution that has allowed us to adapt to our growing IT needs while remaining cost-effective."*

JANES VANEE
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## INTRODUCTION

A key part of the CIO role is laying the foundation for the next generation of enterprise business growth – achieved today through data. Data-driven organizations are increasing innovation and improving financial performance. Organizations that house terabytes of data in segmented, monolithic storage systems, however, are failing to benefit fully from technology innovations such as big data analytics, mobile data, and social media.

To fully harness the potential of enterprise data, CIOs must create a unified, highly reliable, and scalable information platform that simplifies data access and integration throughout the enterprise. Red Hat® Storage – which includes Red Hat Ceph Storage and Red Hat Gluster Storage – helps enterprises easily manage big, unstructured, and semistructured data in physical, virtual, and cloud environments to achieve benefits such as increased competitiveness, improved performance, and reduced costs.

## DATA-DRIVEN BUSINESS PRACTICES FOSTER GROWTH AND INNOVATION

CIOs who embraced data-driven business practices just a few years ago are now seeing significant top-line improvements for their businesses, driven by greater profitability, higher customer conversion, and more innovative product development. Data-driven companies across multiple industries are leading innovation and outperforming competitors.

A McKinsey Global Institute report[1] cites a number of examples of the organizations taking advantage of the potential of enterprise data:

- Amazon uses big data analytics for its recommendation engine.
- Harrah's compiles detailed, holistic customer profiles to tailor marketing and increase customer loyalty.
- Progressive Insurance and Capital One segment customers to tailor product offerings.
- Walmart mines petabytes of customer data on preferences and buying behavior, helping the company obtain pricing and distribution concessions from consumer product goods companies.
- BMW's idea management system reduced the time required to identify high-potential ideas by 50% and also reduced the time required to assess the feasibility of ideas.



1 http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation

### UNLOCK YOUR ENTERPRISE'S POTENTIAL WITH DATA

To meet growth and financial objectives, CIOs must adopt a data storage approach that:

- Enables data-driven innovation.
- Unifies the hybrid cloud.
- Provides cost advantages from commodity hardware.
- Scales storage capacity easily
- Ensures reliability and high performance.

## TRADITIONAL STORAGE SYSTEMS INCREASE COSTS, ISOLATE DATA

To ensure their businesses continue to become more agile, CIOs must manage massive amounts of unstructured data, such as documents and social media streams, and semi-structured data, such as log files.

Adding capacity to existing monolithic storage systems, even with volume-based discounts, can be affordable for gigabytes of data but too costly for terabytes or petabytes of data—and existing infrastructures may be unable to support additional volumes. Research conducted by the Compliance, Governance, and Oversight Counsel suggests that, even with declining storage prices, the per-petabyte cost of traditional storage for most large enterprises will range from $1.5 million to $5 million and will grow to nearly 20% of the typical IT budget.[2]

In addition to increasing acquisition costs, traditional storage can add operational complexity. Each incremental storage area network (SAN) or network-attached storage (NAS) unit can add significant complexity to storage infrastructures and require additional administrators.

Traditional storage solutions also lack the application program interfaces (APIs) that ease integration with new social media, mobile, and cloud applications. As content- and data-centric applications become more significant for the enterprise, important data can become isolated in traditional storage, stifling innovation. According to the McKinsey report, "Legacy systems and incompatible standards and formats too often prevent the integration of data and the more sophisticated analytics that create value from big data."

## RED HAT STORAGE HELPS ENTERPRISES ACHIEVE DATA GROWTH AND AGILITY

Red Hat Storage is an open source, software-defined storage platform that can help CIOs use expanding data stores as a strategic asset.

The Red Hat Storage product portfolio includes:

- **Red Hat Gluster Storage:** A scalable, reliable, and cost-effective data management platform that streamlines file and object access across physical, virtual, and cloud environments.
- **Red Hat Ceph Storage:** A robust, highly scalable block and object storage platform for enterprises deploying public or private clouds.

Red Hat Storage products run on physical, virtual, or cloud-based servers and pool their storage capacity to create a common information repository across data types, access methods, and deployment environments. As a result, Red Hat Storage lets enterprises use existing infrastructure more effectively while establishing the foundation for flexible, limitless, and cloud-compatible storage.

By bringing together proven open source technologies such as GlusterFS, Ceph, and Red Hat Enterprise Linux®, Red Hat Storage delivers cost, scalability, performance, and other benefits.

2 http://www.forbes.com/sites/ciocentral/2012/07/17/defensible-disposal-you-cant-keep-all-your-data-forever/

## SIMPLIFIED DATA ACCESS FOR VARIOUS USE CASES

Using Red Hat Storage, CIOs can easily build an enterprise-wide information platform to easily store and harness unstructured and semi-structured data. With inherent scalability and high performance, Red Hat Storage solutions are ideal for aggregating data that might otherwise be stored in isolated NAS devices, directly attached to an application server, or kept in expensive SANs.

Support for object, block, and file access allows a broad array of use cases, including traditional applications that require accessing data via file protocols like CIFS and NFS, as well as native HTTP, object-based access for data-centric web, mobile, and social applications.

## UNIFIED HYBRID CLOUD ENVIRONMENT

Red Hat Gluster Storage and Red Hat Ceph Storage are easily deployed behind corporate firewalls and in the cloud for creation of a hybrid enterprise cloud. By incorporating physical, virtual, and cloud resources, Red Hat Storage eliminates the need for disparate storage platforms and management tools. This unification simplifies the storage environment and dramatically reduces the time, cost, and complexity required to deliver and support diverse applications.

## COST ADVANTAGES FROM COMMODITY HARDWARE

Proprietary storage solutions lock customers into a pricing model where each incremental expansion costs more than the equivalent industry-standard component. By contrast, the cost of commodity components is increasingly driven down by marketplace pressures. Red Hat Storage gives CIOs the freedom to choose the right hardware for business requirements and applications when building their enterprise-grade, software-defined storage environments.

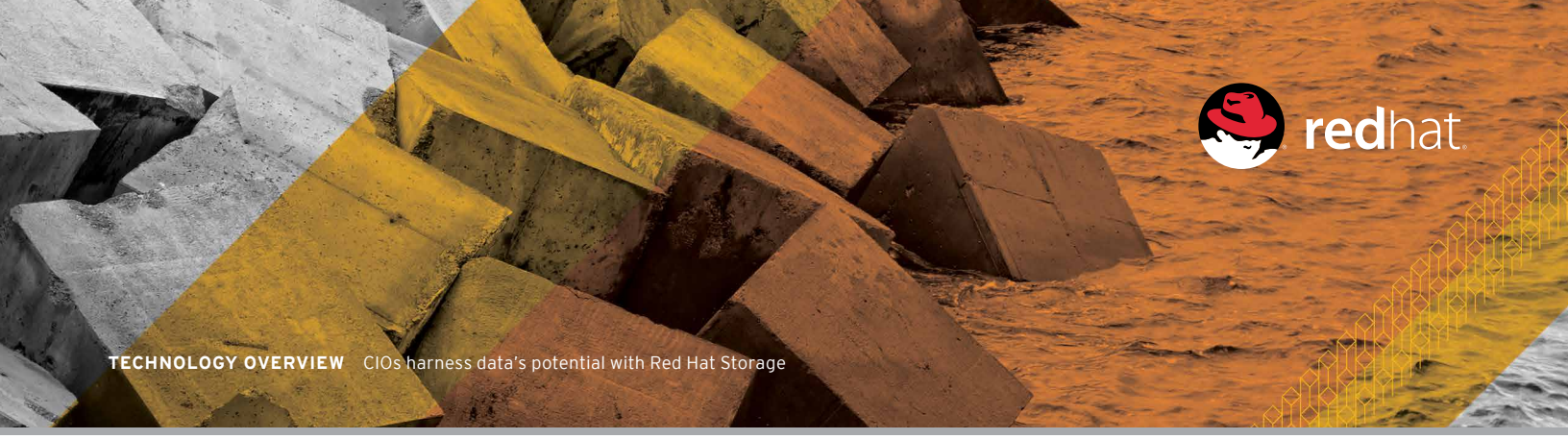
## SCALABLE STORAGE CAPACITY

As the volume of data rapidly increases, CIOs need a scalable storage platform that can meet both current and future data storage needs. Red Hat Storage delivers a highly scalable storage environment using industry-standard infrastructure. Red Hat Gluster Storage and Red Hat Ceph Storage allow storage capacity to be easily added as the need arises—without downtime or disruption to running applications. As a result, organizations can start with small, software-defined storage deployments and scale incrementally as applications grow. Advanced unified management tools available in Red Hat Storage let fewer storage administrators manage larger storage environments. Staff can focus instead on more strategic projects to drive innovation, increase productivity, and reduce operational costs across the organization.

## RELIABILITY AND HIGH PERFORMANCE

Adding nodes to Red Hat Gluster Storage or Red Hat Ceph Storage environments not only expands storage capacity, it also increases performance by providing additional input/output bandwidth. As a result, software-defined storage environments can be designed to support a wide variety of price and performance requirements.

Red Hat Storage products feature built-in high availability and disaster recovery. No additional hardware or software is required to achieve high data availability, either on premise or in the cloud. Advanced techniques, such as erasure coding, ensure that data availability requirements are efficiently met. With these methods and features, Red Hat Storage products protect against failures of individual instances and entire availability zones in public and private cloud environments.





## GAIN A COMPETITIVE EDGE WITH DATA

CIOs can increase innovation and growth in their enterprises by effectively harnessing data. The right data platform lets organizations become more data driven and able to harness the benefits of modern web, mobile, and social applications. This foundation requires cloud-ready storage platforms that are agile, cost-effective, and flexible to meet evolving business requirements.

Red Hat Gluster Storage and Red Hat Ceph Storage can be used individually or coordinated for a variety of data-centric use cases, including:

- Cloud infrastructure and object storage.
- Containers.
- Rich media and archival storage.
- Big data and analytics.
- Enterprise virtualization and hyperconvergence.
- Enterprise sync and share.

Using Red Hat Storage for these and other use cases, CIOs can confidently support business growth, manage cost and risk, capitalize on emerging technologies, and build a foundation for future innovation.

### ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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