DIGITAL TRANSFORMATION
GOAL: AGILITY AND ELASTICITY

Modern infrastructure scales out, allowing it to meet changing demands
PRINCIPLE: DISTRIBUTED DEPLOYMENT
Modern infrastructure scales across multiple data centers and the public cloud
PRINCIPLE: GENERALIZED HARDWARE

Modern infrastructure doesn’t require the cost overhead of specialized hardware
All kinds of people deploy and consume infrastructure, through platforms like OpenStack and OpenShift.
FLEXIBILITY IS CRUCIAL
## The Datacenter Is Changing

<table>
<thead>
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</tr>
</thead>
<tbody>
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WHAT MAKES STORAGE CHALLENGING?
Every workload users deploy requires an operating system and durable, flexible storage.
Once data has been loaded into a storage system, *it is very costly and time-consuming to move*. 

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Once a storage solution has been chosen and deployed, it becomes extremely difficult to choose something different.
THERE ARE DIFFERENT KINDS OF STORAGE

**BLOCK STORAGE**
Data as sequential uniform blocks

**FILE STORAGE**
Data as buckets of hierarchical folders and files

**OBJECT STORAGE**
Data as a loosely structured cluster of objects
STORAGE NEEDS VARY

Not all storage workloads come in the same size and shape

Platforms like OpenStack and OpenShift are unpredictable

Backups require petabyte-scale at a low cost

Data and media lakes require elasticity and performance
STORAGE ADMINS ARE CHANGING

Traditional storage admins work on teams that specialize in storage.

Modern storage admins operate large scale platforms, consider the complete picture.
APPLIANCES AREN’T ENOUGH

Complexity hidden from end users, along with flexibility

Closed systems lead to greater vendor lock-in

Lock-in leads to a price premium over constituent components
PUBLIC CLOUD STORAGE ISN’T ENOUGH

- Pricing is pay-as-you-go, which is convenient but expensive
- Fastest-growing segment of IT storage budgets
- Built with proprietary technology, creating substantial lock-in
THE INDUSTRY IS RETHINKING STORAGE

38% of IT decision makers report **inadequate storage capabilities** as one of their top three weekly pain points.

70% of IT decision makers admit that their organization’s current storage *can’t cope with emerging workloads*.

98% of IT decision makers believe a more agile storage solution could *benefit their organization*.

Vanson Bourne Ltd: Storage limitations, frustrations, and coping with future needs, Red Hat Storage research results, June 2016
IS SOFTWARE THE ANSWER?
THE DATACENTER IS CHANGING

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SOFTWARE-DEFINED STORAGE

SERVER-BASED
CENTRALIZED CONTROL
OPEN ECOSYSTEM
SERVER-BASED STORAGE

The use of software and standard hardware to provide services traditionally provided by single-purpose storage appliances

Appliance

Distributed Cluster of Services
SOFTWARE-DEFINED STORAGE

CENTRALIZED CONTROL

SERVER-BASED

OPEN ECOSYSTEM
CENTRALIZED CONTROL

The ability to provision, grow, shrink, and decommission massively-distributed storage resources on-demand and programmatically

- **Web Console**: A browser interface designed for managing distributed storage
- **API**: A full API for automation and integration with outside systems
- **Command Line**: A robust, scriptable command-line interface for expert operators

**Full life cycle management for distributed, software-defined data services**

- **PROVISION**
- **INSTALL**
- **CONFIGURE**
- **TUNE**
- **MONITOR**

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SOFTWARE-DEFINED STORAGE

SERVER-BASED

CENTRALIZED CONTROL

OPEN ECOSYSTEM
HOW CAN RED HAT HELP?
RED HAT STORAGE

- Standard interfaces and full APIs ease integration with applications and systems
- Self-managing and self-healing software provides durability and adapts to changes
- Industry-standard hardware provides choice and can be tailored for specific workloads

SOFTWARE PARTNERS

- Citrix
- Permabit
- Percona
- SME

OPEN SOURCE SOFTWARE

- Red Hat Ceph Storage
  - Ceph management
  - Ceph data service
- Red Hat Gluster Storage
  - Gluster management
  - Gluster data service

STANDARD HARDWARE

- Intel
- Supermicro
- QCT
- Dell EMC
- Cisco
- Samsung
- Seagate
- WD
RED HAT STORAGE IS DEEPLY INTEGRATED

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RED HAT STORAGE OFFERS SUPERB VALUE

3-year TCO for 1PB of usable capacity, optimized for throughput

Pricing Sources: Gartner Competitive Profiles, as of 2/16/16 & Supermicro: Thinkmate, as of 1/13/16

THROUGHPUT OPTIMIZED CONFIGURATION

- HDD-only media
- Higher CPU-to-media ratio than archive configurations
- 2x replication with RHGS
- 8:3 Erasure Coding with storage appliance
Red Hat Storage recognized as a Visionary by Gartner in their first Magic Quadrant for Distributed File Systems and Object Storage.

This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request at https://engage.redhat.com/gartnermagic-quadrant-storage-s-201610121525

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THE CEPH AND GLUSTER ECOSYSTEMS

1200+ MEMBERS
142K+ CONTRIBUTIONS
5M+ DOWNLOADS

facebook  T-Mobile  Intel  ebay  Mellanox  WD
Fujitsu  Yahoo!  Samsung  Comcast  IBM  data lab
WHAT SHOULD I DO NOW?
ASK YOURSELF THESE SIMPLE QUESTIONS

What storage technology are you currently using?

Does it scale flexibly and cost effectively at petabyte scale?

What challenges are you facing with your current storage infrastructure?

How do you manage provisioning, capacity planning, and migrations with your current storage infrastructure?

Is your current storage infrastructure capable of handling your needs next year?
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VISIT OUR STORAGE SAVINGS CALCULATOR
TRY A TEST DRIVE

RED HAT®
CEPH STORAGE
Test-Drive:
bit.ly/cephtestdrive

RED HAT®
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Test-Drive:
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THANK YOU

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