



RED HAT
FORUM
Europe, Middle East & Africa



redhat.

Red Hat Storage

– Storage without limits

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Agenda

Intro to Red Hat Storage

Solution 1: Scale Out NAS

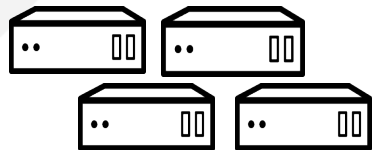
Solution 2: Container Native Storage

Solution 3: Hyperconverged Infrastructure

Solution 4: Scale out Object storage

Recommendations

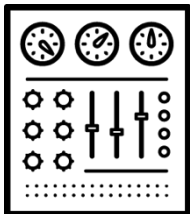
What is Red Hat Storage



Enterprise class iteration
of the open source **Ceph** and
Gluster projects



Commodity HW leads
to lower Infrastructure
Cost

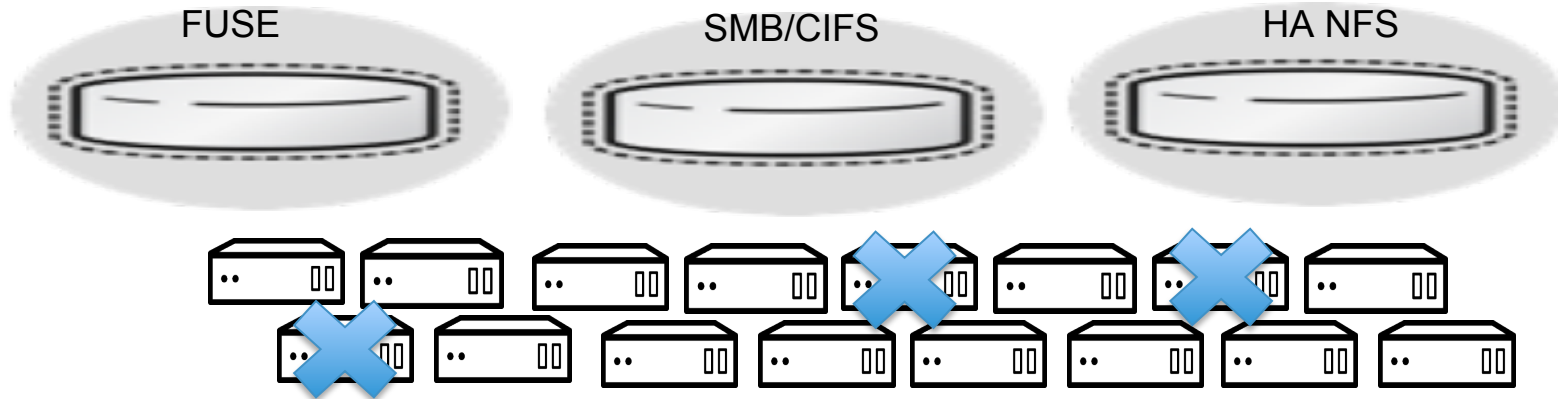


All-inclusive feature set



Extremely resilient,
performant and
secure

What is Red Hat Gluster Storage



Scale Out NAS

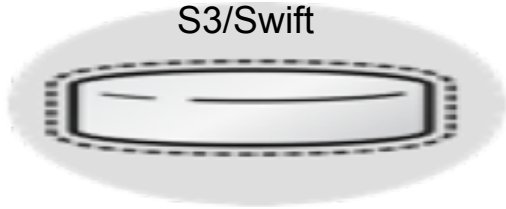
Multiprotocol access

Highly Resilient

Installable everywhere

What is Red Hat Ceph Storage

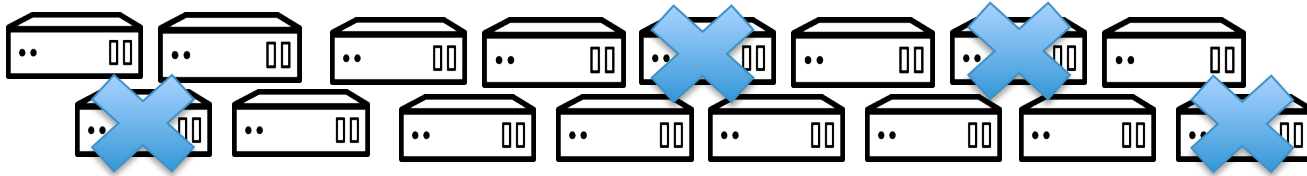
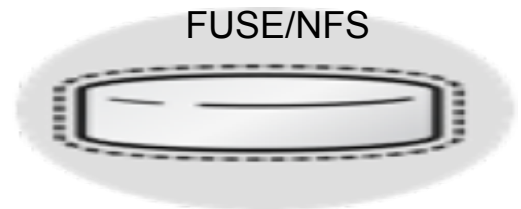
S3/Swift



RBD/ISCSI



FUSE/NFS



Scale Out Object storage

Highly Resilient

Multiprotocol access

Extremely scalable

SERVICES

RED HAT
OPEN INNOVATION LABS

RED HAT
CONSULTING

RED HAT
TRAINING +
CERTIFICATION

RED HAT
SERVICES

DEVELOPER TOOLS

RED HAT[®] JBOSS[®]
DEVELOPER STUDIO

 RED HAT[®]
OPENSIFT
Container Local

RED HAT[®]
CONTAINER
DEVELOPMENT KIT

RED HAT[®]
APPLICATION
LIFECYCLE TOOLS

APPLICATIONS AND BUSINESS PROCESSES

MIDDLEWARE AND APPLICATION SERVICES



RED HAT[®] JBOSS[®]
BPM SUITE

RED HAT[®] JBOSS[®]
FUSE

RED HAT[®] JBOSS[®]
DATA GRID

RED HAT[®] JBOSS[®]
ENTERPRISE
APPLICATION PLATFORM

RED HAT[®] JBOSS[®]
BRMS

RED HAT[®] JBOSS[®]
A-MQ

RED HAT[®] JBOSS[®]
DATA VIRTUALIZATION

RED HAT[®]
MOBILE APPLICATION
PLATFORM

CONTAINER PLATFORMS



INFRASTRUCTURE SOFTWARE

RED HAT[®]
ENTERPRISE LINUX[®]

RED HAT[®]
ENTERPRISE LINUX[®]
ATOMIC HOST

RED HAT[®]
STORAGE

RED HAT[®]
OPENSTACK
PLATFORM

RED HAT[®]
VIRTUALIZATION

PHYSICAL AND CLOUD INFRASTRUCTURE

SECURITY & MANAGEMENT

RED HAT[®] REGISTRY

RED HAT[®]
INSIGHTS

ANSIBLE
by Red Hat

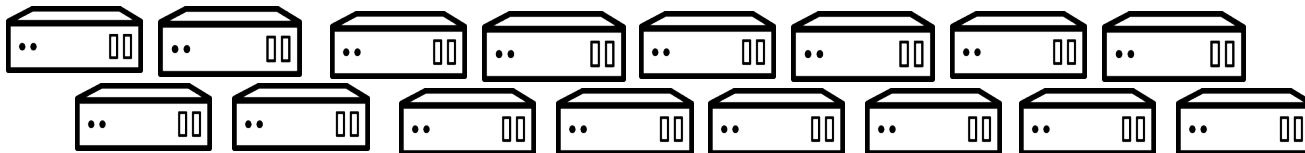
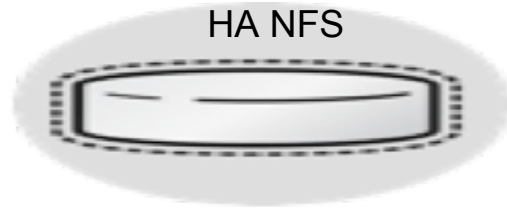
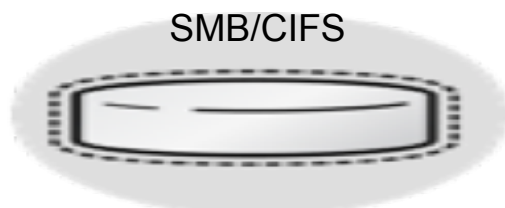
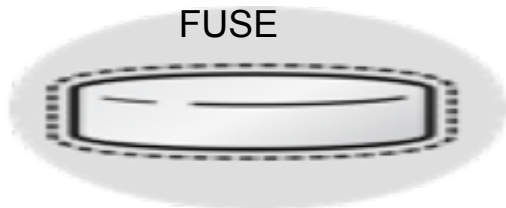
RED HAT[®]
SATELLITE

RED HAT[®]
CLOUDFORMS

Gluster Scale Out NAS

Used in three offerings:
Stand alone NAS
RHHI
CNS

Stand Alone NAS



Gluster Customer Use Case



Background:

Old, big, expensive NetApp FAS filer EOL
Choice of either Big renewal of support or buy new, big, expensive NetApp FAS filer

Use case: Storage of media files, lots of small movies for advertisement

Challenge:

Very short time to implement new solution
Uptime requirements high
Budget restrictions

Solution:

4 node Gluster cluster

Setup in one week
Qualification testing one week
Great help from partner Conoa, Red Hat and Conoa shared risk on the implementation project:

Happy=you pay
Not happy= no invoice

Installation finished in July, first expansion in September.
Next project in planning!

RED HAT® HYPERCONVERGED INFRASTRUCTURE

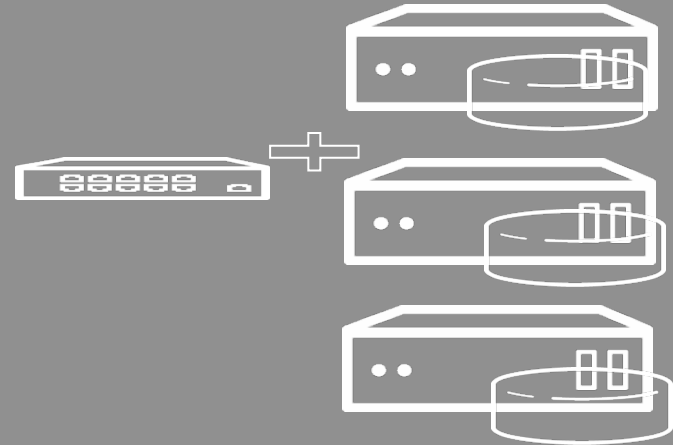
Combination of Red Hat Virtualization
and Red Hat Gluster Storage

RHGS is installed in VM:s and is providing
storage services to the whole cluster.

Built (initially) in triplets: 3, 6, 9...

Used for...

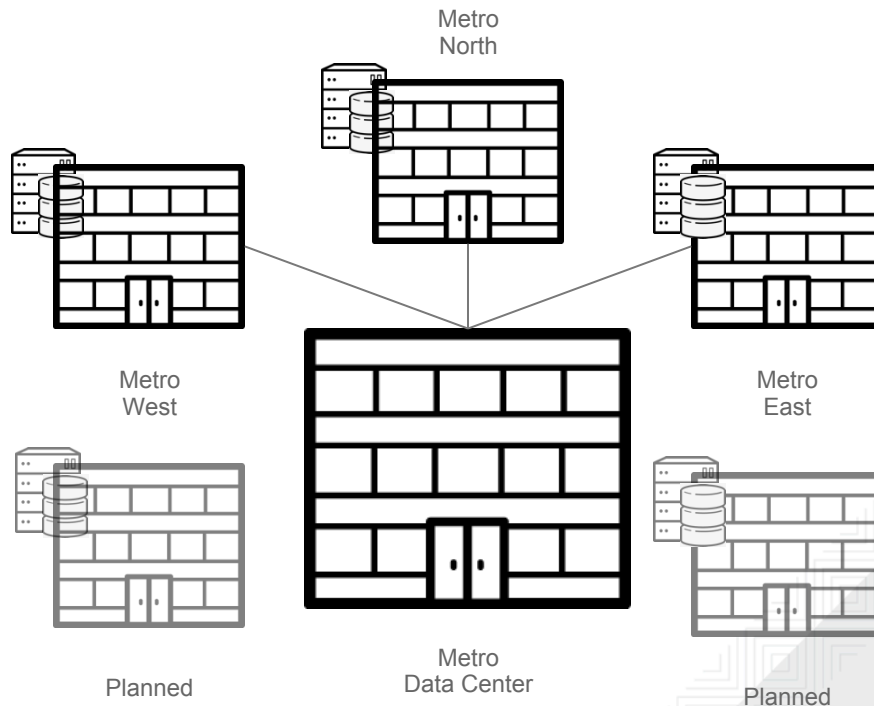
HYPERCONVERGED
ARCHITECTURE



REMOTE OFFICE/BRANCH OFFICE

PRIMARY USE CASE

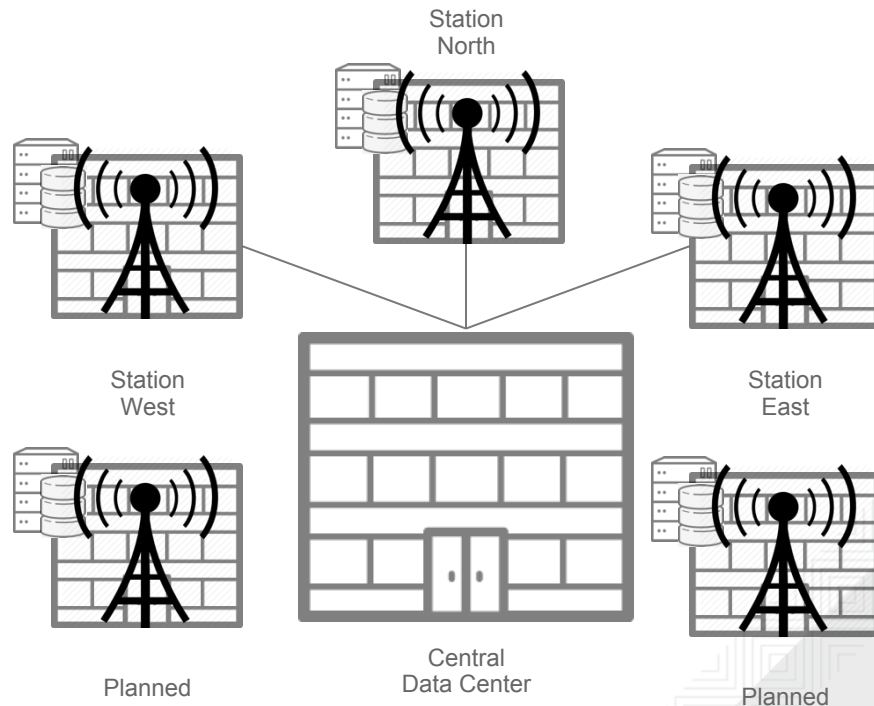
- Seeking overall reduction in TCO
- Need infrastructure consolidation
- Need reduced footprint - power/cooling costs expanding with traditional models
- Dealing with too many vendors - ease of acquisition/support
- Need to keep key applications local to the remote site



EDGE COMPUTING

PRIMARY USE CASE

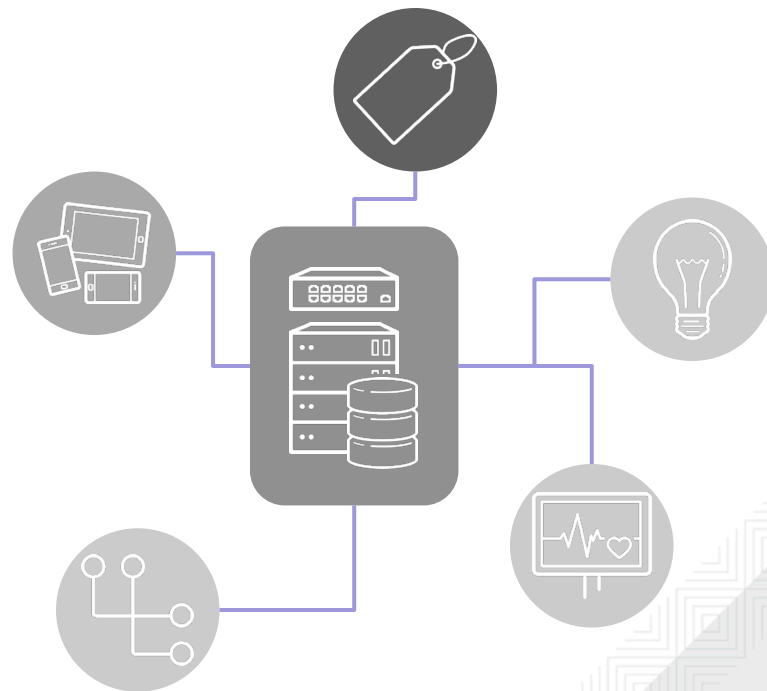
- Deploy compute and storage resources closer to cellular customers
- Distributed infrastructure reduces cellular network congestion
- Enhance network performance and build additional resiliency



INTERNET of THINGS

PRIMARY USE CASE

- Implement a robust intelligent gateway tier
- Deploy compute and storage resources closer to endpoints
- Red Hat Hyperconverged Infrastructure becomes a “micro-datacenter” for IoT



RHHI Customer Use Case

Background: Swedish insurance company that is targeting the employee sector providing health insurance, life insurance and similar. They have +4 million customers and is an important part of the safety net for million of people

Use Case: Infrastructure Management Cluster

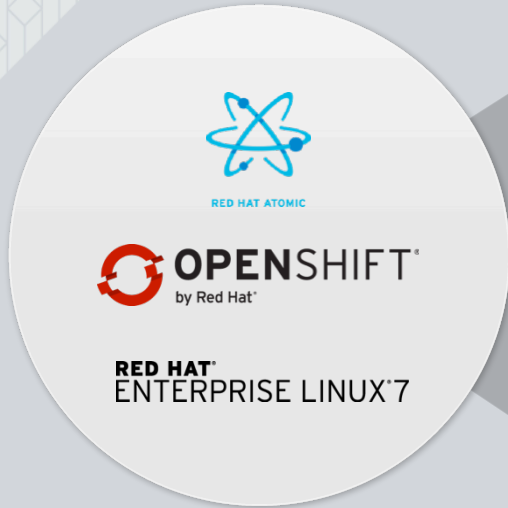
Challenge: Requested HA but without an external SAN
Datacenter Space issues – needed to be dense

Solution:
3 Node RHHI Cluster, premium support running on three regular x86 servers



Customer comments:
“Very happy with the smooth setup of the system. The stability of the system is impressive.”

Container Native Storage



- NFS
- iSCSI
- Amazon EBS
- Azure Disk
- GCE Disk
- Ceph RBD
- GlusterFS**

RUNS ON TOP OF OPENSHIFT

AVAILABLE EVERYWHERE

SCALABLE FILE STORAGE, RWX SUPPORT

AVAILABLE OUT OF THE BOX WITH 3.6

GEO-REPLICATION, SNAPSHOTS*

CNS Customer Use case

Background: Early adopter of Openshift. Project part of building a devops supporting platform to better solving existing and coming challenges

Use Case

HA Persistent volumes (remember NFS is not HA)
Automated provisioning for developers

Runs Openshift in VMware.

Initial concerns about layered installation – Openshift with CNS in ESX with storage consuming VMware VMDK files.

Decided to include CNS in pilot – went well and are now in production

Pros: HA + automated workflow – works very well!

Cons: Ran into issues with the combo Atomic host, Kubernetes, Gluster. Now fixed but caused problems. Highlights that the whole chain is very important to manage

Next step: Evaluate coming versions with iSCSI support for faster performance to use Elastic search on Gluster. Move in more applications into this environment.

What about Ceph then?

Red Hats main multiPB solution

Used by all telco providers, grows in Fintech, Universities

MultiPB installations in Nordics

Used in a variety of use cases:

Openstack Storage, Archive Storage, File Storage, Backup target

CephFS use case



DANISH RESEARCH
CENTRE FOR
MAGNETIC RESONANCE

DRCMR needed:

Scale out file storage

Future proof

Extreme resilience over time – research data

Storage for MR Scans

Solution:

Red Hat Ceph Storage with CephFS

HW: Combo of new and existing servers

Started at 512TB – now towards 1PB – will be at 2PB within 2 years

Pros: Stable, resilient (tested in reality) Open Source, low maintenance – staff = 2FTE.

Replaced multiple NAS boxes with one scalable solution

The Danish Research Centre for Magnetic Resonance (DRCMR) is placed at Copenhagen University Hospital Hvidovre and is one of the leading research centres in Europe within the field of biomedical MRI. A highly profiled international research team translates the latest advances in MRI to examine the brain's function, metabolism and structure.

Recommendations

- Openshift: Use CNS - always
- Openstack: Use Ceph -always
- VMware? Evaluate RHHI or RHV+Gluster
- NetApp/Isilon/other proprietary NAS: Gluster

Suggested Methodology:

Invite us and your favorite partner to a Storage Discovery Workshop

We help you build a Blueprint based on your needs and our Best practices

We together with the partner helps you with a POC/Pilot via Jumpstart (pre-packaged consultancy engagement)



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