

December 9<sup>th</sup> 2011  
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#osc2011



Maximize Value from Cloud, Mobile and Social strategies with Open Source

# The Future of Storage

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# THE TRADITIONAL APPROACH



- PROPRIETARY
- BOLT-ON HARDWARE APPROACH
  - COMBINED HARDWARE RAISES COSTS
  - HIGHER TCO
  - PAYING FOR WHAT YOU MAY NOT NEED
- INCREASED RISK
  - COMMON HARDWARE ELEMENTS CAN FAIL
  - POWER SUPPLIES
  - FANS
  - CABLING ... LOTS OF CABLING



## SOFTWARE ONLY **NAS SOLUTION**

- Runs on top of Red Hat Enterprise Linux
- Provides NFS, CIFS, HTTP, GlusterFS, etc.

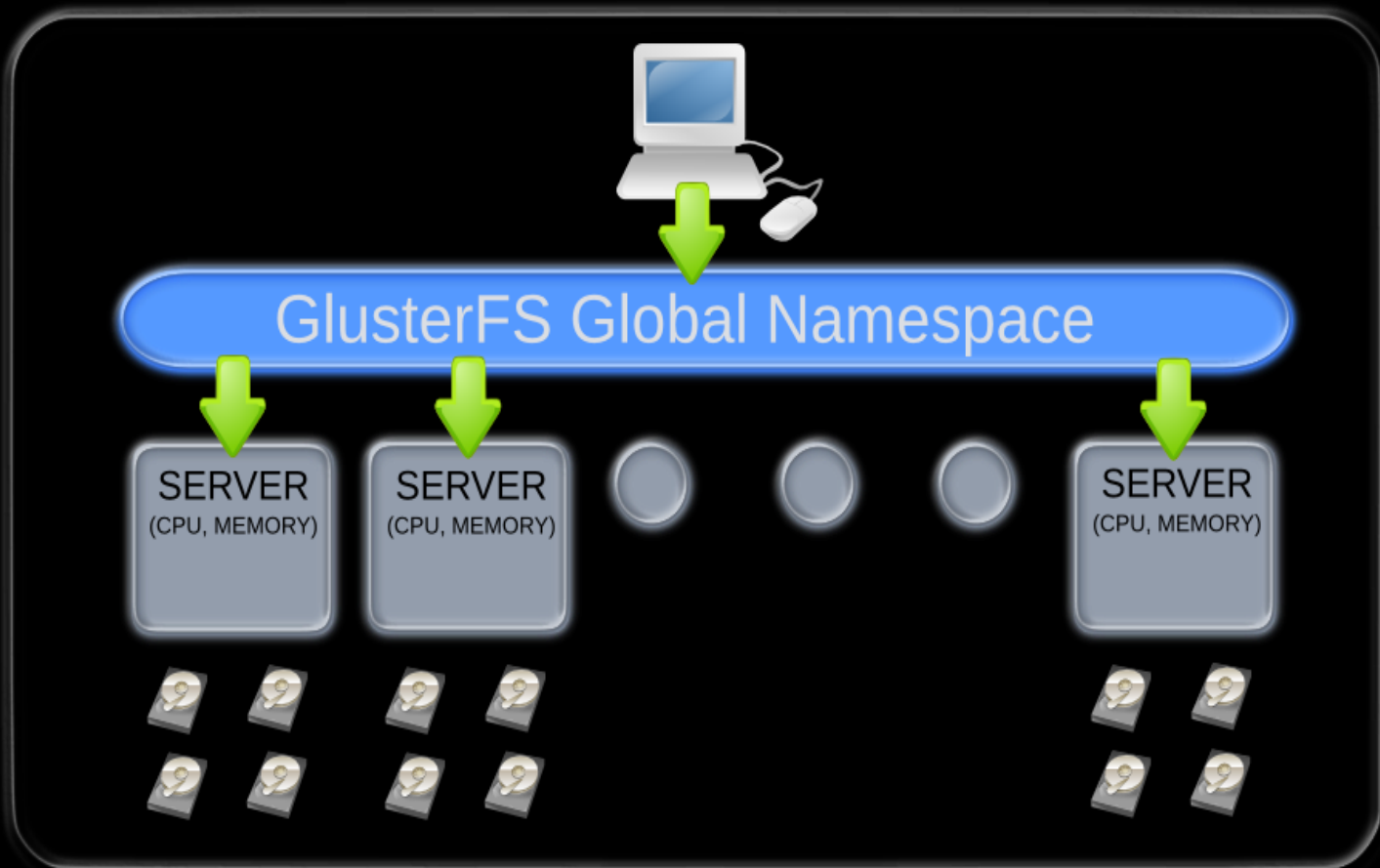
## HIGHLY **SCALABLE**

- Linearly scalable performance
- Scales up to petabytes & beyond

## GLUSTERFS **PROVIDES**

- High availability
- Affordability
  - Use of commodity hardware
- Flexibility
  - Deploy in ANY environment

# WHAT IS GLUSTERFS

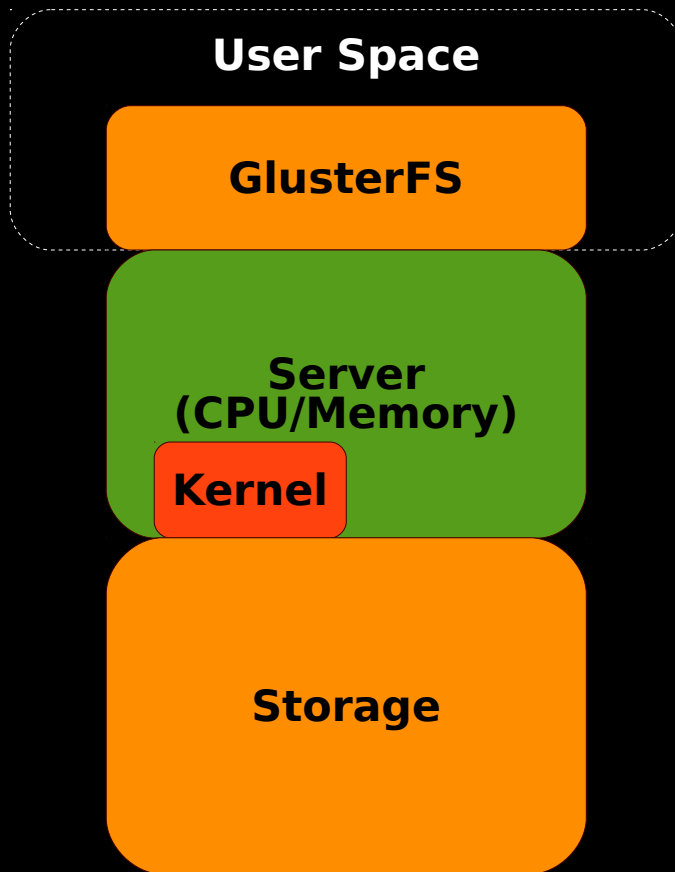




**$8.913168283 \times 10^{28}$**



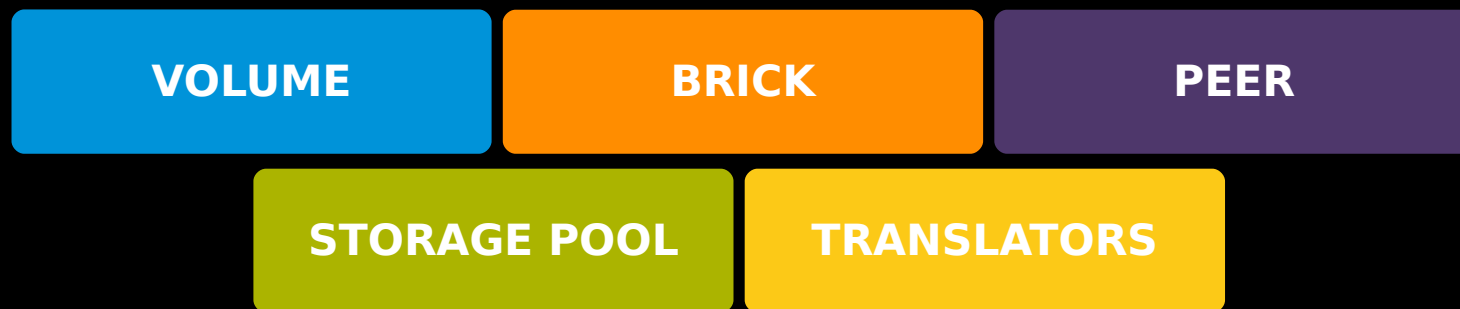
## FILE SYSTEM IN USER SPACE (FUSE)



- NOT TIED TO KERNEL
- NO REASSEMBLIES
- INDEPENDENCE
- FLEXIBILITY



## GLUSTERFS TERMINOLOGY





## TRANSLATORS

**MODULAR  
EXTENSIONS**

**STACKABLE**

**EASY TO DEVELOP**

## EXAMPLES

**Distribute**

- **DISTRIBUTE FILES ACROSS BRICKS**

**Replicate**

- **REPLICATE FILES SYNCHRONOUSLY TO N BRICKS**

**Stripe**

- **STRIPE FILES ACROSS BRICKS**

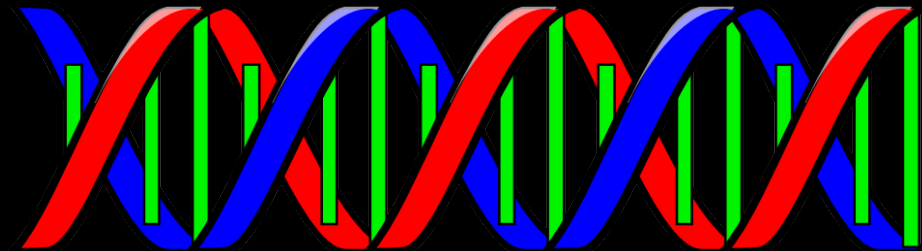
**Geo-replicate**

- **A-SYNCHRONOUS REPLICATION TO N BRICKS**



## ELASTIC HASHING ALGORITHM

- NO NEED FOR METADATA SERVER
- UNIQUE HASH TAG FOR EACH FILE STORED
- RAPID FILE READ
- BASED ON DAVIES MEYER ALGORITHM





## ACCESSING A GLUSTERFS VOLUME

### CLIENTS

- NFS
- CIFS
- HTTP
- WebDAV

### GLUSTER NATIVE CLIENT

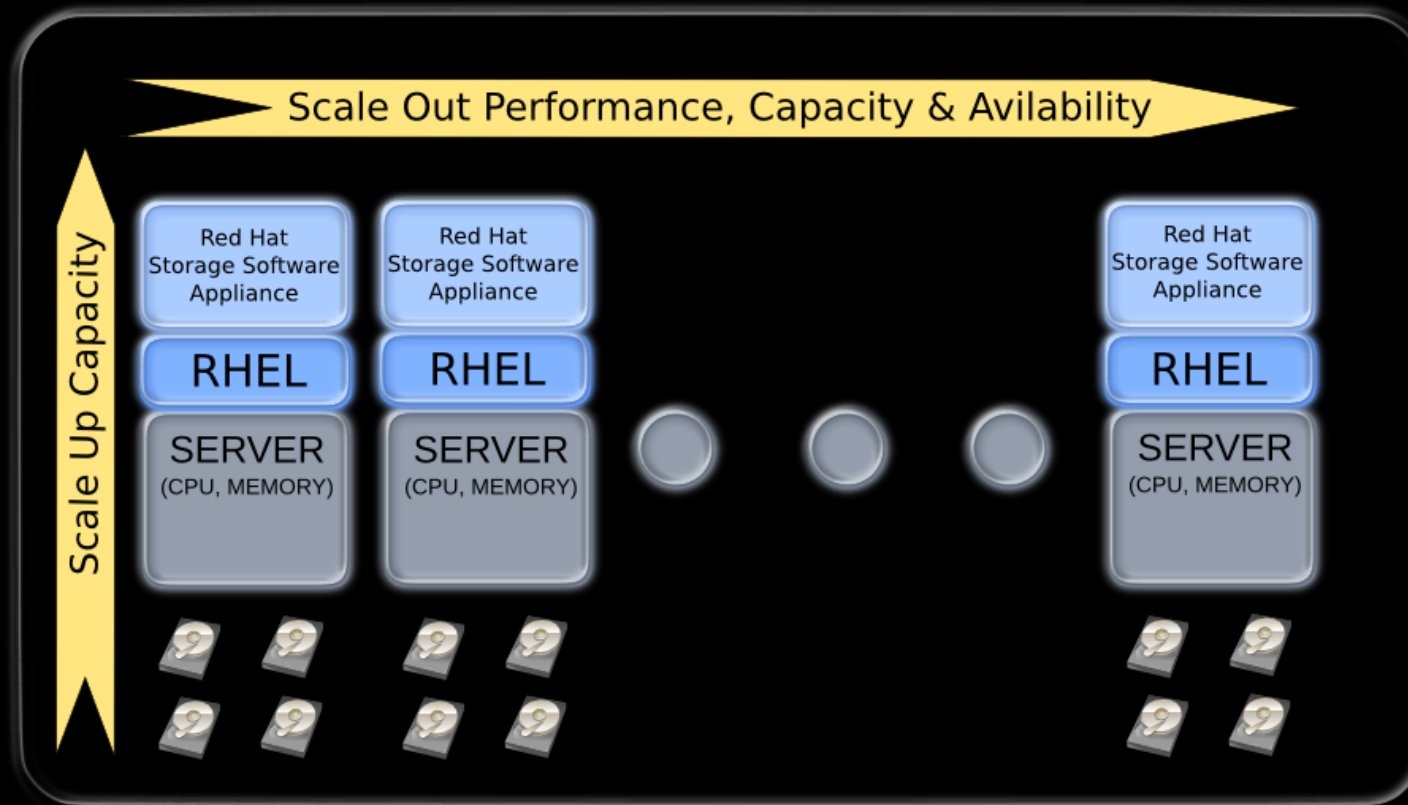
- HIGH PERFORMANCE
- STORAGE AWARE
- FUSE FILESYSTEM

### CLOUD

- COMPATIBLE WITH APACHE HADOOP MAPREDUCE
- CAN REPLACE THE HDFS FILE SYSTEM

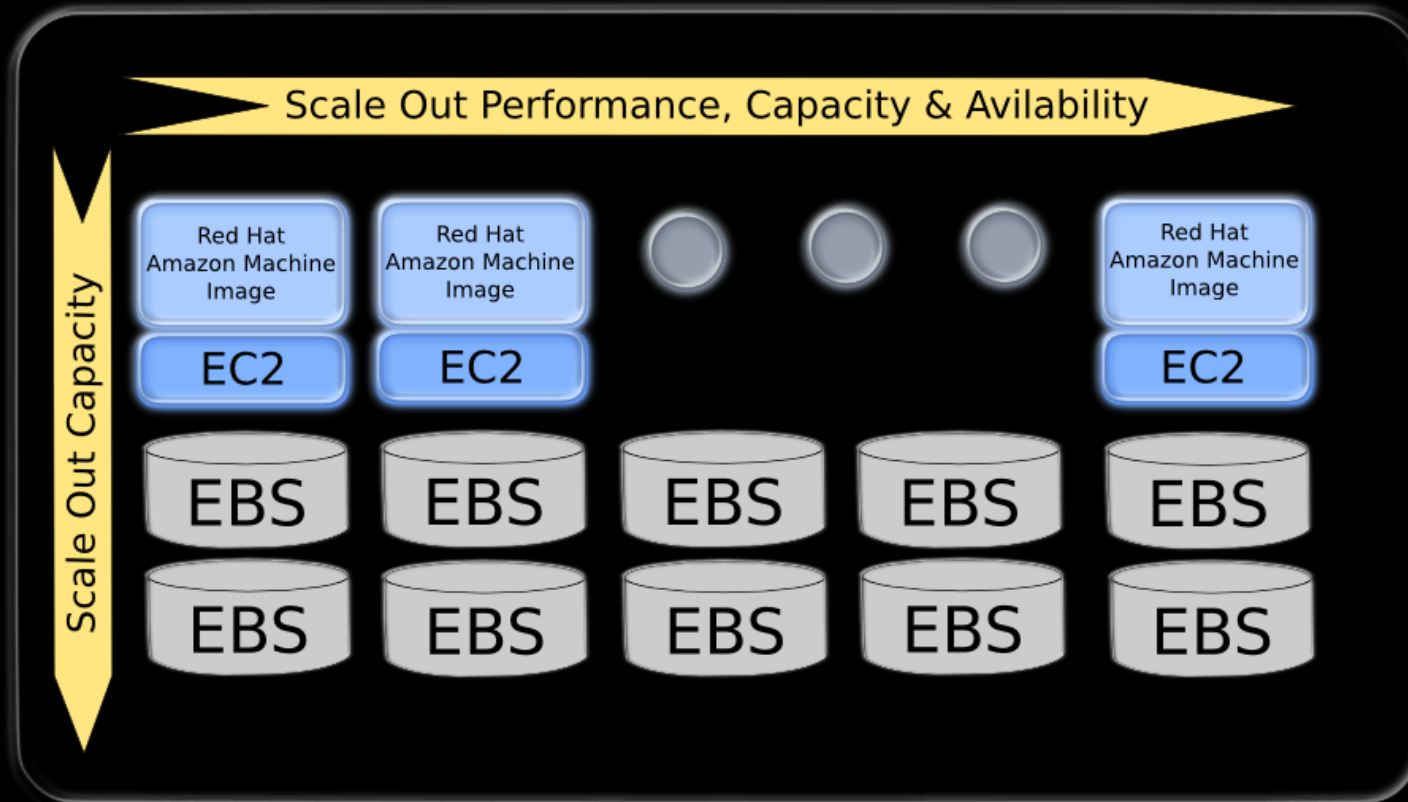


## ON PREMISE PRIVATE CLOUD



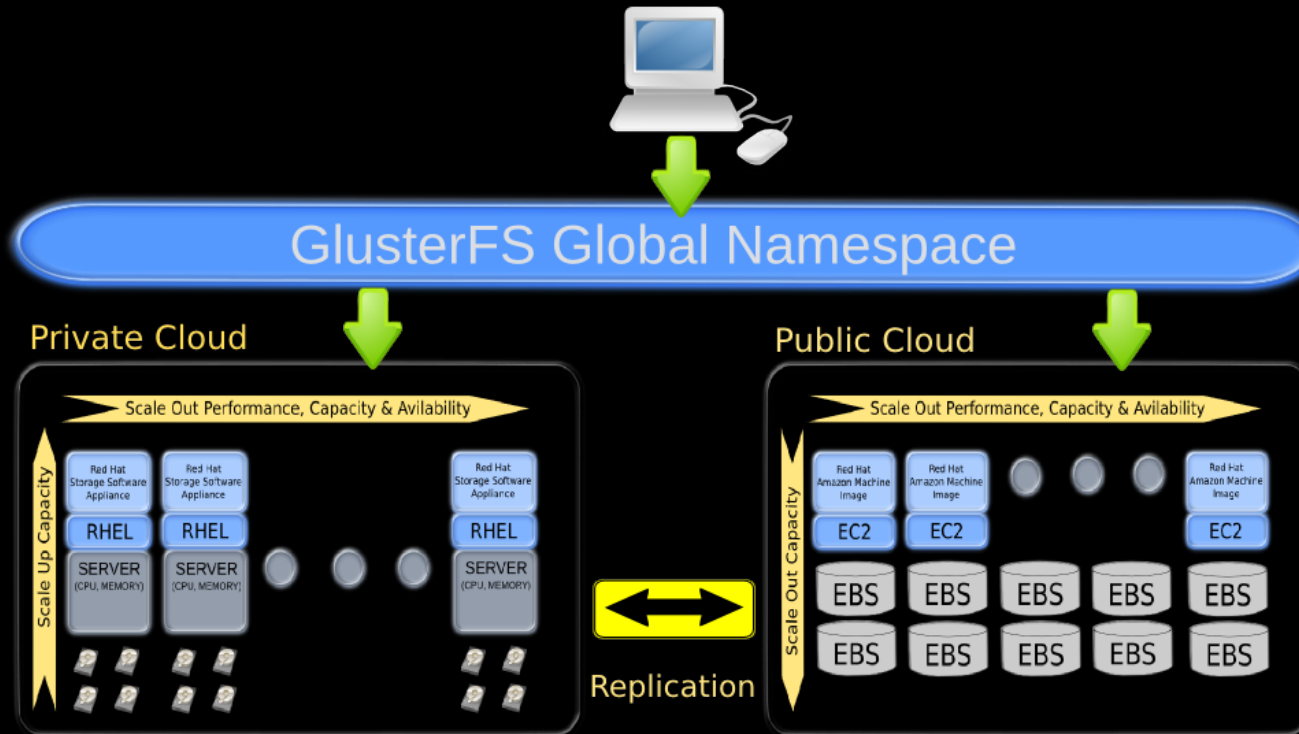


## PUBLIC CLOUD STORAGE





## HYBRID CLOUD STORAGE





## TYPICAL REFERENCE USE CASES:

- AUDIO CONTENT DELIVERY
- VIDEO CONTENT DELIVERY
- MULTIMEDIA ARCHIVING
- STORAGE AS A SERVICE
- HIGH PERFORMANCE CLUSTERS



## MORE INFORMATION:

- UPSTREAM COMMUNITY: [WWW.GLUSTER.ORG](http://WWW.GLUSTER.ORG)
- SLIDESHARE PRESENTATIONS ON GLUSTER
- TWITTER: @REDHATSTORAGE



# Q&A