GlusterFS

Petascale Cloud Filesystem
GlusterFS Simple Commands

# gluster peer probe HOSTNAME

# gluster volume info

# gluster volume create VOLNAME [stripe COUNT] [replica COUNT] [transport tcp | rdma] BRICK ...

# gluster volume delete VOLNAME

# gluster volume add-brick VOLNAME NEW-BRICK ...

# gluster volume rebalance VOLNAME start
Story of Gluster

1st meeting room

1st Office US

Meeting Round 1

1st Office Bengalooru

All work and no play?

Bedroom

1st Office Bengalooru
Registered Gluster Deployments
Gluster Architecture Advantages

Software only
- Fully distributed architecture, no bottleneck
- Gluster Elastic Hash

No metadata server
- Software only
- No metadata server

High performance global namespace
- Scale out with linear performance
- Hundreds of petabytes
- 1 GbE, 10GbE and InfiniBand (native RDMA)

High availability
- Replication to survive hardware failure
- Self-healing
- Data stored in NFS-like native format

Stackable userspace design
- No kernel dependencies, simple install
- Match specific workload profiles
- Early maturity and rich functionality

‘Google Storage’ for Everyone
- Intelligence in the SW
- Leverage commodity HW
- Scale-out elastically
- Replication for reliability
- Software enables virtualization
Gluster Elastic Capabilities

- Volumes abstracted from the hardware
- Grow, shrink, migrate across physical systems
  - Like vMotion for storage volumes
  - Automatic rebalancing
- No application interruption
- File system configuration changes accepted at run time
  - React to changing workloads, live performance tuning
- Native NFS
Anatomy of a storage pool: Public Cloud (e.g. AWS)
Pandora Internet Radio


Problem

• Explosive user & title growth
• As many as 12 file formats for each song
• ‘Hot’ content and long tail

Solution

• Three data centers, each with a six-node GlusterFS cluster
• Replication for high availability
• 250+ TB total capacity

Benefits

• Easily scale capacity
• Centralized management; one administrator to manage day-to-day operations
• No changes to application
• Higher reliability

• 1.2 PB of audio served per week
• 13 million files
• Over 50 GB/sec peak traffic
Private Cloud: Centralized Storage as a Service

**Problem**
- Capacity growth from 144TB to 1+PB
- Multiple distributed users/departments
- Multi OS access - Windows, Linux and Unix

**Solution**
- GlusterFS Cluster
- Solaris/ZFS/x4500 w/ InfiniBand
- Native CIFS/ NFS access

**Benefits**
- Capacity on demand / pay as you grow
- Centralized management
- Higher reliability
- OPEX decreased by 10X
Join our Gluster Community

Community.gluster.org