Present and Future Development of Gluster

Niels de Vos
Gluster Developer and Maintainer
Senior Software Engineer at Red Hat
ndevos@redhat.com

Agenda

- Brief introduction
- Commonly used stable features
- CI – the alternative of Continuous Integration
- New features in the first Gluster 4.0 release
- Planned features for the upcoming releases
- Improvements for Containers

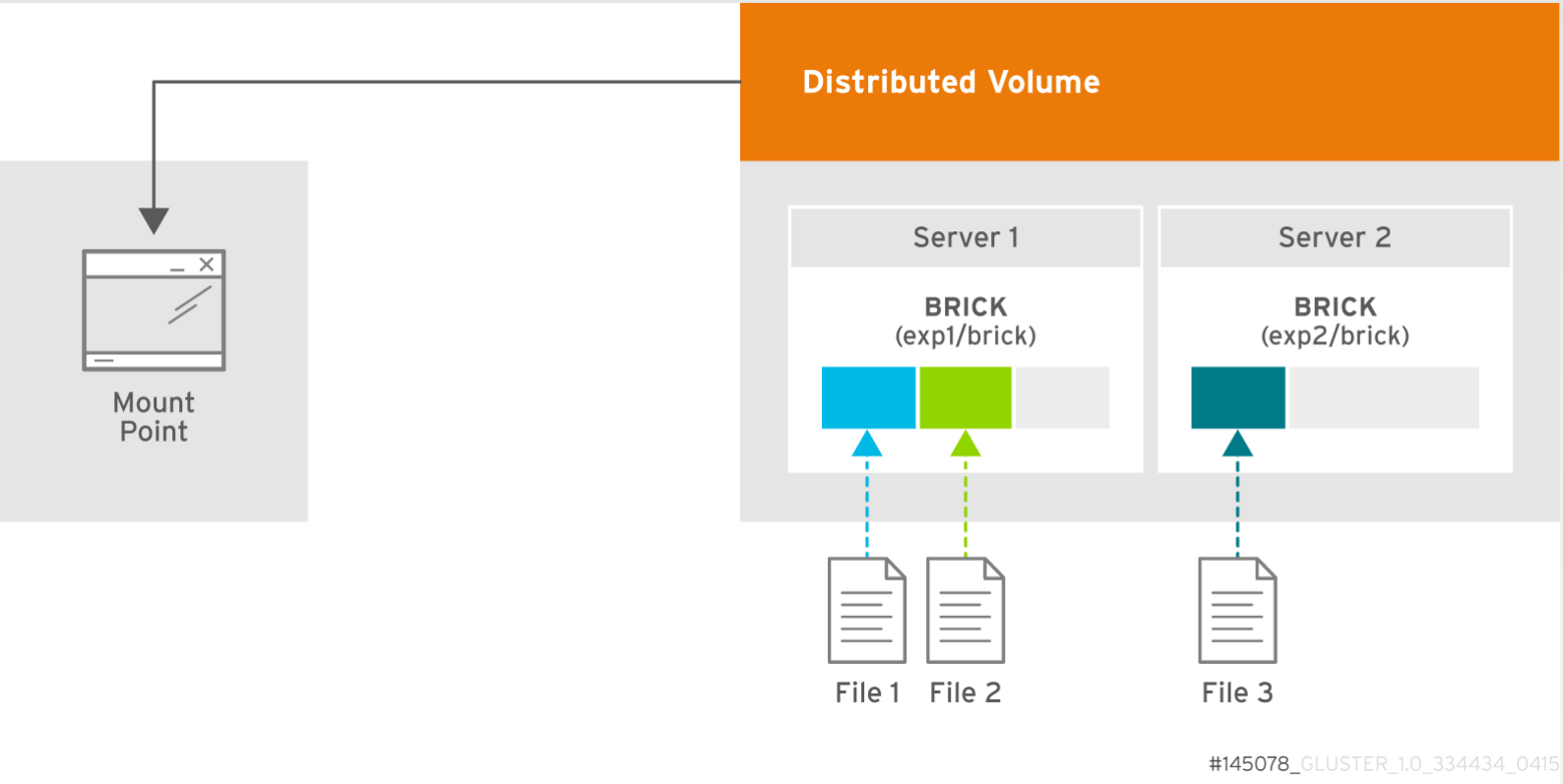
Brief Introduction

- Software Defined Storage
- Scale-out, distributed and high-available
- Designed as a filesystem
  - Block Storage as an add-on
  - Object Storage as an add-on
- Easy to install, configure and maintain
  - Packages available for several Linux distributions

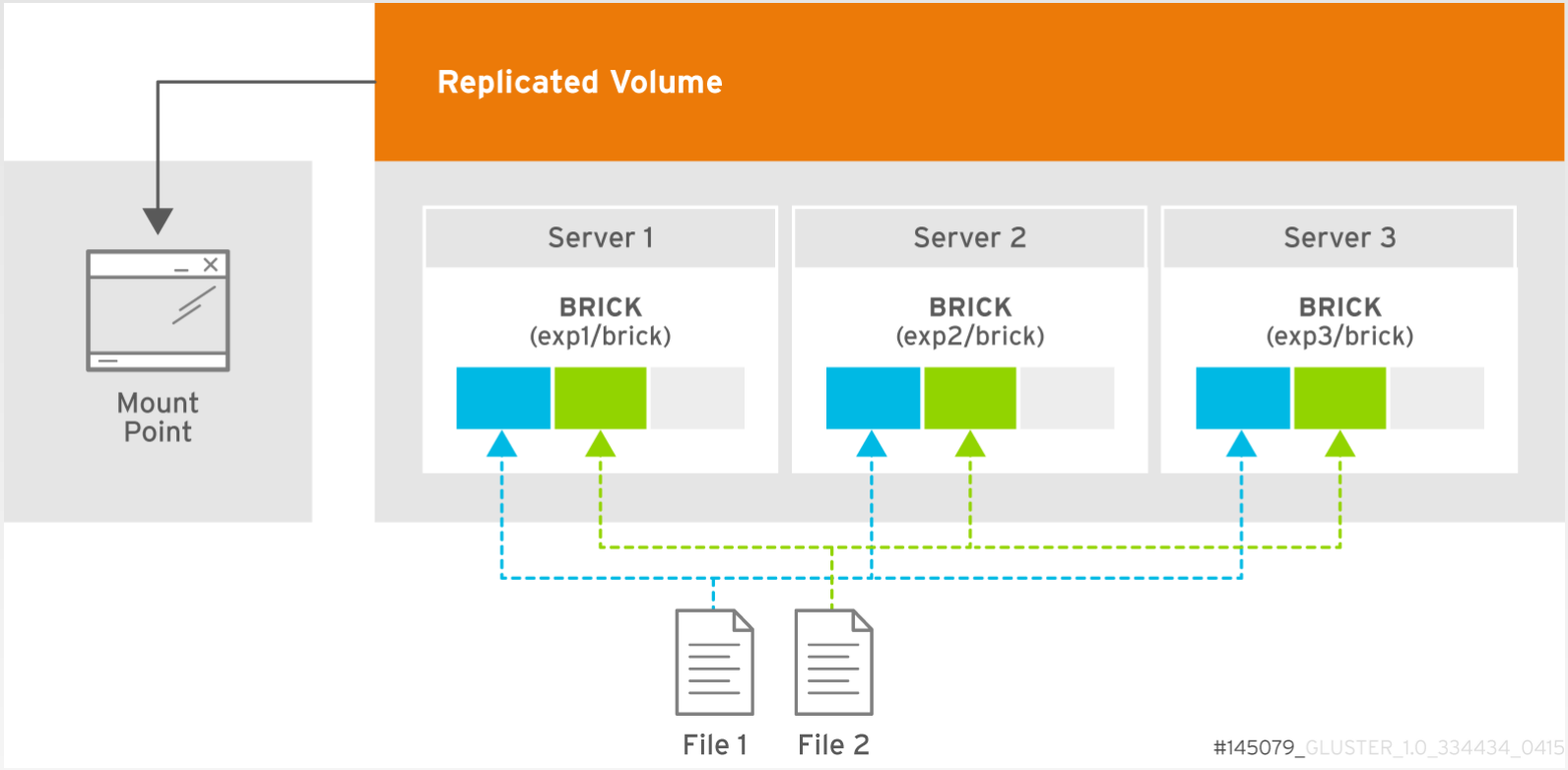
Brief Introduction

- Distributed Volumes
- 3-way Replication
- 2-way Replication + Arbiter
- Dispersed Volumes

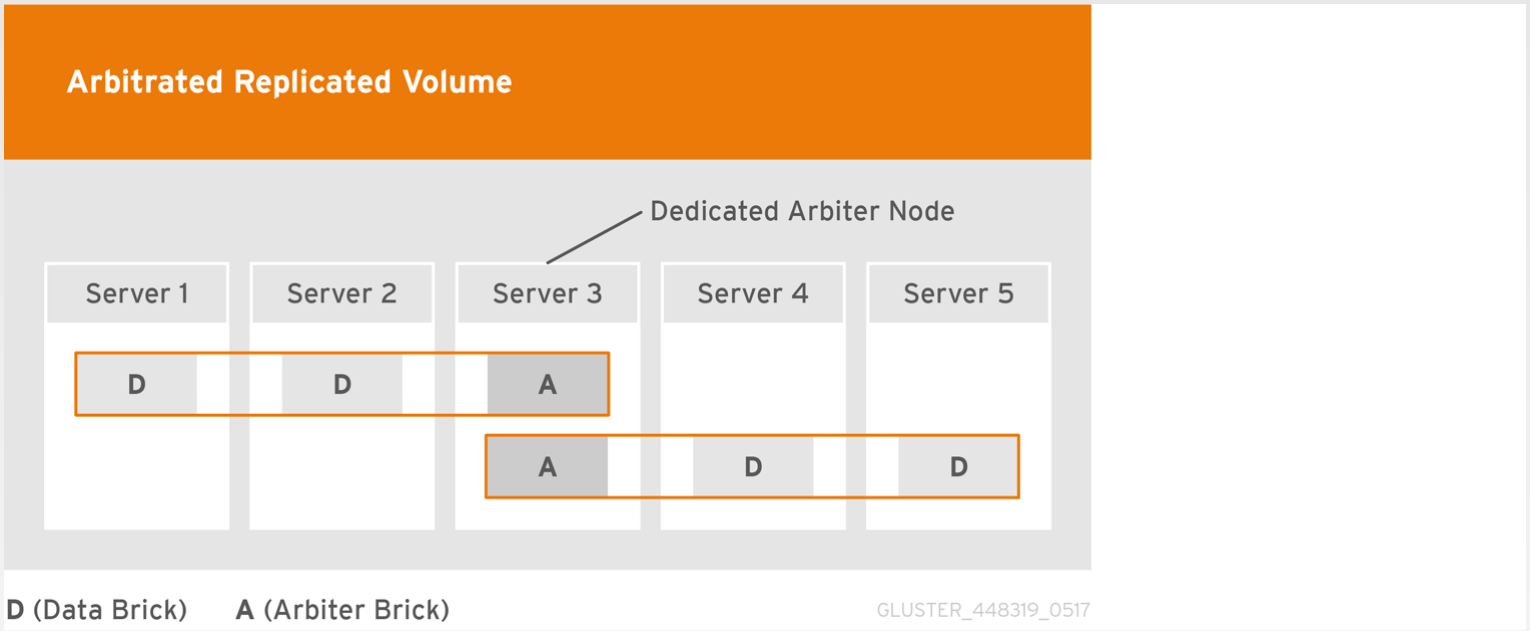
Distributed Volumes



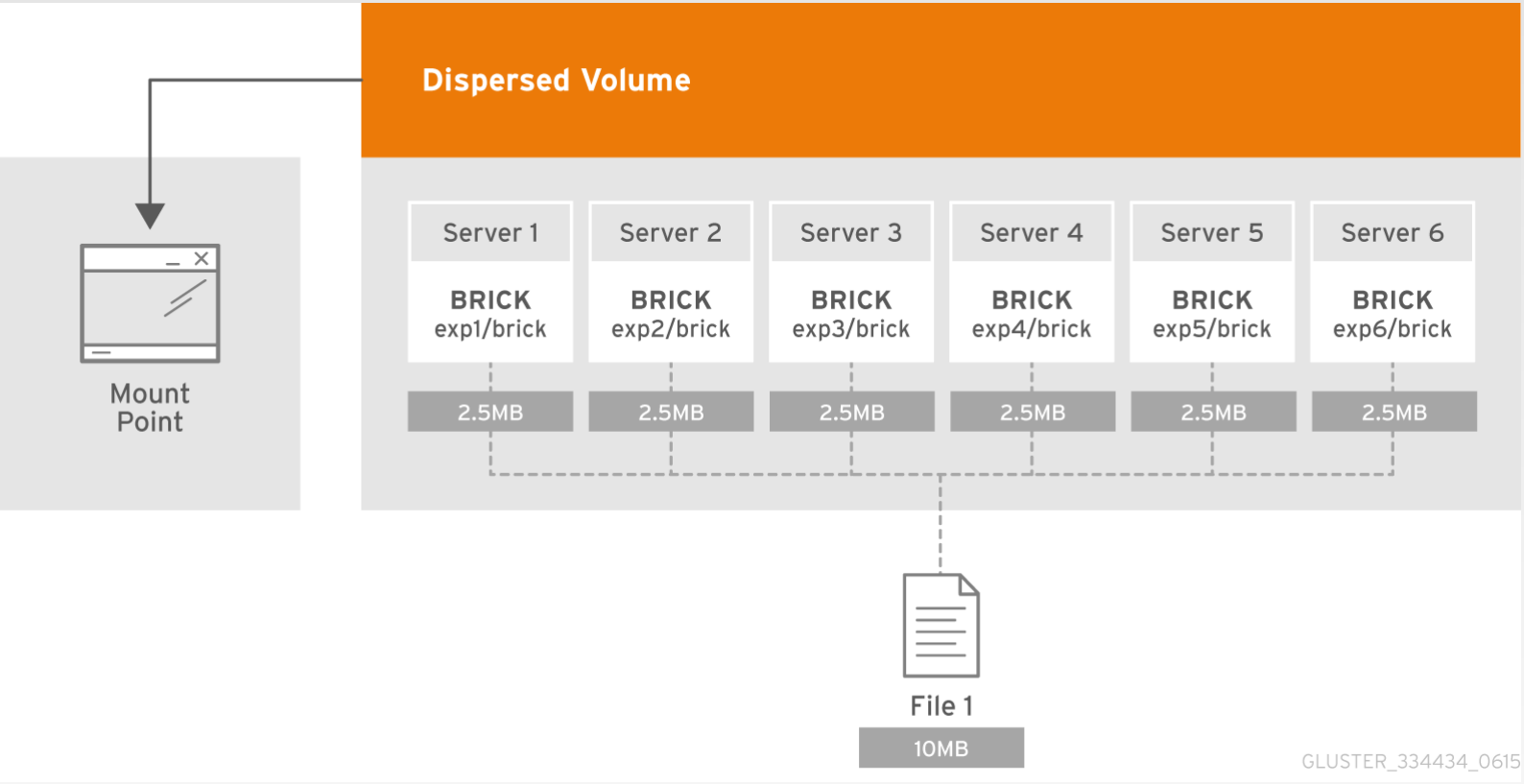
3-way Replication



2-way Replication + Arbiter



Dispersed (Erasure Coded) Volumes



Commonly Used Stable Features

- Meta-data caching
- Geo-replication
- Volume snapshots
- Policy based split-brain resolution
- Brick multiplexing

Automagic unsplit-brain

Policy based split-brain resolution

- ctime|mtime|size|majority
- cluster.favorite-child-policy volume option

```
# gluster volume set .. cluster.favorite-child-policy ..
```

Related Open Source Projects

- oVirt
- Samba
- NFS-Ganesha
- QEMU
- Kubernetes
- glusterfs-coreutils
- gluster-colonizer

CI: Continuously Improving

- Performance enhancements
- Better self-heal
- More efficient caching and cache-invalidation

New Features in Gluster 4.0.0

- GD2 readiness
- permission/ownership enforcing
- FIPS compatible
- Protocol corrections

4.0.x Release Notes under release-4.0/docs

Upcoming Features

- GF-Proxy
- RIO
- JBR
- Cloud Archival
- SElinux support on Volumes
- Monitoring with Prometheus and collectd

Improvements for Containers

- gluster-kubernetes for containerized installs
- gluster-s3 container for Object Storage
- gluster-block for iSCSI access
- Integration in openshift-ansible
- External Storage Provider for Kubernetes

Thank you for your attention!

References:

- Gluster Homepage (https://gluster.org)
- Red Hat Gluster Storage 3.3 Administration Guide (http://red.ht/2tqOaqB)
- Gluster Docs (http://docs.gluster.org)
- Gluster Community (https://www.gluster.org/community/)

This presentation can be found at https://people.redhat.com/ndevos/talks/2018-03-IDI