



# **Red Hat Gluster Storage**

## **3.1**

### **3.1 Update 3 Release Notes**

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Release Notes for Red Hat Gluster Storage - 3.1 Update 3  
Edition 1

Red Hat Gluster Storage Documentation Team



# Red Hat Gluster Storage 3.1 3.1 Update 3 Release Notes

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## Release Notes for Red Hat Gluster Storage - 3.1 Update 3 Edition 1

Red Hat Gluster Storage Documentation Team  
Red Hat Customer Content Services

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## Abstract

These release notes provide high-level coverage of the improvements and additions that have been implemented in Red Hat Gluster Storage 3.1 Update 3.

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## Chapter 1. Introduction

Red Hat Gluster Storage is a software only, scale-out storage solution that provides flexible and agile unstructured data storage for the enterprise. Red Hat Gluster Storage provides new opportunities to unify data storage and infrastructure, increase performance, and improve availability and manageability to meet a broader set of the storage challenges and needs of an organization.

GlusterFS, a key building block of Red Hat Gluster Storage, is based on a stackable user space design and can deliver exceptional performance for diverse workloads. GlusterFS aggregates various storage servers over different network interfaces and connects them to form a single large parallel network file system. The POSIX compliant GlusterFS servers use XFS file system format to store data on disks. These servers be accessed using industry standard access protocols including Network File System (NFS) and Server Message Block SMB (also known as CIFS).

Red Hat Gluster Storage Servers for On-premises can be used in the deployment of private clouds or data centers. Red Hat Gluster Storage can be installed on commodity servers and storage hardware resulting in a powerful, massively scalable, and highly available NAS environment. Additionally, Red Hat Gluster Storage can be deployed in the public cloud using Red Hat Gluster Storage Server for Public Cloud with Amazon Web Services (AWS), Microsoft Azure, or Google Cloud. It delivers all the features and functionality possible in a private cloud or data center to the public cloud by providing massively scalable and high available NAS in the cloud.

### Red Hat Gluster Storage Server for On-premises

Red Hat Gluster Storage Server for On-premises enables enterprises to treat physical storage as a virtualized, scalable, and centrally managed pool of storage by using commodity servers and storage hardware.

### Red Hat Gluster Storage Server for Public Cloud

Red Hat Gluster Storage Server for Public Cloud packages GlusterFS for deploying scalable NAS in AWS, Microsoft Azure, and Google Cloud. This powerful storage server provides a highly available, scalable, virtualized, and centrally managed pool of storage for users of these public cloud providers.

## Chapter 2. What Changed in this Release?

### 2.1. What's New in this Release?

This section describes the key features and enhancements in the Red Hat Gluster Storage 3.1 Update 3 release.

#### RESTful Volume Management with Heketi

Heketi provides a RESTful management interface for managing Red Hat Gluster Storage volume life cycles. This interface allows cloud services like OpenStack Manila, Kubernetes, and OpenShift to dynamically provision Red Hat Gluster Storage volumes. For details about this technology preview, see the *Red Hat Gluster Storage 3.1 Administration Guide*:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/ch06s02.html](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/ch06s02.html).

#### Tiering

Red Hat Gluster Storage now provides the ability to automatically classify and migrate files based on how frequently those files are accessed. This allows frequently accessed files to be migrated to higher performing disks (the hot tier), and rarely accessed files to be stored on disks with lower performance (the cold tier). This enables faster response times, reduced latency, greater storage efficiency, and reduced deployment and operating costs. For more information about tiering, see the *Red Hat Gluster Storage 3.1 Administration Guide*:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/chap-Managing\\_Data\\_Tiering.html](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/chap-Managing_Data_Tiering.html).

#### Writable Snapshots

Red Hat Gluster Storage snapshots can now be cloned and made writable by creating a new volume based on an existing snapshot. Clones are space efficient, as the cloned volume and original snapshot share the same logical volume back end, only consuming additional space as the clone diverges from the snapshot. For more information, see the *Red Hat Gluster Storage 3.1 Administration Guide*:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/).

#### Red Hat Gluster Storage for Containers

As of Red Hat Gluster Storage 3.1 Update 2, Red Hat Gluster Storage can now be set up in a container on either Red Hat Enterprise Linux Atomic Host 7.2 or Red Hat Enterprise Linux Server 7.2. Containers use the shared kernel concept and use system resources more efficiently than hypervisors. Containers rest on top of a single Linux instance and allow applications to use the same Linux kernel as the system that they are running on. This improves the overall efficiency of the system and reduces space consumption.

#### BitRot scrubber status

The BitRot scrubber command (`gluster volume bitrot VOLNAME scrub status`) can now display scrub process statistics and list identified corrupted files, allowing administrators to locate and repair corrupted files more easily. See the *Red Hat Gluster Storage 3.1 Administration Guide* for details:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/chap-Detecting\\_Data\\_Corruption.html](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/chap-Detecting_Data_Corruption.html).

#### Samba Asynchronous I/O enabled by default

Red Hat Gluster Storage now supports and enables asynchronous I/O with Samba by default (**aioread size = 4096**). Asynchronous I/O can enable increased throughput on multi-threaded clients, or when multiple programs access the same share. This improves default performance for most users of Samba and Red Hat Gluster Storage.

### Console Virtual Appliance

Red Hat Gluster Storage Console now provides a virtual appliance that can be used to quickly set up a pre-installed and partially configured Red Hat Gluster Storage Console. This also enables offline installation of the Red Hat Gluster Storage Console on virtual machines managed by Red Hat Enterprise Virtualization Management. See the *Red Hat Gluster Storage 3.1 Console Installation Guide* for details: [https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Gluster\\_Storage/3.1/html/Console\\_Installation\\_Guide/chap-Red\\_Hat\\_Gluster\\_Storage\\_Console\\_Installation-OVA.html](https://access.redhat.com/documentation/en-US/Red_Hat_Gluster_Storage/3.1/html/Console_Installation_Guide/chap-Red_Hat_Gluster_Storage_Console_Installation-OVA.html)

## 2.2. Deprecated Features

The following features are considered deprecated as of Red Hat Gluster Storage 3.1 Update 2. See each item for details about the likely removal timeframe of the feature.

### Hortonworks Data Platform (HDP)

Support for Hortonworks Data Platform (HDP) on Red Hat Gluster Storage integrated using the Hadoop Plug-In is deprecated as of Red Hat Gluster Storage 3.1 Update 2, and is unlikely to be supported in the next major release. Red Hat discourages further use of this plug-in for deployments where Red Hat Gluster Storage is directly used for holding analytics data for running in-place analytics. However, Red Hat Gluster Storage can be used as a general purpose repository for holding analytics data and as a companion store where the bulk of the data is stored and then moved to Hadoop clusters for analysis when necessary.

### CTDB 2.5

As of Red Hat Gluster Storage 3.1 Update 2, CTDB version 2.5 is no longer supported. To continue using CTDB in Red Hat Gluster Storage 3.1 Update 2 and later, upgrade to CTDB version 4, provided in the following channels and repositories:

- RHN channel for Red Hat Enterprise Linux 6: **rhel-x86\_64-server-6-rh-gluster-3-samba**
- RHN channel for Red Hat Enterprise Linux 7: **rhel-x86\_64-server-7-rh-gluster-3-samba**
- Subscription Management repository for Red Hat Enterprise Linux 6: **rh-gluster-3-samba-for-rhel-6-server-rpms**
- Subscription Management repository for Red Hat Enterprise Linux 7: **rh-gluster-3-samba-for-rhel-7-server-rpms**



## Chapter 3. Known Issues

This chapter provides a list of known issues at the time of release.

## Chapter 4. Technology Previews

This chapter provides a list of all available Technology Preview features in this release.

Technology Preview features are currently not supported under Red Hat Gluster Storage subscription services, may not be functionally complete, and are generally not suitable for production environments. However, these features are included for customer convenience and to provide wider exposure to the feature.

Customers may find these features useful in a non-production environment. Customers are also free to provide feedback and functionality suggestions for a Technology Preview feature before it becomes fully supported. Errata will be provided for high-severity security issues.

During the development of a Technology Preview feature, additional components may become available to the public for testing. Red Hat intends to fully support Technology Preview features in the future releases.



### Note

All Technology Preview features in Red Hat Enterprise Linux 6.7, 7.1, and 7.2 are also considered technology preview features in Red Hat Gluster Storage 3.1. For more information on the technology preview features available in Red Hat Enterprise Linux 6.7, see the *Technology Previews* chapter of the *Red Hat Enterprise Linux 6.7 Technical Notes*: [https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Enterprise\\_Linux/6/html/6.7\\_Technical\\_Notes/technology-previews.html](https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/6/html/6.7_Technical_Notes/technology-previews.html)

### 4.1. Replicated Volumes with Replica Count greater than 3

The replicated volumes create copies of files across multiple bricks in the volume. It is recommended that you use replicated volumes in environments where high-availability and high reliability are critical. Creating replicated volumes with replica count more than 3 is under technology preview.

For more information, see the *Red Hat Gluster Storage 3.1 Administration Guide*:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/sect-Creating\\_Replicated\\_Volumes.html](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/sect-Creating_Replicated_Volumes.html)

### 4.2. Stop Remove Brick Operation

You can stop a remove brick operation after you have opted to remove a brick through the Command Line Interface and Red Hat Gluster Storage Console. After executing a remove-brick operation, you can choose to stop the remove-brick operation by executing the **remove-brick stop** command. The files that are already migrated during remove-brick operation, will not be reverse migrated to the original brick.

For more information, see the *Red Hat Gluster Storage 3.1 Administration Guide*:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/sect-Shrinking\\_Volumes.html#Stopping\\_a\\_remove-brick\\_Operation](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/sect-Shrinking_Volumes.html#Stopping_a_remove-brick_Operation).

### 4.3. Read-only Volume

Red Hat Gluster Storage enables you to mount volumes with read-only permission. While mounting the client, you can mount a volume as read-only and also make the entire volume as read-only, which applies for all the clients using the **volume set** command.

### 4.4. pNFS



The Parallel Network File System (pNFS) is part of the NFS v4.1 protocol that allows compute clients to access storage devices directly and in parallel.

For more information, see the *Red Hat Gluster Storage 3.1 Administration Guide*:

[https://access.redhat.com/documentation/en-US/Red\\_Hat\\_Storage/3.1/html/Administration\\_Guide/sect-NFS.html#sect-NFS\\_Ganesha](https://access.redhat.com/documentation/en-US/Red_Hat_Storage/3.1/html/Administration_Guide/sect-NFS.html#sect-NFS_Ganesha)

## 4.5. Non Uniform File Allocation

When a client on a server creates files, the files are allocated to a brick in the volume based on the file name. This allocation may not be ideal, as there is higher latency and unnecessary network traffic for read/write operations to a non-local brick or export directory. NUFA ensures that the files are created in the local export directory of the server, and as a result, reduces latency and conserves bandwidth for that server accessing that file. This can also be useful for applications running on mount points on the storage server.

If the local brick runs out of space or reaches the minimum disk free limit, instead of allocating files to the local brick, NUFA distributes files to other bricks in the same volume if there is space available on those bricks. You must enable NUFA before creating any data in the volume.

## Appendix A. Revision History

<b>Revision 3.1-3</b>	<b>Mon Mar 13 2017</b>	<b>Bhavana Mohan</b>
Removed the heketi tech preview details for BZ# 1413878		
<b>Revision 3.1-0</b>	<b>Tue Mar 01 2015</b>	<b>Laura Bailey</b>
Initial creation of release notes document for Red Hat Gluster Storage 3.1 Update 3 release.		