Red Hat Storage 3
3.0 Release Notes

Release Notes for Red Hat Storage - 3.0

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Abstract

This Release Notes provides high-level coverage of the improvements and additions that have been implemented in Red Hat Storage 3.0.

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Preface

Chapter 1. Introduction

Red Hat Storage is a software only, scale-out storage solution that provides flexible and agile unstructured data storage for the enterprise. Red Hat 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 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 Storage Servers for On-premise can be used in the deployment of private clouds or data centers. Red Hat Storage can be installed on commodity servers and storage hardware resulting in a powerful, massively scalable, and highly available NAS environment. Additionally, Red Hat Storage can be deployed in the public cloud using Red Hat Storage Server for Public Cloud, for example, within the Amazon Web Services (AWS) 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 Storage Server for On-Premise

Red Hat Storage Server for On-Premise 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 Storage Server for Public Cloud

Red Hat Storage Server for Public Cloud packages GlusterFS as an Amazon Machine Image (AMI) for deploying scalable NAS in the AWS public cloud. This powerful storage server provides a highly available, scalable, virtualized, and centrally managed pool of storage for Amazon users.

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Chapter 2. What's New in this Release?

This chapter describes the key features added to Red Hat Storage 3.0.

- *Local Snapshots for disk based backup*

  Red Hat Storage Server's snapshot feature provides a point-in-time copy of Red Hat Storage volumes that enables file and volume restoration. Snapshots can be taken online. This means the filesystem (and its associated data) continue to be available for your applications and users, while snapshots are being taken. There is almost no impact to the user or applications regardless of the size of the volume when snapshots are taken.

  Red Hat Storage Server supports up to 256 snapshots per volume that provides a lot of flexibility on the frequency of backups of your data. A simple and intuitive command line interface for creating, managing and restoring snapshots are included in this release.

  Additionally, Red Hat Storage Server supports User Serviceable Snapshots or self service snapshots which is a technology preview feature for this release. This feature allows users other than administrators to recover one of more files in a volume. You can backup the snapshots taken on a Red Hat Storage volume easily to address data protection needs of the modern data center.

  Thin-p is the preferred provisioning mode for Red Hat Storage Server 3.0. Thick-p to thin-p migration is supported through documented steps. Red Hat Storage requires the kernel-2.6.32-431.17.1.el6 version or higher to be used on the system. Thick-p support will remain for 2.1.x to 3.0 upgrade scenarios where snapshots are not being used.

- *Monitoring using Nagios*

  The Red Hat Storage 3.0 introduces monitoring using Nagios - an open IT infrastructure monitoring framework. You can monitor logical entities and physical resources, get alerts and reports providing a historical record of outages, events, notifications, and also view trending and capacity planning graphs and reports.

  The Monitoring functionality based on Nagios and is packaged to work in conjunction with Red Hat Storage Console or can be set up to run in a standalone mode. You can also integrate it with your existing Nagios infrastructure or 3rd party management platforms.

  For more information on Monitoring using Nagios, see *Monitoring Red Hat Storage* chapter in *Red Hat Storage Administration Guide* and *Monitoring Red Hat Storage using Nagios* chapter in *Red Hat Storage Console Administration Guide*.

- *Hadoop Plug-in*

  Red Hat Storage 3.0 offers a Hadoop File System plug-in which enables Hadoop Distributions to run on Red Hat Storage. This plug-in is now fully supported. You can now run in-place analytics on data stored in a Red Hat Storage Server without incurring the overhead of preparing and moving data into a file system that is purpose built for running Hadoop workloads.

  The Hadoop distribution supported for this release of the storage server is HortonWorks Data Platform (HDP) 2.0.6 which bundles a management tool Apache Ambari 1.4.4. The services supported for Red Hat Storage Server include Pig, Hive, Mahout, Sqoop, Flume, Oozie and Zookeeper.

  For more information on Hadoop plug-in, see corresponding section in *Red Hat Storage Administration Guide*.

- *Non-disruptive Upgrade*

You can perform live upgrade to Red Hat Storage 3 release without incurring a downtime for certain usage scenarios. Users and applications will hardly see any impact while the upgrade process is being executed which will greatly simplify the process of absorbing a new release. The upgrade process will include the requisite instrumentation that are needed to switch from RHN (current entitlement system) to CDN (Red Hat's next generation entitlement management system).

For more information on Non-disruptive Upgrade, see corresponding section in *Red Hat Storage Installation Guide*.

- *Logging Enhancements*

  In Red Hat Storage 3.0, logging capabilities have been expanded to provide additional information for monitoring and troubleshooting Red Hat Storage Server nodes. Red Hat Storage Server has a new logging infrastructure with an online Error Messages guide. This guide includes the following details:

  - Message ID
  - Description
  - Recommended Action

  For more information on error messages, see *Red Hat Storage Error Message Guide*.

- *CDN based delivery of Red Hat Storage Server*

  Red Hat Storage Server 3.0 will be delivered via Red Hat's Content Delivery Network (CDN) and subscription management tooling for entitlement management. CDN makes it easier to manage and keep track of product entitlements and subscriptions.

  For more information on CDN based delivery of Red Hat Storage Server, see corresponding section in *Red Hat Storage Installation Guide*.

- *NFS Ganesha (Technology Preview refresh)*

  In this release, NFS Ganesha is being refreshed to include a number of significant enhancements and capabilities including dynamic configuration (addition and deletion of exports at run time), NFSv4 ACL's for glusterFS, glusterFS multi volume support, NFSv4 PseudoFS support and NFSv4/v3 kerberos authentication.

- *60 drives per server*

  You can now attach up to 60 disk drives to each Red Hat Storage Server (up from 36 disks in the older release) node. This enhances the supported storage capacity available for each subscribed Red Hat Storage server.

- *Hardware Compatibility*

  Expanded Hardware Compatibility List (HCL) and support for SSDs for creating Red Hat Storage bricks. You can run Red Hat Storage on more hardware systems than before and use SSDs that is supported by Red Hat Enterprise Linux to create bricks for workloads that demand high performance.

  For more information onHardware Compatibility, see *Hardware Compatibility* section in *Red Hat Storage Installation Guide*.

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Chapter 3. Known Issues

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

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3.1. Red Hat Storage

Issues related to Snapshot

- BZ# 1191033

  When a large number of snapshots are activated and are accessed via User Serviceable Snapshots, the inode limit for the mounted filesystem may get exhausted, causing the deletion of inode entries from the inode table. Accessing the **.snaps** directory when this happens may result in **ENOENT** errors in FUSE, and **Invalid Argument** errors in NFS.

  Workaround: Clear the kernel VFS cache by executing the following command:

  ```
  # echo 3 >/proc/sys/vm/drop_caches
  ```

- BZ# 1141433

  An incorrect output is displayed while setting the ***snap-max-hard-limit*** and ***snap-max-soft-limit*** options for volume or system/cluster.

  Example:

  - Command : **gluster snapshot config snap-max-hard-limit 100**

    Output : *snapshot config : System for snap-max-hard-limit set successfully*

    Expected Output : *snapshot config : snap-max-hard-limit for the cluster set successfully.*

  - Command : **gluster snapshot config vol1 snap-max-hard-limit 100**

    Output : *snapshot config : vol1 for snap-max-hard-limit set successfully.*

    Expected output : *snapshot config : snap-max-hard-limit for vol1 set successfully.*

  The same example is applicable for ***snap-max-soft-limit*** option also.

- BZ# 1133861

  New snap bricks fails to start if the total snapshot brick count in a node goes beyond 1K.

  Workaround: Deactivate unused snapshots.

- BZ# 1126789

  If any node or **glusterd** service is down when snapshot is restored then any subsequent snapshot creation fails.

  Workaround: Do not restore a snapshot, if node or **glusterd** service is down.

- BZ# 1122064

  The snapshot volumes does not handshake based on versions. If a node or glusterd service is down when snapshot activate or deactivate command executed, the node on which the command

was executed is not updated when the node or glusterd service is up and continues to be in the same state.

- BZ# 1139624

  While taking snapshot of a gluster volume, it creates another volume which is similar to the original volume. Gluster volume consumes some amount of memory when it is in started state, so as Snapshot volume. Hence, the system goes to out of memory state.

  Workaround: Deactivate unused snapshots to reduce the memory foot print.

- BZ# 1129675

  If glusterd is down in one of the nodes in cluster or if the node itself is down, then performing a snapshot restore operation leads to the inconsistencies:

  - Executing **`gluster volume heal`** ***`vol-name`*** **`info`** command displays the error message *Transport endpoint not connected*.
  - Error occurs when clients try to connect to glusterd service.

  Workaround: Perform snapshot restore only if all the nodes and their corresponding glusterd services are running.

  Restart glusterd service using **`# service glusterd start`** command.

- BZ# 1105543

  When a node with old snap entry is attached to the cluster, the old entries are propagated throughout the cluster and old snapshots which are not present are displayed.

  Workaround: Do not attach a peer with old snap entries.

- BZ# 1104191

  The Snapshot command fails if snapshot command is run simultaneously from multiple nodes when high write or read operation is happening on the origin or parent volume.

  Workaround: Avoid running multiple snapshot commands simultaneously from different nodes.

- BZ# 1059158

  The **`NFS mount`** option is not supported for snapshot volumes.

- BZ# 1114015

  A wrong warning message, *Changing snapshot-max-hard-limit will lead to deletion of snapshots if they exceed the new limit. Do you want to continue? (y/n)* is displayed while setting the configuration options (snap-max-hard-limit, snap-max-soft-limit) for system or volume. The snapshot will not be deleted even if configuration values are changed.

- BZ# 1113510

  The output of **`gluster volume info`** information (snap-max-hard-limit and snap-max-soft-limit) even though the values that are not set explicitly and must not be displayed.

- BZ# 1111479

  Attaching a new node to the cluster while snapshot delete was in progress, deleted snapshots successfully but gluster snapshot list shows some of the snaps are still present.

Workaround: Do not attach or detach new node to the trusted storage pool operation while snapshot is in progress.

- BZ# 1092510

  If you create a snapshot when the rename of directory is in progress (here, its complete on hashed subvolume but not on all of the subvolumes), on snapshot restore, directory which was undergoing rename operation will have same GFID for both source and destination. Having same GFID is an inconsistency in DHT and can lead to undefined behavior.

  This is since in DHT, a rename (source, destination) of directories is done first on hashed-subvolume and if successful, then on rest of the subvolumes. At this point in time, if you have both source and destination directories present in the cluster with same GFID - destination on hashed-subvolume and source on rest of the subvolumes. A parallel lookup (on either source or destination) at this time can result in creation of directories on missing subvolumes - source directory entry on hashed and destination directory entry on rest of the subvolumes. Hence, there would be two directory entries - source and destination - having same GFID.

- BZ# 1104635

  During snapshot delete, if a node goes down, the snapshot delete command fails. Stale entries would be present in the node which went down and when the node comes back online, the stale entry is propagated to other nodes and this results an invalid snapshot entry which may not be deletable using CLI.

  Workaround: Manually delete the snapshot, including the back-end LVM, from all the nodes and restart **`glusterd`** service on all nodes.

Issues related to Nagios

- BZ# 1139228

  If host names are not unique and IP address is used as the hostname in Nagios by auto-config, detaching the Host used for discovery removes all the hosts from the Nagios configuration when auto-discovery is performed.

  Workaround: Ensure that host names are unique before performing auto-discovery. Also run discovery.py script with different host after removing the synchronized host from cluster.

- BZ# 1138943

  The discovery.py script does not verify the correctness of email configuration files and does not restart Nagios but displays a message that Nagios was restarted.

  Workaround: Ensure that there are no configuration errors by running **`nagios -v /etc/nagios/nagios.cfg`** command before running *discovery.py* script. Execute this command only if any configuration change is performed manually.

- BZ# 1119233

  The scale of the cluster utilization changes as the utilization changes. This is because the scale of the graph is not fixed in the php template.

- BZ# 1136207

  Volume status service shows *All bricks are Up* message even when some of the bricks are in unknown state due to unavailability of glusterd service.

- BZ# 1109683

When a volume has a large number of files to heal, the **`volume self heal info`** command takes time to return results and the nrpe plug-in times out as the default timeout is 10 seconds.

Workaround:

In **`/etc/nagios/gluster/gluster-commands.cfg`** increase the timeout of nrpe plug-in to 10 minutes by using the -t option in the command.

Example:$USER1$/gluster/check_vol_server.py $ARG1$ $ARG2$ -o self-heal -t 600

- BZ# 1136205

  The Nagios plug-in sends the volume status request to the Red Hat Storage node without converting the Nagios hostname to the respective ip address and when glusterd service is stopped on one Red Hat Storage node, the volume status is displayed with WARNING status and status information as (null).

- BZ# 1109843

  Volume Utilization is retrieved from one of the randomly selected nodes in the cluster. If the request fails due to some reason(volume unavailable/stopped, or glusterd is not running), the plug-in selects the next node in the cluster until it gets a successful response. In this case, if fetching volume utilization for the first host fails, subsequent requests also fails as request is send to a unresolvable hostname.

- BZ# 1094765

  When certain commands invoked by Nagios plug-ins fail, irrelevant outputs are displayed as part of performance data.

- BZ# 1107605

  Executing **`sadf`** command used by the Nagios plug-ins returns invalid output.

  Workaround: Delete the datafile located at **`/var/log/sa/saDD`** where DD is current date. This deletes the datafile for current day and a new datafile is automatically created and which is usable by Nagios plug-in.

- BZ# 1107577

  The Volume self heal service returns a WARNING when there unsynchronized entries are present in the volume, even though these files may be synchronized during the next run of self-heal process if **`self-heal`** is turned on in the volume.

- BZ# 1109744

  Notification message is sent only once regarding quorum loss and not for each volume.

- BZ# 1121009

  In Nagios, CTDB service is created by default for all the gluster nodes regardless of whether CTDB is enabled on the Red Hat Storage node or not.

- BZ# 1089636

  In the Nagios GUI, incorrect status information is displayed as *Cluster Status OK : None of the Volumes are in Critical State*, when volumes are utilized beyond critical level.

- BZ# 1109739

Cluster quorum monitoring Nagios plug-in displays only the latest messages received, so the user is unable to determine all the volumes for which quorum is lost.

Workaround:

Event log contains the list of the messages received. Also, if quorum is lost on a cluster, all volumes with **`quorum-type`** server will be affected.

- BZ# 1109723

  Auto Configuration does not work if glusterd service is down on any of the nodes in the trusted storage pool.

- BZ# 1079289

  When the memory utilization is very high, some or all the services may go to critical state and display the message: *CHECK_NRPE: Socket timeout after 10 seconds.*

- BZ# 1105568

  When glusterFS Management service is offline, an incorrect status information is displayed for the following Nagios services: CTDB, NFS, Quota, SMB, and Self Heal. The following status message is displayed:

  UNKNOWN: Brick - None status could not be determined instead of *UNKNOWN: Service Name - status could not be determined*.

- BZ# 1106421

  When cluster.quorum-type is set to none for all volumes in the cluster, the Cluster quorum monitoring plug-in only receives passive checks based on *rsyslog* messages and hence remains in Pending state as there are no service notifications available.

- BZ# 1085331

  Volume Utilization graph displays the error *perfdata directory for host_directory for host_name does not exist*, when volume utilization data is not available.

- BZ# 1111828

  In Nagios GUI, Volume Utilization graph displays an error when volume is restored using its snapshot.

Issues related to Rebalancing Volumes

- BZ# 1140517

  The **`rebalance status`** command displays an incorrect value for the number of skipped files.

- BZ# 1110282

  Executing **`rebalance status`** command, after stopping rebalance process, fails and displays a message that the rebalance process is not started.

- BZ# 1140531

  Extended attributes set on a file while it is being migrated during a rebalance operation are lost.

  `Workaround`: Reset the extended attributes on the file once the migration is complete.

- BZ# 1136714

Any hard links created to a file while the file is being migrated will be lost once the migration is completed. Creating a hard link to a file while it is being migrated and deleting the original file name while the file is being migrated causes file deletion.

Workaround: Do not create hard links or use software that created hard links to a file while it is being migrated.

- Rebalance does not proceed if any of the subvolumes of dht in the volume are down. This could be any brick in the case of a pure distributed volume. In a distributed replicated set, rebalance will proceed as long as at least one brick of each replica set is up.

  While running rebalance on a volume, ensure that all the bricks of the volume are in the operating or connected state.

- BZ# 960910

  After executing **rebalance** on a volume, running the **rm -rf** command on the mount point to remove all of the content from the current working directory recursively without being prompted may return *Directory not Empty* error message.

- BZ# 862618

  After completion of the rebalance operation, there may be a mismatch in the failure counts reported by the **gluster volume rebalance status** output and the rebalance log files.

- BZ# 1039533

  While Rebalance is in progress, adding a brick to the cluster displays an error message, **failed to get index** in the gluster log file. This message can be safely ignored.

- BZ# 1064321

  When a node is brought online after rebalance, the status displays that the operation is completed, but the data is not rebalanced. The data on the node is not rebalanced in a remove-brick rebalance operation and running commit command can cause data loss.

  Workaround: Run the **rebalance** command again if any node is brought down while rebalance is in progress, and also when the rebalance operation is performed after remove-brick operation.

Issues related to Geo-replication

- BZ# 1102524

  The Geo-replication worker goes to faulty state and restarts when resumed. It works as expected when it is restarted, but takes more time to synchronize compared to resume.

- BZ# 1102594

  The Geo-replication does not log the list of files which were not synchronized to slave.

- BZ# 1104112

  The Geo-replication status command does not display information on the non-root user to which session is established, it shows only the information on master and slave nodes.

- BZ# 1128156

  If ssh **authorized_keys** file is configured in different location other than **$HOME/.ssh/authorized_keys**, Geo-replication fails to find the ssh keys and fails to establish session to slave.

Workaround: Save authorized keys in **$HOME/.ssh/authorized_keys** for Geo-replication setup.

Issues related to Self-heal

- BZ# 877895

  When one of the bricks in a replicate volume is offline, the **ls -lR** command from the mount point reports *Transport end point not connected*.

  When one of the two bricks under replication goes down, the entries are created on the other brick. The Automatic File Replication translator remembers that the directory that is down contains stale data. If the brick that is online is killed before the self-heal happens on that directory, operations like *readdir()* fail.

- BZ# 1063830

  Performing add-brick or remove-brick operations on a volume having replica pairs when there are pending self-heals can cause potential data loss.

  Workaround: Ensure that all bricks of the volume are online and there are no pending self-heals. You can view the pending heal info using the command **gluster volume heal *volname* info**.

- BZ# 1065501

  While self-heal is in progress on a mount, the mount may crash if **cluster.data-self-heal** is changed from *off* to *on* using volume set operation.

  Workaround: Ensure that no self-heals are required on the volume before modifying **cluster.data-self-heal**.

Issues related to replace-brick operation

- After the **gluster volume replace-brick *VOLNAME* Brick *New-Brick* commit force** command is executed, the file system operations on that particular volume, which are in transit, fail.
- After a replace-brick operation, the stat information is different on the NFS mount and the FUSE mount. This happens due to internal time stamp changes when the **replace-brick** operation is performed.

Issues related to Directory Quota

- BZ# 1146830

  Enabling Quota on Red Hat Storage 3.0 does not create **pgfid** extended attributes on existing data. The **pgfid** extended attributes are used to construct the ancestry path (from the file to the volume root) for nameless lookups on files. As NFS relies on nameless lookups heavily, quota enforcement through NFS would be inconsistent if quota were to be enabled on a volume with existing data.

  This issue is not seen if quota is enabled on Red Hat Storage 2.1 before upgrading to Red Hat Storage 3.0 as Red Hat Storage 2.1 creates the **pgfid** extended attributes on existing data

  Enable quota on Red Hat Storage 2.1 and then upgrade to Red Hat Storage 3.0.

- BZ# 1001453

  Truncating a file to a larger size and writing to it violates the quota hard limit. This is since the

XFS pre-allocation logic applied on the truncated file does not extract the actual disk space it consumed.

- BZ# 1003755

  Directory Quota feature does not work well with hard links. With a directory that has Quota limit set, the disk usage seen with the **`du -hs` *`directory`*** command and the disk usage seen with the **`gluster volume quota` *`VOLNAME`* `list` *`directory`*** command may differ. It is recommended that applications writing to a volume with directory quotas enabled, do not use hard links.

- BZ# 1016419

  Quota does not account for the disk blocks consumed by a directory. Even if a directory grows in size because of the creation of new directory entries, the size as accounted by quota does not change. You can create any number of empty files but you will not be able to write to the files once you reach the quota hard limit. For example, if the quota hard limit of a directory is 100 bytes and the disk space consumption is exactly equal to 100 bytes, you can create any number of empty files without exceeding quota limit.

- BZ# 1020275

  Creating files of different sizes leads to the violation of the quota hard limit.

- BZ# 1021466

  After setting Quota limit on a directory, creating sub directories and populating them with files and renaming the files subsequently while the I/O operation is in progress causes a quota limit violation.

- BZ# 998893

  Zero byte sized files are created when a write operation exceeds the available quota space. Since Quota does not account for the disk blocks consumed by a directory(as per Bug 1016419), the write operation creates the directory entry but the subsequent write operation fails because of unavailable disk space.

- BZ# 1023430

  When a quota directory reaches its limit, renaming an existing file on that directory leads to Quota violation. This is because the renamed is treated as a new file.

- BZ# 998791

  During a file rename operation if the hashing logic moves the target file to a different brick, then the rename operation fails if it is initiated by a non-root user.

- BZ# 999458

  Quota hard limit is violated for small quota sizes in the range of 10 MB to 100 MB.

- BZ# 1020713

  In a distribute or distribute replicate volume, while setting quota limit on a directory, if one or more bricks or one or more replica sets respectively, experience downtime, quota is not enforced on those bricks or replica sets, when they are back online. As a result, the disk usage exceeds the quota limit.

  Workaround: Set quota limit again after the brick is back online.

- BZ# 1032449

  In the case when two or more bricks experience a downtime and data is written to their replica bricks, invoking the quota list command on that multi-node cluster displays different outputs after the bricks are back online.

Issues related to NFS

- After you restart the NFS server, the unlock within the grace-period feature may fail and the locks help previously may not be reclaimed.
- **fcntl** locking (NFS Lock Manager) does not work over IPv6.
- You cannot perform NFS mount on a machine on which glusterfs-NFS process is already running unless you use the NFS mount **-o nolock** option. This is because glusterfs-nfs has already registered NLM port with portmapper.
- If the NFS client is behind a NAT (Network Address Translation) router or a firewall, the locking behavior is unpredictable. The current implementation of NLM assumes that Network Address Translation of the client's IP does not happen.
- **nfs.mount-udp** option is disabled by default. You must enable it to use posix-locks on Solaris when using NFS to mount on a Red Hat Storage volume.
- If you enable the **nfs.mount-udp** option, while mounting a subdirectory (exported using the **nfs.export-dir** option) on Linux, you must mount using the **-o proto=tcp** option. UDP is not supported for subdirectory mounts on the GlusterFS-NFS server.
- For NFS Lock Manager to function properly, you must ensure that all of the servers and clients have resolvable hostnames. That is, servers must be able to resolve client names and clients must be able to resolve server hostnames.
- BZ# 1040418

  The length of the argument to **nfs.export-dir** (or any other gluster set option) is limited to internal buffer size of the Linux shell. In a typical set up, the default size of this buffer is 131072 bytes.

Issues related to nfs-ganesha

- BZ# 1116374

  The nfs-ganesha daemon crashes if started in NIV_FULL_DEBUG level.

  Workaround: Use other log levels supported by nfs-ganesha while starting the server.

- BZ# 1116336

  The nfs-ganesha process is remains active after setting ***nfs-ganesha.enable*** to **off** as executing ***kill -s TERM*** command does not kill nfs-ganesha.

  Workaround: Use kill -9 on the process ID of ganesha.nfsd process and then use CLI options to export new entries.

- BZ# 1115901

  Multi-node nfs-ganesha is not supported in this release.

  Workaround: In a multi-node volume setup, perform all CLI commands and steps on one of the nodes only.

- BZ# 1114574

  Executing **`rpcinfo -p`** command after stopping nfs-ganesha displays NFS related programs

  Workaround: Run **`rpcinfo -d`** command each of the NFS related services listed in **`rpcifnfo -p`** and start the Red Hat Storage volume forcefully using the following command:

  ```
  # gluster vol start volume force
  ```

- BZ# 1091936

  When ACL support is enabled, getattr of ACL attribute on the files with no ACLs set return value as NULL. This leads to discrepancies while trying to read ACLs on the files present in the system.

- BZ# 1054124

  After files and directories are created on the mount point with root-squash enabled for nfs-ganesha, executing **`ls`** command displays **`user:group`** as **`4294967294:4294967294`** instead of **`nfsnobody:nfsnobody`**. This is because the client maps only 16 bit unsigned representation of -2 to nfsnobody whereas 4294967294 is 32 bit equivalent of -2. This is currently a limitation in upstream nfs-ganesha 2.0 and will be fixed in the future release.

- BZ# 1054739

  As multiple sockets are used with *nfs-ganesha*, executing **`showmount -e`** command displays duplicate information.

Issues related to Object Store

- The GET and PUT commands fail on large files while using Unified File and Object Storage.

  Workaround: You must set the ***`node_timeout=60`*** variable in the proxy, container, and the object server configuration files.

Issues related to distributed Geo-replication

- BZ# 984591

  After stopping a Geo-replication session, if the files synced to the slave volume are renamed then when Geo-replication starts again, the renamed files are treated anew, (without considering the renaming) and synced on to the slave volumes again. For example, if 100 files were renamed, you would find 200 files on the slave side.

- BZ# 987929

  While the **`rebalance`** process is in progress, starting or stopping a Geo-replication session results in some files not get synced to the slave volumes. When a Geo-replication sync process is in progress, running the **`rebalance`** command causes the Geo-replication sync process to stop. As a result, some files do not get synced to the slave volumes.

- BZ# 1029799

  Starting a Geo-replication session when there are tens of millions of files on the master volume takes a long time to observe the updates on the slave mount point.

- BZ# 1026072

The Geo-replication feature keeps the status details including the **changelog** entires in the **/var/run/gluster** directory. On Red Hat Storage Server, this directory is a **tmpfs** mountpoint, therefore there is a data loss after a reboot.

- BZ# 1027727

  When there are hundreds of thousands of hard links on the master volume prior to starting the Geo-replication session, some hard links are not getting synchronized to the slave volume.

- BZ# 1029899

  During a Geo-replication session, after you set the checkpoint, and subsequently when one of the active nodes goes down, the passive node replaces the active node. At this point the checkpoint for replaced node is displayed as invalid.

- BZ# 1030256

  During a Geo-replication session, when create and write operations are in progress, if one of the active nodes goes down, there is a possibility for some files to undergo a synchronization failure to the slave volume.

- BZ# 1063028

  When geo-replication session is running between master and slave, ACLs on the master volume are not reflected on the slave as ACLs (which are extended attributes) are not synced to the slave by Geo replication.

- BZ# 1056226

  User-set xattrs are not synced to the slave as Geo-replication does not process **SETXATTR** fops in changelog (and in hybrid crawl).

- BZ# 1063229

  After the upgrade, two Geo-replication monitor processes run for the same session. Both process try to use the same **xsync changelog** file to record the changes.

  Workaround: Before running **geo-rep create force** command, kill the Geo-replication monitor process.

Issues related to Red Hat Storage Volumes:

- BZ# 877988

  Entry operations on replicated bricks may have a few issues with **md-cache** module enabled on the volume graph.

  For example: When one brick is down, while the other is up an application is performing a hard link call ***link()*** would experience EEXIST error.

  Workaround: Execute this command to avoid this issue:

  ```
  # gluster volume set VOLNAME stat-prefetch off
  ```

- BZ# 986090

  Currently, the Red Hat Storage server has issues with mixed usage of hostnames, IPs and FQDNs to refer to a peer. If a peer has been probed using its hostname but IPs are used during add-brick, the operation may fail. It is recommended to use the same address for all the operations, that is, during peer probe, volume creation, and adding/removing bricks. It is preferable if the address is

correctly resolvable to a FQDN.

- BZ# 882769

  When a volume is started, by default the NFS and Samba server processes are also started automatically. The simultaneous use of Samba or NFS protocols to access the same volume is not supported.

  Workaround: You must ensure that the volume is accessed either using Samba or NFS protocols.

- BZ# 852293

  The management daemon does not have a rollback mechanism to revert any action that may have succeeded on some nodes and failed on the those that do not have the brick's parent directory. For example, setting the **`volume-id`** extended attribute may fail on some nodes and succeed on others. Because of this, the subsequent attempts to recreate the volume using the same bricks may fail with the error *brickname or a prefix of it is already part of a volume*.

  Workaround:

  - You can either remove the brick directories or remove the glusterfs-related extended attributes.
  - Try creating the volume again.

- BZ# 994950

  An input-output error is seen instead of the Disk quota exceeded error when the quota limit exceeds. This issue is fixed in the Red Hat Enterprise Linux 6.5 Kernel.

- BZ# 913364

  An NFS server reboot does not reclaim the file LOCK held by a Red Hat Enterprise Linux 5.9 client.

- BZ# 896314

  GlusterFS Native mount in Red Hat Enterprise Linux 5.x shows lower performance than the RHEL 6.x versions for high burst I/O applications. The FUSE kernel module on Red Hat Enterprise Linux 6.x has many enhancements for dynamic write page handling and special optimization for large burst of I/O.

  Workaround: It is recommended that you use Red Hat Enterprise Linux 6.x clients if you observe a performance degradation on the Red Hat Enterprise Linux 5.x clients.

- BZ# 1017728

  On setting the quota limit as a decimal digit and setting the ***`deem-statfs`*** on, a difference is noticed in the values displayed by the **`df -h`** command and **`gluster volume quota VOLNAME list`** command. In case of the **`gluster volume quota VOLNAME list`** command, the values do not get rounded off to the next integer.

- BZ# 1030438

  On a volume, when read and write operations are in progress and simultaneously a rebalance operation is performed followed by a remove-brick operation on that volume, then the **`rm -rf`** command fails on a few files.

- BZ# 1100590

  The **`cp -a`** operation from the NFS mount point hangs if barrier is already enabled.

Issues related to POSIX ACLs:

- Mounting a volume with **`-o acl`** can negatively impact the directory read performance. Commands like recursive directory listing can be slower than normal.
- When POSIX ACLs are set and multiple NFS clients are used, there could be inconsistency in the way ACLs are applied due to attribute caching in NFS. For a consistent view of POSIX ACLs in a multiple client setup, use the **`-o noac`** option on the NFS mount to disable attribute caching. Note that disabling the attribute caching option could lead to a performance impact on the operations involving the attributes.

Issues related to Samba

- BZ# 1013151

  Accessing a Samba share may fail if GlusterFS is updated while Samba is running.

  Workaround: On each node where GlusterFS is updated, restart Samba services after GlusterFS is updated.

- BZ# 994990

  When the same file is accessed concurrently by multiple users for reading and writing. The users trying to write to the same file will not be able to complete the write operation because of the lock not being available.

  Workaround: To avoid the issue, execute the command:

  ```
  # gluster volume set VOLNAME storage.batch-fsync-delay-usec 0
  ```

- BZ# 1031783

  If Red Hat Storage volumes are exported by Samba, NT ACLs set on the folders by Microsoft Windows clients do not behave as expected.

General issues

- If files and directories have different GFIDs on different back-ends, the glusterFS client may hang or display errors.

  Contact Red Hat Support for more information on this issue.

- BZ# 920002

  The POSIX compliance tests fail in certain cases on Red Hat Enterprise Linux 5.9 due to mismatched timestamps on FUSE mounts. These tests pass on all the other Red Hat Enterprise Linux 5.x and Red Hat Enterprise Linux 6.x clients.

- BZ# 916834

  The **`quick-read`** translator returns stale file handles for certain patterns of file access. When running the *dbench* application on the mount point, a *dbench: read fails on handle 10030* message is displayed.

  Work Around: Use the command below to avoid the issue:

  ```
  # gluster volume set VOLNAME quick-read off
  ```

- BZ# 1030962

On installing the Red Hat Storage Server from an ISO or PXE, the **kexec-tools** package for the **kdump** service gets installed by default. However, the ***crashkernel=auto*** kernel parameter required for reserving memory for the **kdump** kernel, is not set for the current kernel entry in the bootloader configuration file, **/boot/grub/grub.conf**. Therefore the **kdump** service fails to start up with the following message available in the logs.

```
kdump: No crashkernel parameter specified for running kernel
```

Workaround: After installing the Red Hat Storage Server, the ***crashkernel=auto***, or an appropriate ***crashkernel=sizeM*** kernel parameter can be set manually for the current kernel in the bootloader configuration file. After that, the Red Hat Storage Server system must be rebooted, upon which the memory for the **kdump** kernel is reserved and the **kdump** service starts successfully. Refer to the following link for more information on Configuring kdump on the Command Line

Additional information: On installing a new kernel after installing the Red Hat Storage Server, the ***crashkernel=auto*** kernel parameter is successfully set in the bootloader configuration file for the newly added kernel.

- BZ# 866859

  The sosreport behavior change (to glusterfs and sosreport) is altered in the statedump behavior configuration file (**glusterdump.optionsfile**) and it is placed in */tmp*. This file has information on the path and options you can set on the behavior of the **statedump** file. The *glusterfs* daemon searches for this file and subsequently places the **statedump** information in the specified location. Workaround: Change the configurations in *glusterfs* daemon to make it look at */usr/local/var/run/gluste*r for **glusterdump.options** file by default. No changes to be performed to make sosreport write its configuration file in */usr/local/var/run/gluster* instead of */tmp*.

- BZ# 1054759

  A vdsm-tool crash report is detected by Automatic Bug Reporting Tool (ABRT) in Red Hat Storage Node as the **/etc/vdsm/vdsm.id** file was not found during the first time.

  Workaround: Execute the command **/usr/sbin/dmidecode -s system-uuid > /etc/vdsm/vdsm.id** before adding the node to avoid the vdsm-tool crash report.

- BZ# 1058032

  While migrating VMs, libvirt changes the ownership of the guest image, unless it detects that the image is on a shared filesystem and the VMs can not access the disk imanges as the required ownership is not available.

  Workaround: Perform the steps:

  - Power-off the VMs before migration.
  - After migration is complete, restore the ownership of the VM Disk Image (107:107)
  - Start the VMs after migration.

- BZ# 990108

  Volume options that begin with *user.** are considered user options and these options cannot be reset as there is no way of knowing the default value.

- BZ# 1065070

The **python-urllib3** package fails to downgrade and this in turn results in Red Hat Storage downgrade process failure.

Workaround: Move the **/usr/lib/python2.6/site-packages/urllib3*** to **/tmp** and perform a fresh installation of the **python-urllib3** package.

- BZ# 1101914

  The Red Hat Storage Server returns generic REST response as *503 Service Unavailable* instead of returning specific error response for filesystem errors.

- BZ# 1086159

  The glusterd service crashes when volume management commands are executed concurrently with peer commands.

- BZ# 1132178

  The Red Hat Storage 3.0 build of CTDB does not perform deterministic IP failback. When the node status changes to HEALTHY, it may not have the same IP address(es) as it had previously.

- BZ# 1130270

  If a 32 bit Samba package is installed before installing Red Hat Storage Samba package, the installation fails as Samba packages built for Red Hat Storage do not have 32 bit variants

  Workaround:Uninstall 32 bit variants of Samba packages.

- BZ# 1139183

  The Red Hat Storage 3.0 version does not prevent clients with versions older Red Hat Storage 3.0 from mounting a volume on which rebalance is performed. Users with versions older than Red Hat Storage 3.0 mounting a volume on which rebalance is performed can lead to data loss.

  You must install latest client version to avoid this issue.

- BZ# 1114999

  Running **gluster volume heal *vol-name* info** command fails when user serviceable snapshot is enabled. The error message *Volume vol-name is not of type replicate* is displayed and the user cannot obtain the list of files that need healing.

  Workaround: Disable uss feature using the command **gluster volume set *vol-name* features.uss disable**before running the heal info command.

- BZ# 1127178

  If a replica brick goes down and comes up when **rm -rf** command is executed, the operation may fail with the message *Directory not empty*.

  Workaround: Retry the operation when there are no pending self-heals.

- BZ# 969020

  Renaming a file during remove-brick operation may cause the file not to get migrated from the removed brick.

  Workaround: Check the removed brick for any files that might not have been migrated and copy those to the gluster volume before decommissioning the brick.

- BZ# 1007773

When **`remove-brick start`** command is executed, even though the graph change is propagated to the NFS server, the directory inodes in memory are not refreshed to exclude the removed brick. Hence, new files that are created may end up on the removed-brick.

Workaround: If files are found on the removed-brick path after **`remove-brick commit`**, copy them via a gluster mount point before re-purposing the removed brick.

- BZ# 1116115

When I/O operation is being performed at a high rate on the volume, faster than the rate at which the quota's accounting updates disk usage, the disk usage crosses the soft-limit mark without being failed with *EDQUOT*.

Workaround: Set ***`features.soft-timeout`*** and ***`features.hard-timeout`*** to a lower value, depending on the workload. Setting ***`features.soft-timeout`*** or ***`features.hard-timeout`*** to zero ensures that the disk usage accounting happens in line with the I/O operations performed on the volume, depending on the applicable timeout, but it could result in an increase in I/O latencies.

Note

The ***`features.soft-timeout`*** applies when the disk usage is lesser than the quota soft-limit set on a directory. ***`features.hard-timout`*** applies when the disk usage is greater than the quota soft-limit but lesser than the hard-limit set on a directory.

- BZ# 1116121

When I/O is being performed at a high rate on the volume, faster than the rate at which the quota's accounting updates disk usage, the disk usage crosses the soft-limit mark without an alert being logged.

Workaround: Set ***`features.soft-timeout`*** to a lower value, depending on the workload. Setting ***`features.soft-timeout`*** to zero would ensure that the disk usage accounting happens in line with the I/O performed on the volume, but it could result in an increase in I/O latencies.

- BZ# 1120437

Executing **`peer-status`** command on probed host displays the IP address of the node on which the peer probe was performed.

Example When probing a peer, node B with hostname from node A, executing **`peer status`** command on node B, displays IP address of node A instead of its hostname.

Workaround: Probe node A from node B with hostname of node A. For example, execute the command: **`# gluster peer probe HostnameA`** from node B.

- BZ# 1097309

If a NFS-client gets disconnected from the Red Hat Storage server without releasing the locks it obtained, these locks can prevent other NFS clients or Native (FUSE) clients to access the locked files. The NFSv3 protocol does not allow releasing the locks server side without a restart of the NFS servers. A restart triggers a grace period where existing locks need to get re-obtained. Locks are expired and made available to other NFS clients when the previous NFS clients do not re-request the previously obtained locks. More details related to NFS clients and lock recovery can be found in https://access.redhat.com/site/solutions/895263.

- BZ# 1099374

  When state-dump is taken, the gfid of barriered fop is displayed as 0 in the state-dump file of the node to which brick belongs.

- BZ# 1113965

  If AFR self-heal involves healing of renamed directories, the gfid handle of the renamed directories gets removed from the sink brick. In a distributed replicate volume, performing **`readdir`** of the directories results in duplicate listing for **`.`** and **`..`** entries and for files having dht **`link.to`** attribute.

- BZ# 1122371

  The NFS server process and gluster self-heal daemon process restarts when gluster daemon process is restarted.

- BZ# 1110692

  Executing **`remove-brick status`** command, after stopping remove-brick process, fails and displays a message that the remove-brick process is not started.

- BZ# 1123733

  Executing a command which involves glusterd-glusterd communication **`Examplegluster volume status`** immediately after one of the nodes is down hangs and fails after 2 minutes with cli-timeout message. The subsequent command fails with the error message *Another transaction in progress* for 10 mins (frame timeout).

  `Workaround:` Set a non-zero value for *ping-timeout* in **`/etc/glusterfs/glusterd.vol`** file.

- BZ# 1115915

  When a GlusterFS-native (FUSE) client looses its connection to the storage server without properly closing it, the brick process does not release resources (like locks) within an acceptable time. Other GlusterFS-native clients that require these resources can get blocked until the TCP-connection gets garbage collected by networking layers in the kernel and the brick processes get informed about it. This can introduce delays of 15-20 minutes before locks are released.

  `Workaround:` Reduce the value of the system-wide ***`net.ipv4.tcp_retries2 sysctl`***. Due to this change, the network layer of the Linux kernel times-out TCP-connections sooner.

- BZ# 1136718

  The afr self-heal can leave behind a partially healed file if the brick containing afr self-heal source file goes down in the middle of heal operation. If this partially healed file is migrated before the brick that was down comes online again, the migrated file would have incorrect data and the original file would be deleted.

- BZ# 1139193

  After **`add-brick`** operation, any application (like git) which attempts **`opendir`** on a previously present directory fails with **`ESTALE/ENOENT`** errors.

- BZ# 1142087

  The **`remove-brick force`** command displays a message asking the user to check the removed brick for files that might not have been migrated from the brick by the rebalance process. This message can be ignored as a **`remove-brick force`** does not trigger rebalance.

- BZ# 1141172

If you rename a file from multiple mount points, there are chances of losing the file. This issue is witnessed since **mv** command sends unlinks instead of renames when source and destination happens to be hard links to each other. Hence, the issue is in mv, distributed as part of **coreutils** in various Linux distributions.

For example, if there are parallel renames of the form (mv a b) and (mv b a) where a and b are hard links to the same file, because of the above mentioned behavior of mv, unlink (a) and unlink (b) would be issued from both instances of **mv**. This results in losing both the links a and b and hence the file.

- BZ# 1127658

  Adding a brick to a volume may fail if the parent of the new brick directory being added has one or more bricks existing under it. This could happen if the volume was accessed through **smb** over **glusterfs vfs** plug-in.

  Workaround: Remove all **glusterfs xattrs** set on the parent directory and execute the **gluster volume add-brick** command again.

- BZ# 979926

  When any process establishes a TCP connection with **glusterfs** servers of a volume using port **> 1023**, the server rejects the requests and the corresponding file or management operations fail. By default, **glusterfs** servers treat ports **> 1023** as unprivileged.

  Workaround: To disable this behavior, enable **rpc-auth-allow-insecure** option on the volume using the steps given below:

  - To allow **insecure** connections to a volume, run the following command:

    ```
    #gluster volume set VOLNAME rpc-auth-allow-insecure on
    ```

  - To allow **insecure** connections to glusterd process, add the following line in **/etc/glusterfs/glusterd.vol** file:

    ```
    option rpc-auth-allow-insecure on
    ```

  - Restart **glusterd** process using the following command:

    ```
    # service glusterd restart
    ```

  - Restrict connections to trusted clients using the following command:

    ```
    #gluster volume set VOLNAME auth.allow IP address
    ```

- BZ# 1139676

  Renaming a directory may cause both source and target directories to exist on the volume with the same GFID and make some files in these directories not visible from the mount point. The files will still be present on the bricks.

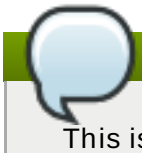
  Workaround: The steps to fix this issue are documented in: https://access.redhat.com/solutions/1211133

- BZ# 1030309

  During directory creations attempted by geo-replication, though an **mkdir** fails with **EEXIST**, the

directory might not have a complete layout for sometime and the directory creation fails with **`Directory exists`** message. This can happen if there is a parallel **`mkdir`** attempt on the same name. Till the other **`mkdir`** completes, layout is not set on the directory. Without a layout, entry creations within that directory fails.

Workaround: Set the layout on those subvolumes where the directory is already created by the parallel **`mkdir`** before failing the current **`mkdir`** with **`EEXIST`**.



Note

This is not a complete fix as the other **`mkdir`** might not have created directories on all subvolumes. The layout is set on the subvolumes where directory is already created. Any file or directory names which hash to these subvolumes on which layout is set, can be created successfully.

- BZ# 1146520

  During snap volume copy, a few files are not copied completely.

  Workaround: Mount the volume using **`use-readdirp=no`** option using the following command:

  ```
  mount -t glusterfs -o use-readdirp=NO
  hostname:/snaps/snap_name/vol_name mnt_point
  ```

Report a bug

3.2. Red Hat Storage Console

Issues related to Red Hat Storage Console

- BZ#916095

  If Red Hat Storage node is added to the cluster using IP address and the same Red Hat Storage node is later added using the FQDN (Fully Qualified Domain Name), the installation fails.

- BZ# 990108

  Resetting the **`user.cifs`** option using the **`Create Volume`** operation on the **`Volume Options`** tab on the Red Hat Storage Console reports a failure.

- BZ# 978927

  Log messages that Red Hat Storage Console is trying to update VM/Template information are displayed.

- BZ# 880509

  When run on versions higher than Firefox 17, the Red Hat Storage Console login page displays a browser incompatibility warning. Red Hat Storage Console can be best viewed in Firefox 17 and higher versions.

- BZ# 1049759

When **rhsc-log-collector** command is run, after collecting logs from different servers, the Terminal becomes garbled and unusable.

Workaround: Run the **reset** command.

- BZ# 1054366

  In Internet Explorer 10, while creating a new cluster with Compatibility version 3.3, the **Host** drop down list does not open correctly. Also, if there is only one item, the drop down list gets hidden when the user clicks on it.

- BZ# 1053395

  In Internet Explorer, while performing a task, an error message Unable to evaluate payload is displayed.

- BZ# 1056372

  When no migration is occurring, incorrect error message is displayed for the **stop migrate** operation.

- BZ# 1049890

  When gluster daemon service is restarted, failed Rebalance is started automatically and the status is displayed as *Started* in the Red Hat Storage Console.

- BZ# 1048426

  When there are more entries in Rebalance Status and remove-brick Status window, the column names scrolls up along with the entries while scrolling the window.

  Workaround: Scroll up the Rebalance Status and remove-brick Status window to view the column names.

- BZ# 1053112

  When large sized files are migrated, the stop migrate task does not stop the migration immediately but only after the migration is complete.

- BZ# 1040310

  If the Rebalance Status dialog box is open in the Red Hat Storage Console while Rebalance is being stopped from the Command Line Interface, the status is currently updated as *Stopped*. But if the Rebalance Status dialog box is not open, the task status is displayed as *Unknown* because the status update relies on the gluster Command Line Interface.

- BZ# 1051696

  When a cluster with compatibility version 3.2 contains Red Hat Storage 2.1 U2 nodes, creating Volume with bricks in root partition fails and the force option to allow bricks in root partition is not displayed.

  Workaround: Do not create bricks in root partition or move the Cluster Compatibility Version to 3.3.

- BZ# 838329

  When incorrect create request is sent through REST api, an error message is displayed which contains the internal package structure.

- BZ# 1049863

When Rebalance is running on multiple volumes, viewing the brick advanced details fails and the error message could not fetch brick details, please try again later is displayed in the **`Brick Advanced Details`** dialog box.

- BZ# 1022955

  Rebalance or remove-brick cannot be started immediately after stopping Rebalance or remove-brick, when a large file migration is in progress, as part of the previous operation (rebalance or remove-brick), even though it says it has stopped.

- BZ# 1015455

  The information on successfully completed Rebalance volume task is cleared from the Red Hat Storage Console after 5 minutes. The information on failed tasks is cleared after 1 hour.

- BZ# 1038691

  The RESTful Service Description Language (RSDL) file displays only the response type and not the detailed view of the response elements.

  Workaround: Refer the URL/API schema for detailed view of the elements of response type for the actions.

- BZ# 1024184

  If there is an error while adding bricks, all the "." characters of FQDN / IP address in the error message will be replaced with "_" characters.

- BZ# 982625

  Red Hat Storage Console allows adding Red Hat Storage 2.0+ and Red Hat Storage 2.1 servers into a 3.0 Cluster which is not supported in Red Hat Storage.

- BZ# 975399

  When Gluster daemon service is restarted, the host status does not change to UP from Non-Operational immediately in the Red Hat Storage Console. There would be a 5 minute interval for auto-recovery operations which detect changes in Non-Operational hosts.

- BZ# 971676

  While enabling or disabling Gluster hooks, the error message displayed if all the servers are not in UP state is incorrect.

- BZ# 1054759

  A **`vdsm-tool crash`** report is detected by Automatic Bug Reporting Tool (ABRT) in Red Hat Storage Node as the **`/etc/vdsm/vdsm.id`** file was not found during the first time.

  Workaround: Execute the command **`/usr/sbin/dmidecode -s system-uuid > /etc/vdsm/vdsm.id`** before adding the node to avoid the **`vdsm-tool crash`** report.

- BZ# 1057122

  While configuring the Red Hat Storage Console to use a remote database server, on providing either **`yes`** or **`no`** as input for ***`Database host name validation`*** parameter, it is considered as **`No`**.

- BZ# 1042808

When remove-brick operation fails on a volume, the Red Hat Storage node does not allow any other operation on that volume.

Workaround: Perform *commit* or *stop* for the failed remove-brick task, before another task can be started on the volume.

- BZ# 1060991

  In Red Hat Storage Console, Technology Preview warning is not displayed for stop remove-brick operation.

- BZ# 1057450

  Brick operations like adding and removing a brick from Red Hat Storage Console fails when Red Hat Storage nodes in the cluster have multiple FQDNs (Fully Qualified Domain Names).

  Workaround: Host with multiple interfaces should map to the same **FQDN** for both Red Hat Storage Console and gluster peer probe.

- BZ# 958803

  When a brick process goes down, the brick status is not updated and displayed immediately in the Red Hat Storage Console as the Red Hat Storage Console synchronizes with the gluster Command Line Interface every 5 minutes for brick status.

- BZ# 1038663

  Framework restricts displaying delete actions for collections in RSDL display.

- BZ# 1061677

  When Red Hat Storage Console detects a remove-brick operation which is started from gluster Command Line Interface, engine does not acquire lock on the volume and Rebalance task is allowed.

  Workaround: Perform *commit* or *stop* on *remove-brick* operation before starting Rebalance.

- BZ# 1061813

  After stopping, committing, or retaining bricks from the Red Hat Storage Console UI, the details of files scanned, moved, and failed are not displayed in the Tasks pane.

  Workaround: Use *Status* option in *Activities* column to view the details of the remove-brick operation.

- BZ# 924826

  In Red Hat Storage Console, parameters related to Red Hat Enterprise Virtualization are displayed while searching for Hosts using the Search bar.

- BZ# 1062612

  When Red Hat Storage 2.1 Update 2 nodes are added to 3.2 cluster, users are allowed to perform Rebalance and remove-brick tasks which are not supported for 3.2 cluster.

- BZ# 977355

  When resolving a missing hook conflict, if one of the servers in the cluster is not online, an error message is displayed without the server name. Hence, the server which was down can not be identified.

  Workaround: Identify the information on the server which was down from the Hosts tab.

- BZ# 1046055

  While creating volume, if the bricks are added in root partition, the error message displayed does not contain the information that **`Allow bricks in root partition and re-use the bricks by clearing xattrs`** option needs to be selected to add bricks in root partition.

  Workaround: Select **`Allow bricks in root partition and re-use the bricks by clearing xattrs`** option to add bricks in root partition.

- BZ# 1060991

  In Red Hat Storage Console UI, Technology Preview warning is not displayed for stop remove-brick operation.

- BZ# 1066130

  Simultaneous start of Rebalance on volumes that span same set of hosts fails as gluster daemon lock is acquired on participating hosts.

  Workaround: Start Rebalance again on the other volume after the process starts on first volume.

- BZ# 1086718

  The Red Hat Access Plug-in related answers are not written to the answer file correctly when the **`rhsc-setup --generate-answer=`*`answer-file`*** command is executed and hence the next offline execution of **`rhsc-setup`** (**`rhsc-setup --offline --config-append=`*`answer-file`***) asks Red Hat Access Plug-in related questions again.

  Workaround:

  - Add the entry given below in the answer-file **`OVESETUP_SYSTEM/configureRedhatAccessPlugin=bool:False`**
  - Execute the Red Hat Storage Console setup script in the offline mode **`rhsc-setup --offline --config-append=`*`answer-file`***

- BZ# 1086723

  Auto installation of Red Hat Storage Console using the answer file in Red Hat Storage Console-2.1.2 fails with the following warning message:

  [WARNING] Current installation does not support upgrade. It is recommended to clean your installation using rhsc-cleanup and re-install.

  Workaround:

  - Execute the command: **`yum update rhsc-setup`**
  - Perform the Red Hat Storage Console auto installation using the **`answer-file`** with the command: **`rhsc-setup --config-append=`*`answer-file`***

Issues related to the Red Hat Storage Console Command Line Interface:

- BZ# 928926

  When you create a cluster through API, enabling both *gluster_service* and *virt_service* is allowed though this is not supported.

- BZ# 1059806

In Red Hat Storage Console Command Line Interface, removing a cluster using its name fails with an error message and the same cluster gets deleted if UUID is used in remove command.

- BZ# 1106459

  When host is in maintenance mode, moving host to a different cluster of same or lesser compatibility version, displays error.

  Workaround: Remove the host from the current cluster and add it to another cluster.

- BZ# 1108688

  An image in the Nagios home page is not transferred via SSL and the Security details displays the following message:

  Connection Partially Encrypted.

- BZ# 1111079

  User can not disable monitoring using Nagios from CLI or User Interface.

  Workaround: To change configurations to disable monitoring using Nagios, follow the steps given below:

  - Modify the GUI configuration file **/etc/ovirt-engine/ui-plugins/gluster-nagios-monitoring-config.json** as given below:

    ```
    {"enabled": false}
    ```

  - Restart the engine service using the following command:

    ```
    # service ovirt-engine restart
    ```

  - Stop the nagios and nsca services using the following commands:

    ```
    # service nagios stop
    # service nsca stop
    ```

- BZ# 1111087

  User can not re-enable the disabled monitoring using Nagios from CLI or User Interface.

  Workaround: To change configurations to re-enable the disabled monitoring, follow the steps given below:

  - Modify the GUI configuration file **/etc/ovirt-engine/ui-plugins/gluster-nagios-monitoring-config.json** as given below:

    ```
    {"enabled": true}
    ```

  - Restart the engine service using the following command:

    ```
    # service ovirt-engine restart
    ```

  - Start the nagios and nsca services using the following commands:

```
# service nagios start
# service nsca start
```

- BZ# 1111549

  In the Red Hat Storage Console, if the name provided in the **Name** field of the host in the **New Host**" pop-up is different from the **Hostname** provided in Nagios, the utilization details for the hosts are not displayed in Trends tab.

- BZ# 1100960

  Nagios does not support SELinux fully and this impacts rhsc-setup and normal usage of Red Hat Console with Nagios.

  Workaround: Run SELinux in permissive mode.

- BZ# 1113103

  The Network Utilization graph shows an error that RRD data does not exist.

  Workaround: After midnight of the next day, the sadf output file gets corrected automatically and graph works fine.

- BZ# 1121612

  The mount points for a host can not be detected from Trends tab in Red Hat Storage Console GUI.

  View mount point Disk Utilization using Nagios GUI.

- BZ# 1101181

  After stopping the rebalance/remove-brick operation from Red Hat Storage Console GUI, clicking on rebalance/remove-brick status button throws *Unable to fetch data* error.

- BZ# 1125960

  Both Red Hat Storage Console and Hadoop Ambari are using Nagios to monitor Red Hat Storage Server nodes, but there is version conflict for the package nagios-plugins, which blocks the installation of nagios required by Hadoop Ambari. Red Hat Stroage server 3.0 nodes are pre-bundled with latest version of nagios-plugin. If you want to use Red Hat Storage Console, then you will not be able to install Nagios via Ambari and utilize the pre-build hadoop monitors/alerts. HDP 2.0.6 is not supported for Red Hat Storage 3.0 release.

Report a bug

3.3. Red Hat Storage and Red Hat Enterprise Virtualization Integration

Issues related to Red Hat Enterprise Virtualization and Red Hat Storage Integration

- In the case that the Red Hat Storage server nodes and the Red Hat Enterprise Virtualization Hypervisors are present in the same data center, the servers of both types are listed for selection when you create a virtual machine or add a storage domain. Red Hat recommends that you create a separate data center for the Red Hat Storage server nodes.

- BZ# 867236

  While deleting a virtual machine using the Red Hat Enterprise Virtualization Manager, the virtual machine is deleted but remains in the actual storage. This consumes unnecessary storage.

Workaround: Delete the virtual machine manually using the command line interface. Deleting the virtual image file frees the space.

- BZ# 918032

  In this release, the **direct-io-mode=enable** mount option does not work on the Hypervisor.

- BZ# 979901

  Virtual machines may experience very slow performance when a rebalance operation is initiated on the storage volume. This scenario is observed when the load on storage servers are extremely high. Hence, it is recommended to run the rebalance operation when the load is low.

- BZ# 856121

  When a volume starts, a **.glusterfs** directory is created in the back-end export directory. When a **remove-brick** command is performed, it only changes the volume configuration to remove the brick and stale data is present in back-end export directory.

  Workaround: Run this command on the Red Hat Storage Server node to delete the stale data.

  ```
  # rm -rf /export-dir
  ```

- BZ# 866908

  The **gluster volume heal *VOLNAME* info** command gives stale entries in its output in a few scenarios.

  Workaround: Execute the command after 10 minutes. This removes the entries from internal data structures and the command does not display stale entries.

Report a bug

3.4. Red Hat Storage and Red Hat OpenStack Integration

Issues related to Red Hat OpenStack and Red Hat Storage integration

- BZ# 1004745

  If a replica pair is down while taking a snapshot of a Nova instance on top of a Cinder volume hosted on a Red Hat Storage volume, the snapshot process may not complete as expected.

- BZ# 991490

  Mount options specified in **glusterfs_shares_config** file are not honored when it is specified as part of **enabled_backends** group.

- BZ# 980977 and BZ# 1017340

  If storage becomes unavailable, the volume actions fail with **error_deleting** message.

  Workaround: Run **gluster volume delete *VOLNAME* force** to forcefully delete the volume.

- BZ# 1042801

  Cinder volume migration fails to migrate from one glusterFS backend cluster to another. The migration fails even though the target volume is created.

- BZ# 1062848

When a nova instance is rebooted while rebalance is in progress on the Red Hat Storage volume, the root file system will be mounted as read-only after the instance comes back up. Corruption messages are also seen on the instance.

Report a bug

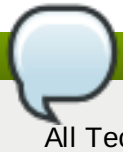
Chapter 4. Technology Previews

This chapter provides a list of all available Technology Preview features in Red Hat Storage 3.0 release.

Technology Preview features are currently not supported under Red Hat 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 6.5 release, will be considered as technology preview features in Red Hat Storage 3.0 release. For more information on technology preview features of Red Hat Enterprise Linux 6.5 release, see *Technology Previews* chapter of *Red Hat Enterprise Linux 6.5 Technical Notes*.

Report a bug

4.1. Striped Volumes

Data is striped across bricks in a Striped volume. It is recommended that you use striped volumes only in high concurrency environments where accessing very large files is critical.

For more information, refer to section *Creating Striped Volumes* in the *Red Hat Storage 3 Administration Guide*.

Report a bug

4.2. Distributed-Striped Volumes

The distributed striped volumes stripe data across two or more nodes in the trusted storage pool. It is recommended that you use distributed striped volumes to scale storage and to access very large files during critical operations in high concurrency environments.

For more information, refer to section *Creating Distributed Striped Volumes* in the *Red Hat Storage 3 Administration Guide*.

Report a bug

4.3. Distributed-Striped-Replicated Volumes

Distributed striped replicated volumes distribute striped data across replicated bricks in a trusted storage pool. It is recommended that you use distributed striped replicated volumes in highly concurrent environments where there is parallel access of very large files and where performance is critical. Configuration of this volume type is supported only for Map Reduce workloads.

For more information, refer the section *Creating Distributed Striped Replicated Volumes* in the *Red Hat Storage 3 Administration Guide*.

Report a bug

4.4. Striped-Replicated Volumes

The striped replicated volumes stripe data across replicated bricks in a trusted storage pool. It is recommended that you use striped replicated volumes in highly concurrent environments where there is parallel access of very large files and where performance is critical. In this release, configuration of this volume type is supported only for Map Reduce workloads.

For more information, refer the section *Creating Striped Replicated Volumes* in the *Red Hat Storage 3 Administration Guide*.

Report a bug

4.5. Replicated Volumes with Replica Count greater than 2

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 2 is under technology preview.

For more information, refer the section *Creating Replicated Volumes* in the *Red Hat Storage 3 Administration Guide*.

Report a bug

4.6. Support for RDMA over Infiniband

Red Hat Storage support for RDMA over Infiniband is a technology preview feature.

Report a bug

4.7. 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 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, refer the section *Stopping Remove Brick Operation* in the *Red Hat Storage 3 Administration Guide* and section *Stopping a Remove Brick Operation* in the *Red Hat Storage 3 Console Administration Guide.*

Report a bug

4.8. Read-only Volume

Red Hat 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.

Report a bug

4.9. NFS Ganesha

With the 2.0 release in the open source community, *nfs-ganesha* supports Red Hat Storage volumes. *nfs.-ganesha* 2.0 includes improved protocol support and stability. With Red Hat Storage 3 release, the *nfs-ganesha* feature in technology preview is being refreshed to bring in a number of significant enhancements and capabilities including dynamic configuration (addition and deletion of exports at run time), NFSv4 ACL's for glusterFS, glusterFS multi volume support, NFSv4 PseudoFS support and NFSv4/v3 kerberos authentication. With this feature, Red Hat Storage volumes can be exported using *nfs-ganesha* server for consumption by both NFSv3 and NFSv4 clients.

Report a bug

4.10. 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.

Report a bug

Revision History

Revision 3-20	**Wed Feb 11 2015**	**Bhavana Mohan**
Version for 3.0.3 release.		
Revision 3-18	**Wed Jan 07 2015**	**Pavithra Srinivasan**
Version for 3.0 release.		