Managing Red Hat Gluster Storage using the Web Console

Perform common Red Hat Gluster Storage management tasks in the Web Console
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Abstract

After Red Hat Hyperconverged Infrastructure for Virtualization has been deployed, you can perform many operational and management tasks for Red Hat Gluster Storage using the Web Console. Read this book to understand how to manage storage using the Web Console. This document explains how to perform maintenance tasks specific to Red Hat Hyperconverged Infrastructure for Virtualization.
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MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see our CTO Chris Wright’s message.
CHAPTER 1. UNDERSTANDING THE WEB CONSOLE

1.1. UNDERSTANDING THE STORAGE DASHBOARD

The Storage Dashboard in the Web Console provides an overview of I/O operations, volumes, and devices available to the server.

Navigate to the Storage Dashboard by logging into the Web Console and clicking the hostname, followed by Storage.

Figure 1.1. Storage Dashboard

The Storage Dashboard is divided into a number of sections.

Reading

A graph of the amount of data read in the last five minutes. The scale of the graph adjusts automatically according to server load.
Figure 1.2. Reading graph

![Reading graph](image)

Writing

A graph of the amount of data written in the last five minutes. The scale of the graph adjusts automatically according to server load.

Figure 1.3. Writing graph

![Writing graph](image)

Filesystems

A list of file systems hosted on this server showing their name, mount point, size, and used versus total storage capacity. Clicking on a file system opens the Volume Group Overview page. See Section 1.2, “Understanding the Volume Group Overview page” for more information.

Figure 1.4. Filesystems

<table>
<thead>
<tr>
<th>Name</th>
<th>Mount Point</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>/dev/gluster_vg_sdd/glu...</code></td>
<td><code>/gluster_bricks/data</code></td>
<td>0.001 / 4.88 TiB</td>
</tr>
<tr>
<td><code>/dev/gluster_vg_sdd/glu...</code></td>
<td><code>/gluster_bricks/engine</code></td>
<td>10.8 / 99.9 GiB</td>
</tr>
<tr>
<td><code>/dev/gluster_vg_sdd/glu...</code></td>
<td><code>/gluster_bricks/vmstore</code></td>
<td>0.134 / 8.79 TiB</td>
</tr>
<tr>
<td><code>/dev/rhel_rhsdev-grafs...</code></td>
<td><code>/home</code></td>
<td>0.0314 / 876 GiB</td>
</tr>
<tr>
<td><code>/dev/rhel_rhsdev-grafs...</code></td>
<td><code>/</code></td>
<td>5.74 / 50.0 GiB</td>
</tr>
<tr>
<td><code>/dev/sda1</code></td>
<td><code>/boot</code></td>
<td>184 / 1014 MiB</td>
</tr>
</tbody>
</table>

NFS Mounts
A list of exported file systems that have been mounted by client systems.

**Figure 1.5. Mounts**

<table>
<thead>
<tr>
<th>Server</th>
<th>Mount Point</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.70.37.28/engine</td>
<td>/rhev/data-center/mnt/gl...</td>
<td>11.8 / 99.9 GiB</td>
</tr>
<tr>
<td>10.70.37.28/vmstore</td>
<td>/rhev/data-center/mnt/gl...</td>
<td>0.222 / 8.79 TiB</td>
</tr>
<tr>
<td>10.70.37.28/data</td>
<td>/rhev/data-center/mnt/gl...</td>
<td>0.0496 / 4.88 TiB</td>
</tr>
</tbody>
</table>

**Storage Logs**

A list of recent events and log messages related to storage.

**Figure 1.6. Logs**

<table>
<thead>
<tr>
<th>Date</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 24, 2018</td>
<td>g_object_notify: object class 'UDisksLinuxBlockOb... udisksd</td>
</tr>
<tr>
<td></td>
<td>g_object_notify: object class 'UDisksLinuxBlockOb... udisksd</td>
</tr>
<tr>
<td></td>
<td>g_object_notify: object class 'UDisksLinuxLogical... udisksd</td>
</tr>
<tr>
<td></td>
<td>g_object_notify: object class 'UDisksLinuxBlockOb... udisksd</td>
</tr>
</tbody>
</table>

**RAID Devices**

A list of RAID devices configured on the server. Clicking a RAID device opens the RAID Device Summary page. Clicking + opens the Create RAID Device window. See Section 3.1, “Configuring a new RAID Device using the Web Console” for more information.

**Figure 1.7. RAID Devices**

No storage set up as RAID

**Volume Groups**

A list of volume groups configured on the server. Clicking a volume group opens the Volume Group Overview page. Clicking + opens the Create Volume Group window. See the following sections for more information:

- Section 5.1, “Creating a volume group using the Web Console”
- Section 1.2, “Understanding the Volume Group Overview page”
VDO Devices

A list of Virtual Data Optimizer devices configured on the server. Clicking a VDO device opens the VDO Device Summary page. Clicking + opens the Create VDO Device window. See the following sections for more information:

- Section 4.1, “Creating a Virtual Data Optimizer using the Web Console”
- Section 1.3, “Understanding the VDO Overview page”

Drives

A list of drives in use by the server. Clicking a drive opens the Drive Summary page. See Section 1.4, “Understanding the Drive Overview page” for more information.
1.2. UNDERSTANDING THE VOLUME GROUP OVERVIEW PAGE

The Volume Group Overview page in the Web Console provides an overview of a volume group, the physical volume it resides on, and the logical volumes that are part of that volume group.

Navigate to the Volume Group Summary page for a file system or volume group by logging into the Web Console and clicking the hostname, followed by Storage, and clicking any file system or volume group.
Figure 1.12. Volume Group Overview page

The Volume Group Overview page is divided into several sections.

Volume Group summary
A summary of volume group details, showing name, UUID and capacity. You can also rename or delete the volume group from here.

Physical Volumes
A list of physical volumes underlying this volume group. Clicking + opens the Add Disks window, which lets you add more disks to the volume group.

Logical Volumes
A list of logical volumes in this volume group, with volume management operations. Clicking a volume shows more details and operations for that volume. See Chapter 7, Managing logical volumes using the Web Console for more information.

1.3. UNDERSTANDING THE VDO OVERVIEW PAGE

The VDO Overview page provides an overview of Virtual Disk Optimizer devices and their contents.

Navigate to the VDO Overview page for a VDO device by logging into the Web Console and clicking the hostname, followed by Storage, and clicking any device listed under VDO Devices.
The VDO Overview page is divided into several sections.

VDO Device summary
A summary of the details of this VDO device, showing the device file location, the drive backing the VDO device, and the physical and logical space available. Several VDO management operations are also available.

Content
A summary of the volumes residing on this VDO device.

The VDO Overview page also provides access to a number of VDO management operations.

See the following sections for more information about each operation.

- Growing the logical size of a VDO device
- Disabling compression on a VDO device
- Disabling deduplication on a VDO device
- Stopping a VDO device
- Deleting a VDO device
See Understanding VDO for more information about VDO devices.

1.4. UNDERSTANDING THE DRIVE OVERVIEW PAGE

The Drive Overview page provides an overview of any drives or disks attached to the server, and any partitions on those drives.

Navigate to the Drive Overview page for any drive by logging into the Web Console and clicking the hostname, followed by Storage, and clicking any drive listed under Drives.

Figure 1.14. Drive Overview page

The Drive Overview page is divided into several sections.

**Drive**
A summary of drive details, including the drive model, firmware version, serial number, capacity, and device location.

**Content**
A summary of partitions on this drive. You can modify the partition table on the drive, or format a partition here.
CHAPTER 2. MANAGING PHYSICAL DEVICE DRIVES USING THE WEB CONSOLE

2.1. CREATING A PARTITION TABLE USING THE WEB CONSOLE

Follow these steps to create a new partition table on a drive using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click any drive under Drives. The Drive Overview page opens.
4. Click Create partition table.

Figure 2.1. Drive Content

The Format device window opens.

a. Specify whether to Erase existing data completely by overwriting it with zeroes.

b. Specify the Partitioning style to use.

c. Click Format.

2.2. FORMATTING A DISK PARTITION USING THE WEB CONSOLE

Follow these steps to format a partition with a file system using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click any drive under Drives. The Drive Overview page opens.
4. Click the device under Content.
5. In the Filesystem subtab, click Format.

The Filesystem subtab
The Format Device window appears.

a. Specify whether to Erase existing data completely by overwriting it with zeroes.

b. Specify the file system Type to use.

c. Specify a Name for the file system.

d. Specify whether to use default or customized Mounting behavior. If you selected Custom, specify a Mount Point and check any Mount options you want this file system to use.

e. Click Format.
CHAPTER 3. MANAGING RAID DEVICES USING THE WEB CONSOLE

3.1. CONFIGURING A NEW RAID DEVICE USING THE WEB CONSOLE

1. Log in to the Web Console.

2. Click the hostname → Storage.

3. Click the + button beside RAID Devices.

Figure 3.1. RAID Devices

The Create RAID Device window opens.

Figure 3.2. Create Raid Device window

<table>
<thead>
<tr>
<th>Name</th>
<th>RAID Level</th>
<th>Chunk Size</th>
<th>Disks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RAID 5 (Distributed Parity)</td>
<td>512 KIB</td>
<td>186 GB AVAGO 5MC3108 (0007c8301a5ffe6622013bcd1a800403) /dev/sdc</td>
</tr>
</tbody>
</table>

a. Specify a Name for your RAID device.

b. Specify the RAID Level to use.

NOTE

Only RAID5 and RAID6 are supported for RHHI for Virtualization.

c. Leave the Chunk Size as the default value.

d. Check the Disks to use in creating the RAID device.

e. Click Create.
CHAPTER 4. MANAGING VIRTUAL DATA OPTIMIZERS USING THE WEB CONSOLE

4.1. CREATING A VIRTUAL DATA OPTIMIZER USING THE WEB CONSOLE

Follow these steps to create a new VDO device.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the + button beside VDO Devices. The Create VDO Device window opens.

![Figure 4.1. VDO Devices](image1)

![Figure 4.2. Create VDO Device window](image2)

- a. Specify a Name for the new VDO device.
- b. Specify the Disk to use for the new VDO device.
- c. Specify the Logical Size for the new VDO device.
d. Specify the **Index Memory** size for the new VDO device.

e. Check any **Options** you want the new VDO device to use.

f. Click **Create**.

### 4.2. GROWING THE LOGICAL SIZE OF A VDO DEVICE USING THE WEB CONSOLE

Follow these steps to increase the logical size (the amount of data it can store by using compression and deduplication) of a VDO device.

1. Log in to the Web Console.

2. Click the hostname → **Storage**. The **Storage Dashboard** page opens.

3. Under **VDO Devices**, click the VDO device. The **VDO Device Overview** page opens.

4. Click **Grow**.

**Figure 4.3. VDO device summary**

The **Grow logical size of device** window opens.

5. Drag the slider or enter a numeric value to set the new logical size of the VDO device, and click **Grow**.

### 4.3. DISABLING COMPRESSION ON A VDO DEVICE USING THE WEB CONSOLE

Follow these steps to prevent future writes to the VDO device being compressed. This does not affect the compression of existing data on the VDO device.

1. Log in to the Web Console.

2. Click the hostname → **Storage**. The **Storage Dashboard** page opens.

3. Under **VDO Devices**, click the VDO device. The **VDO Device Overview** page opens.

4. Locate the **Compression** toggle.
4.4. DISABLING DEDUPLICATION ON A VDO DEVICE USING THE WEB CONSOLE

Follow these steps to prevent future writes to the VDO device being checked for duplication. This does not affect the deduplication of existing data on the VDO device.

1. Log in to the Web Console.
2. Click the hostname → Storage. The Storage Dashboard page opens.
3. Under VDO Devices, click the VDO device. The VDO Device Overview page opens.
4. Locate the Deduplication toggle.
5. Click the Deduplication toggle under the device summary so that OFF is displayed.

4.5. STOPPING A VDO DEVICE USING THE WEB CONSOLE

Follow these steps to stop a VDO device for maintenance operations or deletion.

Prerequisites

- Stop any volumes running on the VDO device.

Procedure

1. Log in to the Web Console.
2. Click the hostname → Storage. The Storage Dashboard page opens.
3. Under VDO Devices, click the VDO device. The VDO Device Overview page opens.
4. Click Stop.

4.6. DELETING A VDO DEVICE USING THE WEB CONSOLE

Follow these steps to delete a VDO device.
Prerequisites

- Stop any volumes running on the VDO device.
- Stop the VDO device.

Procedure

1. Log in to the Web Console.
2. Click the hostname → Storage. The Storage Dashboard page opens.
3. Under VDO Devices, click the VDO device. The VDO Device Overview page opens.
4. Click Delete.

Figure 4.7. The VDO device
CHAPTER 5. MANAGING VOLUME GROUPS USING THE WEB CONSOLE

5.1. CREATING A VOLUME GROUP USING THE WEB CONSOLE

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the + button beside Volume Groups.

Figure 5.1. Volume Groups section

The Create Volume Group window opens.

   a. Specify a Name for the volume group.
   b. Check the Disks to use for the volume group.
   c. Click Create.

5.2. ADDING PHYSICAL VOLUMES TO A VOLUME GROUP USING THE WEB CONSOLE

Follow these instructions to expand a volume group using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click the + button beside Physical Volumes.
Figure 5.2. Physical Volumes

The Add Disks window opens.

a. Check the Disks you want to add to the volume group.

b. Click Add.

The capacity of the volume group is extended automatically.

Now that you’ve added new storage to the volume group, you may want to grow your thin pool or grow your logical volume.

5.3. RENAMING A VOLUME GROUP USING THE WEB CONSOLE

Follow these instructions to rename a volume group using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click Rename.

Figure 5.3. Volume group summary

The Rename Volume Group window opens. .. Specify a new Name .. Click Rename.

The volume group is renamed, and the change is propagated to all logical volumes in the volume group. This does not affect the naming of thin pools.

5.4. DELETING A VOLUME GROUP USING THE WEB CONSOLE

Follow these instructions to delete a volume group using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → **Storage**.

3. Click the volume group. The **Volume Group Overview** page opens.

4. In the Volume Group summary, click **Delete**.

   **Figure 5.4. Volume group summary**

   ![Volume Group summary](image)

   The confirmation window opens.

5. Click **Delete** to confirm deletion.
CHAPTER 6. MANAGING THIN POOLS USING THE WEB CONSOLE

6.1. CREATING A THIN POOL USING THE WEB CONSOLE

Follow these instructions to create a logical thin pool using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click + Create new Logical Volume. The Create Logical Volume window opens.
   a. Specify a Name for your thin pool.
   b. Set Purpose to Pool for thinly provisioned volumes.
   c. Specify a Size for your thin pool.
   d. Click Create.

Your new thin pool appears in the list of logical volumes in this volume group.

6.2. GROWING A THIN POOL USING THE WEB CONSOLE

Follow these instructions to increase the size of a logical thin pool using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click the thin pool.
   a. Specify the new Size of the thin pool.
   b. Click Grow.

6.3. DEACTIVATING A THIN POOL USING THE WEB CONSOLE

Follow these instructions to deactivate a logical thin pool using the Web Console. This deactivates all thinly provisioned logical volumes in the pool.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click the thin pool.
5. Click **Deactivate**.

The thin pool is deactivated.

### 6.4. ACTIVATING A THIN POOL USING THE WEB CONSOLE

Follow these instructions to activate a logical thin pool using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → **Storage**.
3. Click the volume group. The *Volume Group Overview* page opens.
4. Click the thin pool.
5. Click **Activate**.

The thin pool is activated. This does not activate thin provisioned logical volumes in the pool.
CHAPTER 7. MANAGING LOGICAL VOLUMES USING THE WEB CONSOLE

7.1. ACTIVATING A LOGICAL VOLUME USING THE WEB CONSOLE

Follow these instructions to activate a logical volume using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click the logical volume.
5. Click Activate.

7.2. CREATING A THINLY PROVISIONED LOGICAL VOLUME USING THE WEB CONSOLE

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click Create Thin Volume beside the thin pool that should host the volume.

   Figure 7.1. A thin pool

| 13.7 TiB Pool for Thin Volumes | gluster_thinpool_sdd | Create Thin Volume |

   The Create Thin Volume window opens.
   a. Specify a Name for the new volume.
   b. Specify a Size for the new volume.
   c. Click Create.

   The new volume appears in the list of logical volumes.

7.3. CREATING A THICKLY PROVISIONED LOGICAL VOLUME USING THE WEB CONSOLE

Follow these instructions to create a logical thin pool using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click the volume group. The Volume Group Overview page opens.
4. Click + Create new Logical Volume The Create Logical Volume window opens.

Figure 7.2. The Create Logical Volume window

<table>
<thead>
<tr>
<th>Create Logical Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td><strong>Size</strong></td>
</tr>
</tbody>
</table>

- a. Specify a **Name** for your logical volume.
- b. Set **Purpose** to **Block device for filesystems**.
- c. Specify a **Size** for your logical volume.
- d. Click **Create**.

Your new logical volume appears in the list of logical volumes in this volume group.

7.4. DEACTIVATING A LOGICAL VOLUME USING THE WEB CONSOLE

Follow these instructions to deactivate a logical volume using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → **Storage**.
3. Click the volume group. The **Volume Group Overview** page opens.
4. Click the logical volume.
5. Click **Deactivate**.

Figure 7.3. The logical volume summary

<table>
<thead>
<tr>
<th>Deactivate</th>
<th>Delete</th>
</tr>
</thead>
</table>

7.5. DELETING A LOGICAL VOLUME USING THE WEB CONSOLE

Follow these instructions to delete a thinly- or thickly-provisioned logical volume.
1. Log in to the Web Console.

2. Click the hostname → Storage.

3. Click the volume group. The Volume Group Overview page opens.

4. Click the logical volume.

5. Click Delete in the logical volume summary.

6. Click Delete to confirm deletion.

7.6. GROWING A LOGICAL VOLUME USING THE WEB CONSOLE

Follow these instructions to increase the size of a logical volume using the Web Console.

1. Log in to the Web Console.

2. Click the hostname → Storage.

3. Click the volume group. The Volume Group Overview page opens.

4. Click the logical volume.

5. On the Volume subtab, click Grow.

Figure 7.4. Logical Volume section expanded

![Logical Volume section expanded](image)

The Grow Logical Volume window opens.

Figure 7.5. The Grow Logical Volume window

![Grow Logical Volume window](image)

a. Specify the new Size of the logical volume.

b. Click Grow.
CHAPTER 8. MANAGING FILE SYSTEMS USING THE WEB CONSOLE

8.1. FORMATTING A LOGICAL VOLUME USING THE WEB CONSOLE

Follow these steps to format a logical volume with a file system using the Web Console.

1. Log in to the Web Console.
2. Click the hostname → Storage.
3. Click any volume group under Volume Group. The Volume Group Overview page opens.
4. Click the logical volume.
5. On the Filesystem subtab, click Format.

Figure 8.1. The logical volume summary

NOTE
If this logical volume does not have an existing file system, this tab is labelled Unrecognised Data.

a. Specify whether to Erase existing data completely by overwriting it with zeroes.
b. Specify the file system Type to use.
c. Specify a Name for the file system.
d. Specify whether to use default or customized Mounting behavior.
   If you selected Custom, specify a Mount Point and check any Mount options you want this file system to use.
e. Click Format.

8.2. CONFIGURING A MOUNT POINT USING THE WEB CONSOLE

1. Log in to the Web Console.
2. Click the hostname → Storage.

3. Click any volume group under Volume Group. The Volume Group Overview page opens.

4. Click the logical volume.

5. On the Filesystem subtab, click the value of Mount Point.

Figure 8.2. The logical volume summary

For this volume the mount point is /gluster_bricks/engine

The Filesystem Mounting window opens.

a. Specify a behavior to use for Mounting.
   If you select Custom, specify a Mount Point and check any Mount Options you want to use.

b. Click Apply.

8.3. MOUNTING A FILE SYSTEM USING THE WEB CONSOLE

1. Log in to the Web Console.

2. Click the hostname → Storage.

3. Click any volume group under Volume Group. The Volume Group Overview page opens.

4. Click the logical volume.

5. On the Filesystem subtab, click Mount.

8.4. UNMOUNTING A FILE SYSTEM USING THE WEB CONSOLE

1. Log in to the Web Console.

2. Click the hostname → Storage.

3. Click any volume group under Volume Group. The Volume Group Overview page opens.

4. Click the logical volume.
5. On the **Filesystem** subtab, click **Unmount**.

**Figure 8.3. The logical volume summary**

![Logical Volume Summary](image)

- **Name**: -
- **Mount Point**: /gluster_bricks/engine
- **Mount Options**: ino64,noatime,nodiratime,x-systemd.requires=vdo.service
- **Mounted At**: /gluster_bricks/engine
- **Used**: 10.8 GiB of 99.9 GiB
CHAPTER 9. MANAGING GLUSTER VOLUMES USING THE WEB CONSOLE

9.1. ACCESSING THE GLUSTER MANAGEMENT DASHBOARD

The Gluster Management dashboard lets you view information about the currently configured Gluster volumes in your hyperconverged cluster.

To access the Gluster Management dashboard:

1. Click **Virtualization → Hosted Engine** to reach the Hosted Engine dashboard.

The Hosted Engine dashboard in the Web Console

![Hosted Engine Dashboard]

2. Click **Manage Gluster** to reach the Gluster Management dashboard.

The Gluster Management dashboard in the Web Console

![Gluster Management Dashboard]
9.2. EXPANDING VOLUME FROM WEB CONSOLE

Follow these instructions to use the Web Console to expand your volume.

Prerequisites

- Verify that your scaling plans are supported: Requirements for scaling.

Procedure

1. Log in to the Web Console.

2. Click Virtualization → Hosted Engine and then click Manage Cluster.

3. Click Expand volume button beside the volume you want to expand. The expand volume data page opens.
4. On the *Hosts* tab, verify the Host details and click **Next**.

5. On the *Volumes* tab, specify the details of the brick path to be configured for the new disk.

6. On the *Bricks* tab, specify the details of the disks to be used to expand the Gluster volume.
7. On the Review tab, check the generated file for any problems. Here, Enable debug logging, runs ansible-playbook in verbose mode, and provides more logs to add information. When you are satisfied, click Deploy.
9.3. EXPANDING VOLUME FROM RED HAT VIRTUALIZATION MANAGER

Follow this section to expand an existing volume across new bricks on new hyperconverged nodes.

Prerequisites

- Verify that your scaling plans are supported: Requirements for scaling.
- Install three physical machines to serve as the new hyperconverged nodes. Follow the instructions in Installing hyperconverged hosts.
- Configure key-based SSH authentication without a password. Configure this from the node that is running the Web Console to all new nodes, and from the first new node to all other new nodes.

**IMPORTANT**

RHHI for Virtualization expects key-based SSH authentication without a password between these nodes for both IP addresses and FQDNs. Ensure that you configure key-based SSH authentication between these machines for the IP address and FQDN of all storage and management network interfaces.

Follow the instructions in Using key pairs instead of passwords for SSH authentication to configure key based authentication without a password.

Procedure
1. **Create new bricks**
   Create the bricks on the servers you want to expand your volume across by following the instructions in Creating bricks using ansible or Creating bricks above a VDO layer using ansible depending on your requirements.

   **IMPORTANT**

   If the path: defined does not begin with /rhgs the bricks are not detected automatically by the Administration Portal. Synchronize the host storage after running the create_brick.yml playbook to synchronize the new bricks to the Administration Portal.

   1. Click **Compute → Hosts** and select the host.
   2. Click **Storage Devices**
   3. Click **Sync**.

   Repeat for each host that has new bricks.

2. **Add new bricks to the volume**
   a. Log in to RHV Administration Console.
   b. Click **Storage → Volumes** and select the volume to expand.
   c. Click the **Bricks** tab.
   d. Click **Add**. The Add Bricks window opens.
   e. Add new bricks.
      i. Select the brick host from the **Host** dropdown menu.
      ii. Select the brick to add from the **Brick Directory** dropdown menu and click **Add**.
   f. When all bricks are listed, click **OK** to add bricks to the volume.

   The volume automatically syncs the new bricks.

### 9.4. Expanding the Hyperconverged Cluster by Adding a New Volume on New Nodes Using the Web Console

Follow these instructions to use the Web Console to expand your hyperconverged cluster with a new volume on new nodes.

**Prerequisites**

- Verify that your scaling plans are supported: Requirements for scaling.
- Install three physical machines to serve as the new hyperconverged nodes. Follow the instructions in Installing hyperconverged hosts.
- Configure key-based SSH authentication without a password.
Configure this from the node that is running the Web Console to all new nodes, and from the first new node to all other new nodes.

**IMPORTANT**

RHHI for Virtualization expects key-based SSH authentication without a password between these nodes for both IP addresses and FQDNs. Ensure that you configure key-based SSH authentication between these machines for the IP address and FQDN of all storage and management network interfaces.

Follow the instructions in Using key pairs instead of passwords for SSH authentication to configure key based authentication without a password.

**Procedure**

1. Log in to the Web Console.

2. Click Virtualization → Hosted Engine and then click Manage Gluster.


   a. On the Hosts tab, enter the FQDN or IP address of the new hyperconverged nodes and click Next.

   ![Hosts tab](image)

   b. On the Volumes tab, specify the details of the volume you want to create.

   ![Volumes tab](image)

   c. On the Bricks tab, specify the details of the disks to be used to create the Gluster volume.
d. On the Review tab, check the generated file for any problems. When you are satisfied, click Deploy.
Deployment takes some time to complete. The following screen appears when the cluster has been successfully expanded.

9.4.1. Configure additional hyperconverged hosts

If your environment uses IPv6 addresses, or if you did not specify additional hyperconverged hosts as part of Configure Red Hat Gluster Storage for Hosted Engine using the Web Console, follow these steps in the Administration Portal for each of the other hyperconverged hosts.

1. Click Compute → Hosts and then click New to open the New Host window.

2. Provide the Name, Hostname, and Password for the host that you want to manage.

3. Under Advanced Parameters, uncheck the Automatically configure host firewall checkbox, as firewall rules are already configured by the deployment process.

4. In the Hosted Engine tab of the New Host dialog, set the value of Choose hosted engine deployment action to Deploy. This ensures that the hosted engine can run on the new host.

5. Click OK.

6. Attach the gluster network to all remaining hosts
   a. Click the name of the newly added host to go to the host page.
   b. Click the Network Interfaces subtab and then click Setup Host Networks.
   c. Drag and drop the newly created network to the correct interface.
   d. Ensure that the Verify connectivity checkbox is checked.
   e. Ensure that the Save network configuration checkbox is checked.
   f. Click OK to save.

7. In the General subtab for this host, verify that the value of Hosted Engine HA is Active, with a positive integer as a score.
IMPORTANT

If Score is listed as N/A, you may have forgotten to select the deploy action for Choose hosted engine deployment action. Follow the steps in Reinstalling a hyperconverged host in Maintaining Red Hat Hyperconverged Infrastructure for Virtualization to reinstall the host with the deploy action.

8. Verify the health of the network
   Click the Network Interfaces tab and check the state of the host’s network. If the network interface enters an “Out of sync” state or does not have an IP Address, click Management → Refresh Capabilities.


9.5. CREATING AN ADDITIONAL GLUSTER VOLUME USING THE WEB CONSOLE

Follow these instructions to use the Web Console to create a new Red Hat Gluster Storage volume using raw disks that are available on hyperconverged hosts in your cluster.

Prerequisites

- Verify that the raw disk drives you plan to use for the new volume are visible under the Drives section of the Storage Dashboard, and do not have any file systems listed on their Drive Overview page.

Procedure

1. Log in to the Web Console.

2. Click Virtualization → Hosted Engine and then click Manage Gluster.

3. Click Create Volume. The Create Volume window opens.
   a. On the Hosts tab, select three different hyperconverged hosts with unused disks and click Next.
b. On the Volumes tab, specify the details of the volume you want to create and click Next.

c. On the Bricks tab, specify the details of the disks to be used to create the volume and click Next.
On the Review tab, check the generated configuration file for any incorrect information. When you are satisfied, click Deploy.

Successfully created volume is displayed when deployment completes successfully.