



# **Red Hat Hyperconverged Infrastructure for Virtualization 1.5**

## **Managing Red Hat Gluster Storage using Cockpit**

Perform common Red Hat Gluster Storage management tasks in Cockpit



# Red Hat Hyperconverged Infrastructure for Virtualization 1.5 Managing Red Hat Gluster Storage using Cockpit

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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 Cockpit. Read this book to understand how to manage storage using Cockpit. This document explains how to perform maintenance tasks specific to Red Hat Hyperconverged Infrastructure for Virtualization.

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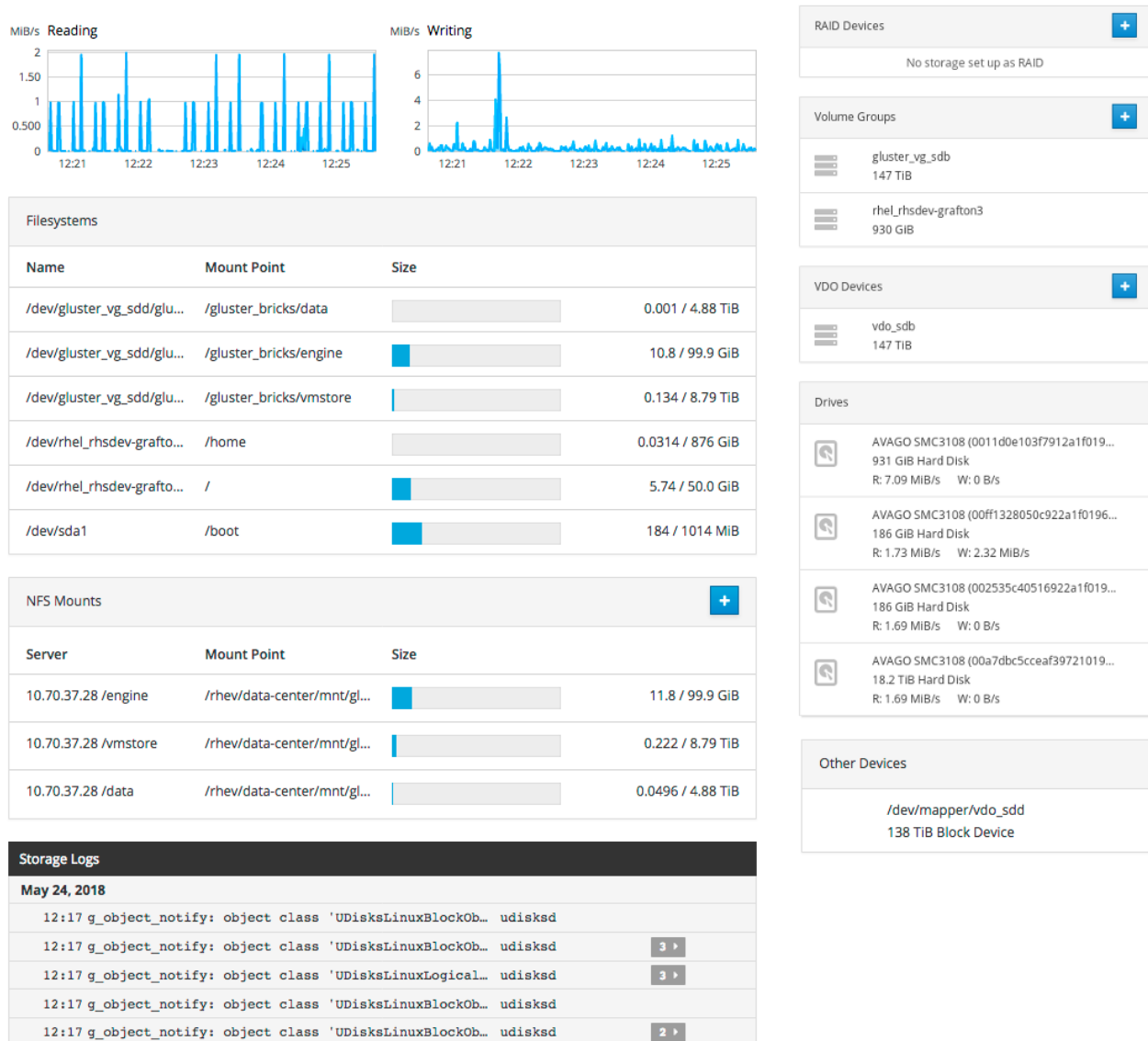
# CHAPTER 1. UNDERSTANDING COCKPIT

## 1.1. UNDERSTANDING THE STORAGE DASHBOARD

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

Navigate to the Storage Dashboard by logging into Cockpit and clicking the hostname, followed by **Storage**.

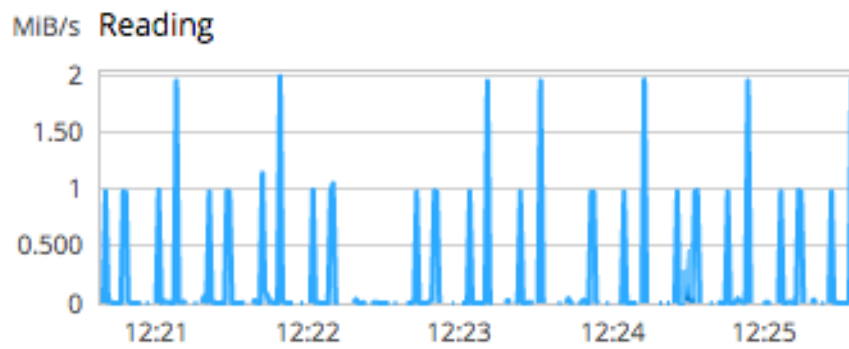
**Figure 1.1. Storage Dashboard**



The Storage Dashboard is divided into a number of sections.

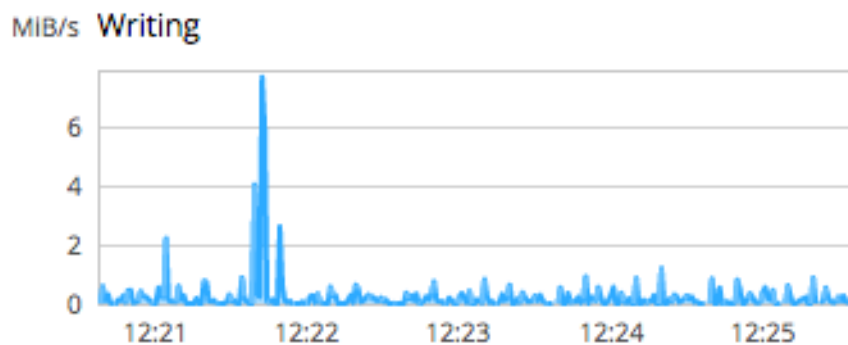
### Reading

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**

## 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**

## 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**

| Filesystems                |                         |  |                  |
|----------------------------|-------------------------|--|------------------|
| Name                       | Mount Point             | Size   |                  |
| /dev/gluster_vg_sdd/glu... | /gluster_bricks/data    | <div style="width: 0.001%; background-color: #ccc;"></div>   | 0.001 / 4.88 TiB |
| /dev/gluster_vg_sdd/glu... | /gluster_bricks/engine  | <div style="width: 10.8%; background-color: #0070c0;"></div> | 10.8 / 99.9 GiB  |
| /dev/gluster_vg_sdd/glu... | /gluster_bricks/vmstore | <div style="width: 0.134%; background-color: #ccc;"></div>   | 0.134 / 8.79 TiB |
| /dev/rhel_rhsdev-grafto... | /home                   | <div style="width: 0.0314%; background-color: #ccc;"></div>  | 0.0314 / 876 GiB |
| /dev/rhel_rhsdev-grafto... | /                       | <div style="width: 5.74%; background-color: #0070c0;"></div> | 5.74 / 50.0 GiB  |
| /dev/sda1                  | /boot                   | <div style="width: 184%; background-color: #0070c0;"></div>  | 184 / 1014 MiB   |

## NFS Mounts



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

**Figure 1.5. Mounts**

| NFS Mounts           |                             |  | + |
|----------------------|-----------------------------|--|---|
| Server               | Mount Point                 | Size   |   |
| 10.70.37.28 /engine  | /rhev/data-center/mnt/gl... | <div style="width: 11.8%; background-color: #0070c0; height: 10px;"></div> 11.8 / 99.9 GiB     |   |
| 10.70.37.28 /vmstore | /rhev/data-center/mnt/gl... | <div style="width: 0.222%; background-color: #0070c0; height: 10px;"></div> 0.222 / 8.79 TiB   |   |
| 10.70.37.28 /data    | /rhev/data-center/mnt/gl... | <div style="width: 0.0496%; background-color: #0070c0; height: 10px;"></div> 0.0496 / 4.88 TiB |   |

## Storage Logs

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

**Figure 1.6. Logs**

| Storage Logs   |  |
|--|--|
| <b>May 24, 2018</b>  |  |
| 12:17 g_object_notify: object class 'UDisksLinuxBlockOb... | udisksd  |
| 12:17 g_object_notify: object class 'UDisksLinuxBlockOb... | udisksd <span style="float: right;">3 ▶</span> |
| 12:17 g_object_notify: object class 'UDisksLinuxLogical... | udisksd <span style="float: right;">3 ▶</span> |
| 12:17 g_object_notify: object class 'UDisksLinuxBlockOb... | udisksd  |
| 12:17 g_object_notify: object class 'UDisksLinuxBlockOb... | udisksd <span style="float: right;">2 ▶</span> |

## RAID Devices

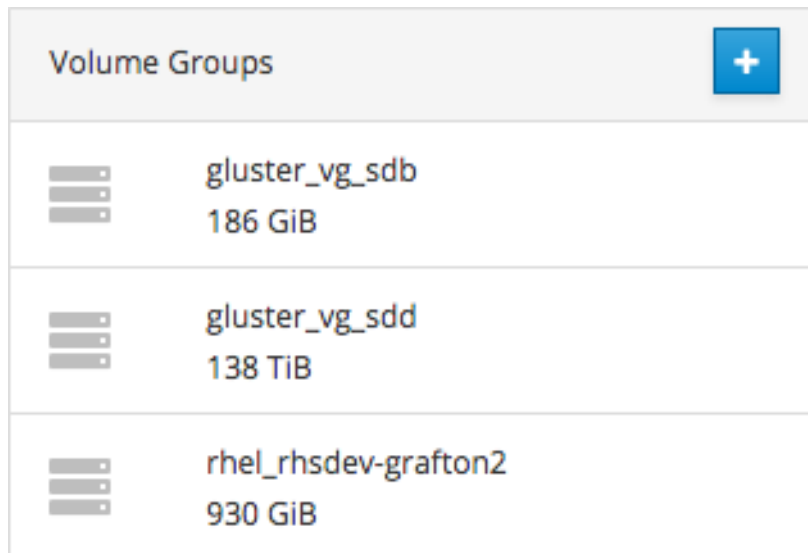
A list of RAID devices configured on the server. Clicking a RAID device opens the *RAID Device Summary* page. Clicking + opens the *Create RAID Device* window. See [Section 3.1, “Configuring a new RAID Device using Cockpit”](#) for more information.




**Figure 1.7. RAID Devices**

| RAID Devices              | + |
|---------------------------|---|
| No storage set up as RAID |   |

## Volume Groups

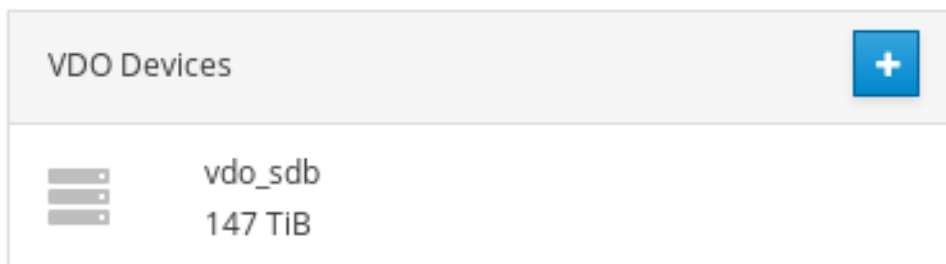
A list of volume groups configured on the server. Clicking a volume group opens the *Volume Group Overview* page. Clicking + opens the *Create Volume Group* window. See [Section 5.1, “Creating a volume group using Cockpit”](#) and [Section 1.2, “Understanding the Volume Group Overview page”](#) for more information.


**Figure 1.8. Volume Groups**

| Volume Groups   |                                 | + |
|---|---------------------------------|---|
|  | gluster_vg_sdb<br>186 GiB       |   |
|  | gluster_vg_sdd<br>138 TiB       |   |
|  | rhel_rhsdev-grafton2<br>930 GiB |   |

### 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 [Section 4.1, “Creating a Virtual Data Optimizer using Cockpit”](#) and [Section 1.3, “Understanding the VDO Overview page”](#) for more information.





**Figure 1.9. VDO Devices**

| VDO Devices   |                    | + |
|---|--------------------|---|
|  | vdo_sdb<br>147 TiB |   |

### 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.

Figure 1.10. Drives

| Drives  |   |
|---|---|
|  | AVAGO SMC3108 (0025e3d21626f...<br>931 GiB Hard Disk<br>R: 0 B/s W: 0 B/s       |
|  | AVAGO SMC3108 (00c6008c1843fe...<br>186 GiB Hard Disk<br>R: 0 B/s W: 0 B/s      |
|  | AVAGO SMC3108 (0007c8301a5ffe...<br>186 GiB Hard Disk<br>R: 0 B/s W: 0 B/s      |
|  | AVAGO SMC3108 (00046eef1c8dfe...<br>18.2 TiB Hard Disk<br>R: 0 B/s W: 332 KiB/s |

### Other Devices

A list of other devices attached to the server, that are not yet used.

Figure 1.11. Other Devices

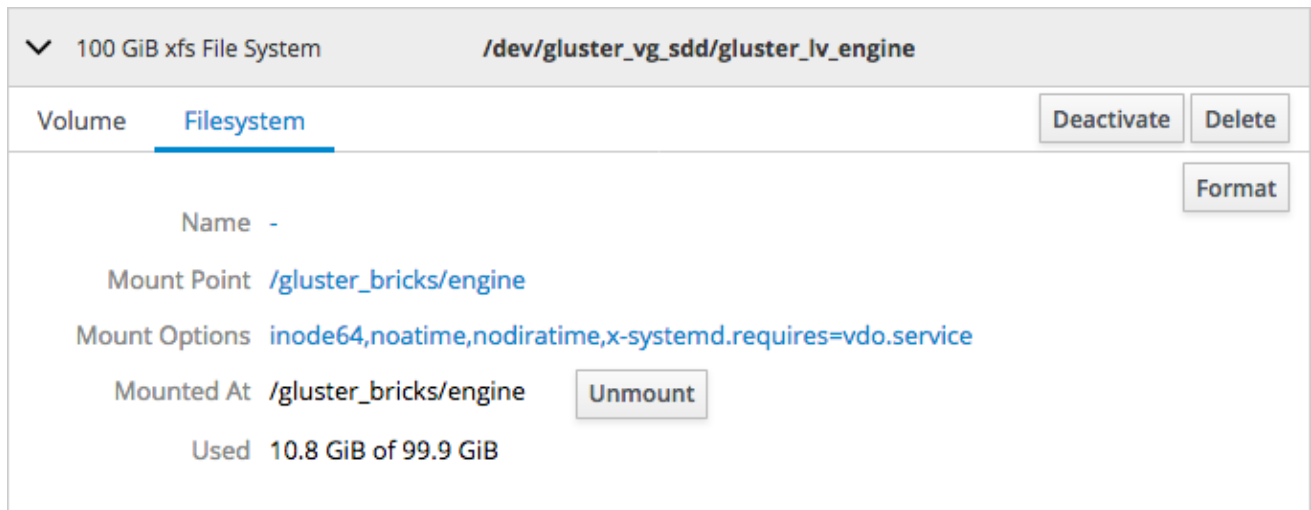
| Other Devices                               |
|---|
| /dev/mapper/vdo_sdd<br>138 TiB Block Device |

## 1.2. UNDERSTANDING THE VOLUME GROUP OVERVIEW PAGE

The Volume Group Overview page in Cockpit 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 Cockpit 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 Cockpit](#) 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 Cockpit and clicking the hostname, followed by **Storage**, and clicking any device listed under **VDO Devices**.

Figure 1.13. VDO Overview page

Storage &gt; vdo\_sdb

VDO Device vdo\_sdb

---

Device File `/dev/mapper/vdo_sdb`

Backing Device [AVAGO SMC3108 \(00c6008c1843fe6622013bcd1a800403\)](#)

Physical 5.29 GiB data + 25.8 GiB overhead used of 186 GiB (16%)

Logical 18.8 GiB used of 147 TiB (71% saved)

Index Memory 256 MiB

Compression  ON

Deduplication  ON

### Content

▼ 147 TiB Physical volume of gluster\_vg\_sdb
`/dev/mapper/vdo_sdb`

Physical Volume

Volume Group [gluster\\_vg\\_sdb](#)

Free 133 TiB

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 Cockpit and clicking the hostname, followed by **Storage**, and clicking any drive listed under **Drives**.

**Figure 1.14. Drive Overview page**

Storage > AVAGO SMC3108 (0025e3d21626fe6622013bcd1a800403)

| Drive            |                                      |
|------------------|--------------------------------------|
| Model            | SMC3108                              |
| Firmware Version | 4.29                                 |
| Serial Number    | 0025e3d21626fe6622013bcd1a800403     |
| World Wide Name  | 0x600304801acd3b012266fe2616d2e325   |
| Capacity         | 931 GiB, 1000 GB, 999653638144 bytes |
| Device File      | /dev/sda                             |

| Content   |  | <a href="#">Create partition table</a> |
|---|--|--|
| 1 GiB xfs File System                           |  | <b>/dev/sda1</b>                       |
| 930 GiB Physical volume of rhel_rhsdev-grafton2 |  | <b>/dev/sda2</b>                       |

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 COCKPIT

### 2.1. CREATING A PARTITION TABLE USING COCKPIT

Follow these steps to create a new partition table on a drive using Cockpit.

1. Log in to Cockpit.
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**

| Content   |           | Create partition table |
|---|-----------|------------------------|
| 1 GiB xfs File System                           | /dev/sda1 |                        |
| 930 GiB Physical volume of rhel_rhsdev-grafton2 | /dev/sda2 |                        |

The *Format device* window opens.

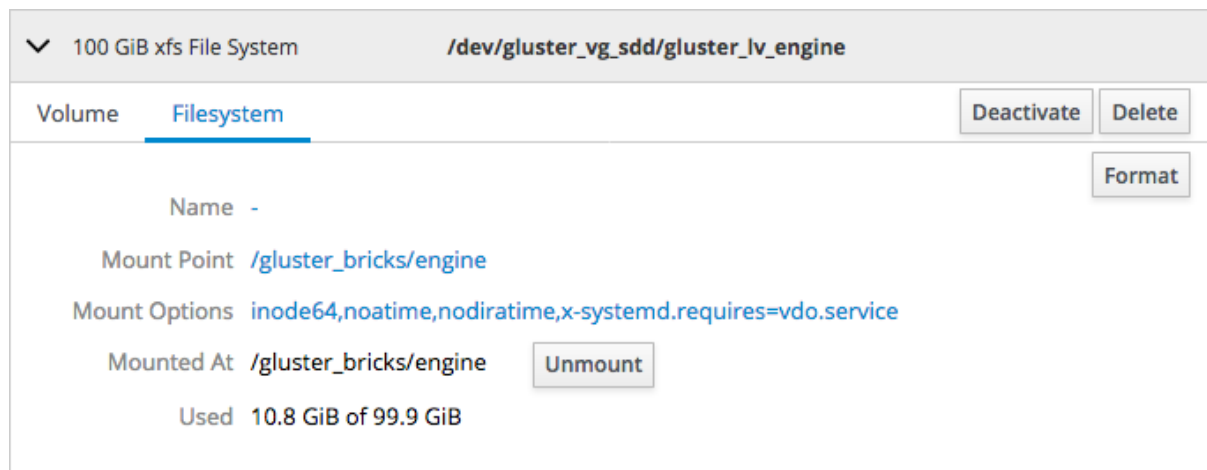
- a. Specify whether to **Erase** existing data completely by overwriting it with zeroes.
- b. Specify the **Partitioning** style to use.
- c. Click **Format**.

### 2.2. FORMATTING A DISK PARTITION USING COCKPIT

Follow these steps to format a partition with a file system using Cockpit.

1. Log in to Cockpit.
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**.

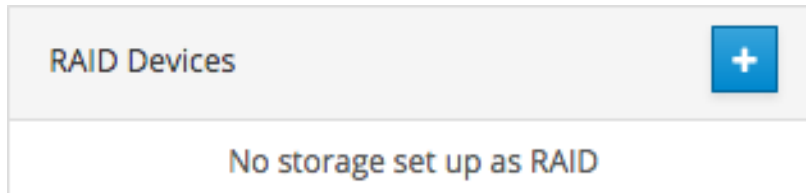


## CHAPTER 3. MANAGING RAID DEVICES USING COCKPIT

### 3.1. CONFIGURING A NEW RAID DEVICE USING COCKPIT

1. Log in to Cockpit.
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**

- 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**.

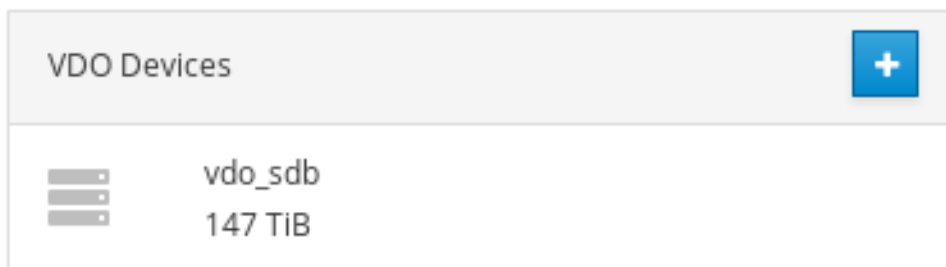
## CHAPTER 4. MANAGING VIRTUAL DATA OPTIMIZERS USING COCKPIT

### 4.1. CREATING A VIRTUAL DATA OPTIMIZER USING COCKPIT

Follow these steps to create a new VDO device.

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

**Figure 4.1. VDO Devices**



**Figure 4.2. Create VDO Device window**

- 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.

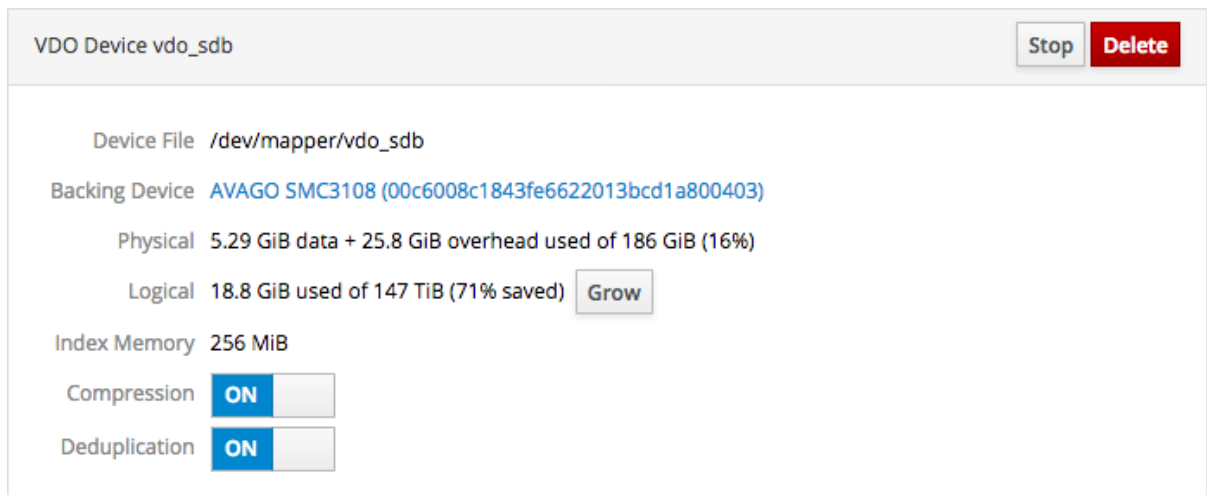
- e. Check any **Options** you want the new VDO device to use.
- f. Click **Create**.

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

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 Cockpit.
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 COCKPIT

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 Cockpit.
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.

**Figure 4.4.** The Compression toggle



- Click the **Compression** toggle under the device summary so that **OFF** is displayed.

## 4.4. DISABLING DEDUPLICATION ON A VDO DEVICE USING COCKPIT

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.

- Log in to Cockpit.
- Click the hostname → **Storage**. The *Storage Dashboard* page opens.
- Under **VDO Devices**, click the VDO device. The *VDO Device Overview* page opens.
- Locate the **Deduplication** toggle.

**Figure 4.5. The Deduplication toggle**



- Click the **Deduplication** toggle under the device summary so that **OFF** is displayed.

## 4.5. STOPPING A VDO DEVICE USING COCKPIT

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

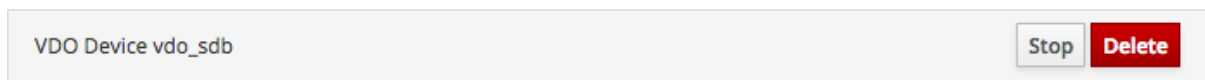
### Prerequisites

- Stop any volumes running on the VDO device.

### Procedure

- Log in to Cockpit.
- Click the hostname → **Storage**. The *Storage Dashboard* page opens.
- Under **VDO Devices**, click the VDO device. The *VDO Device Overview* page opens.
- Click **Stop**.

**Figure 4.6. The VDO device**



## 4.6. DELETING A VDO DEVICE USING COCKPIT

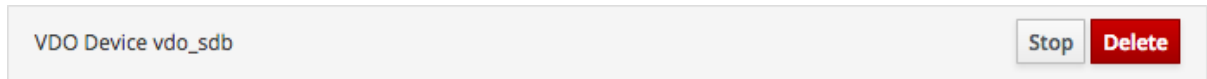
Follow these steps to delete a VDO device.

### Prerequisites

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

**Procedure**

1. Log in to Cockpit.
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**.

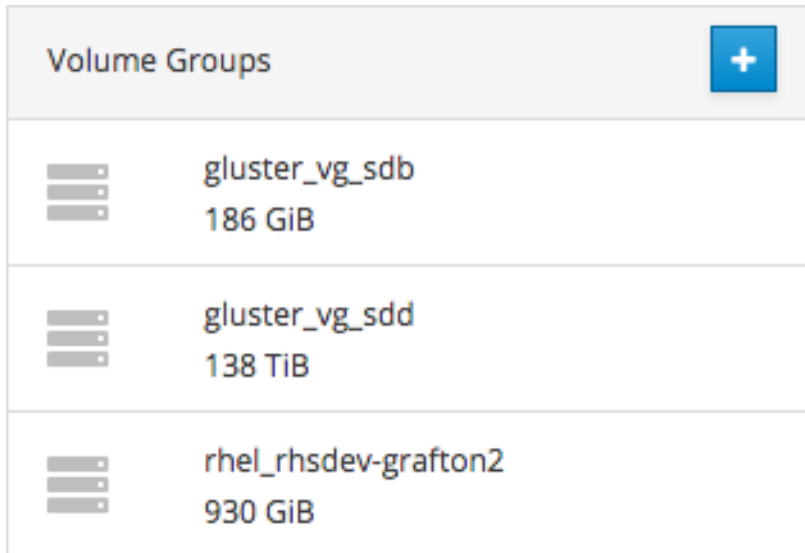
**Figure 4.7. The VDO device**




## CHAPTER 5. MANAGING VOLUME GROUPS USING COCKPIT

### 5.1. CREATING A VOLUME GROUP USING COCKPIT

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

**Figure 5.1. Volume Groups section**



| Volume Groups  |                                 | + |
|--|---------------------------------|---|
|   | gluster_vg_sdb<br>186 GiB       |   |
|   | gluster_vg_sdd<br>138 TiB       |   |
|  | rhel_rhsdev-grafton2<br>930 GiB |   |

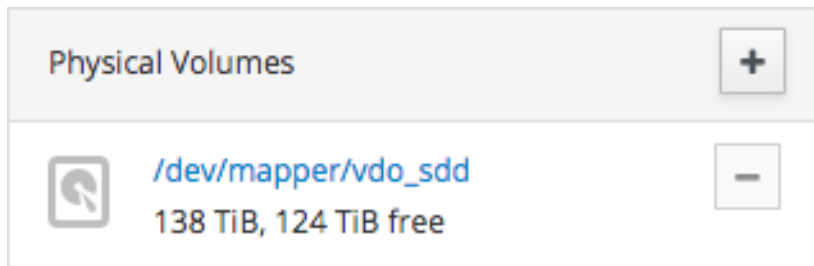
The *Create Volume Group* window opens.

- 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 COCKPIT

Follow these instructions to expand a volume group using Cockpit.

1. Log in to Cockpit.
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**.

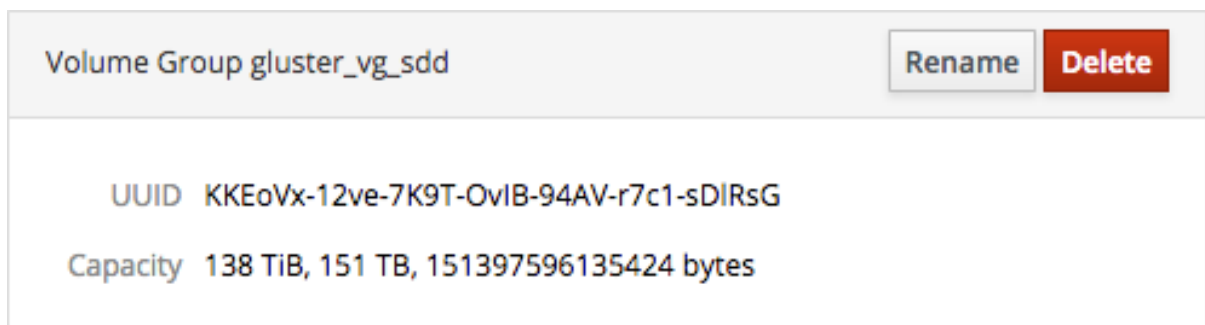
The capacity of the volume group is extended automatically.

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 COCKPIT

Follow these instructions to rename a volume group using Cockpit.

1. Log in to Cockpit.
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.

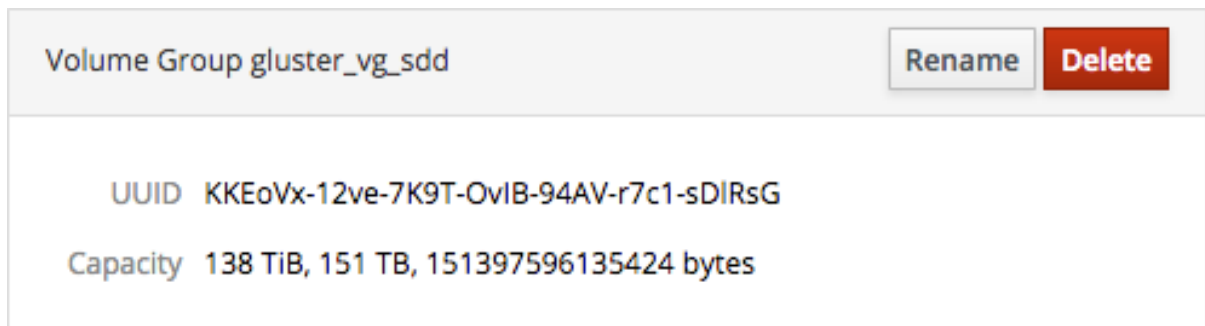
### 5.4. DELETING A VOLUME GROUP USING COCKPIT

Follow these instructions to delete a volume group using Cockpit.

1. Log in to Cockpit.

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**



The confirmation window opens.

5. Click **Delete** to confirm deletion.



## CHAPTER 6. MANAGING THIN POOLS USING COCKPIT

### 6.1. CREATING A THIN POOL USING COCKPIT

Follow these instructions to create a logical thin pool using Cockpit.

1. Log in to Cockpit.
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 COCKPIT

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

1. Log in to Cockpit.
2. Click the hostname → **Storage**.
3. Click the volume group. The *Volume Group Overview* page opens.
4. Click the thin pool.
5. On the **Pool** subtab, click **Grow**. The *Grow Logical Volume* window opens.
  - a. Specify the new **Size** of the thin pool.
  - b. Click **Grow**.

### 6.3. DEACTIVATING A THIN POOL USING COCKPIT

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

1. Log in to Cockpit.
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 COCKPIT

Follow these instructions to activate a logical thin pool using Cockpit.

1. Log in to Cockpit.
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 COCKPIT

### 7.1. ACTIVATING A LOGICAL VOLUME USING COCKPIT

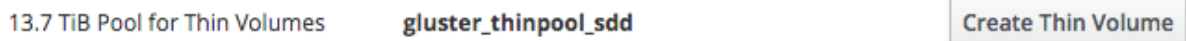
Follow these instructions to activate a logical volume using Cockpit.

1. Log in to Cockpit.
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 COCKPIT

1. Log in to Cockpit.
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**



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 COCKPIT

Follow these instructions to create a logical thin pool using Cockpit.

1. Log in to Cockpit.
2. Click the hostname → **Storage**.
3. Click the volume group. The *Volume Group Overview* page opens.

- Click **+ Create new Logical Volume**. The *Create Logical Volume* window opens.

**Figure 7.2. The Create Logical Volume window**

- Specify a **Name** for your logical volume.
- Set **Purpose** to **Block device for file systems**.
- Specify a **Size** for your logical volume.
- Click **Create**.

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

## 7.4. DEACTIVATING A LOGICAL VOLUME USING COCKPIT

Follow these instructions to deactivate a logical volume using Cockpit.

- Log in to Cockpit.
- Click the hostname → **Storage**.
- Click the volume group. The *Volume Group Overview* page opens.
- Click the logical volume.
- Click **Deactivate**.

**Figure 7.3. The logical volume summary**

## 7.5. DELETING A LOGICAL VOLUME USING COCKPIT

Follow these instructions to delete a thinly- or thickly-provisioned logical volume.

1. Log in to Cockpit.
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 COCKPIT

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

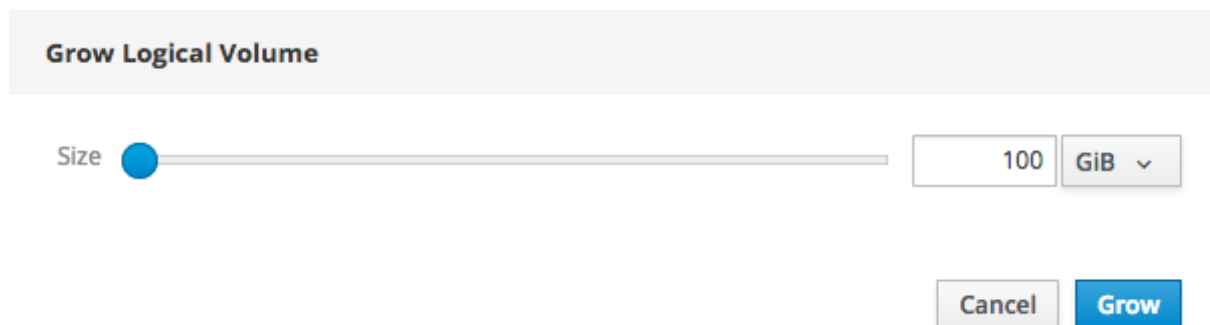
1. Log in to Cockpit.
2. Click the hostname → **Storage**.
3. Click the volume group. The *Volume Group Overview* page opens.
4. Click the logical volume.
5. On the **Volume** subtab, click **Grow**.

**Figure 7.4. Logical Volume section expanded**



The *Grow Logical Volume* window opens.

**Figure 7.5. The Grow Logical Volume window**



- a. Specify the new **Size** of the logical volume.
- b. Click **Grow**.

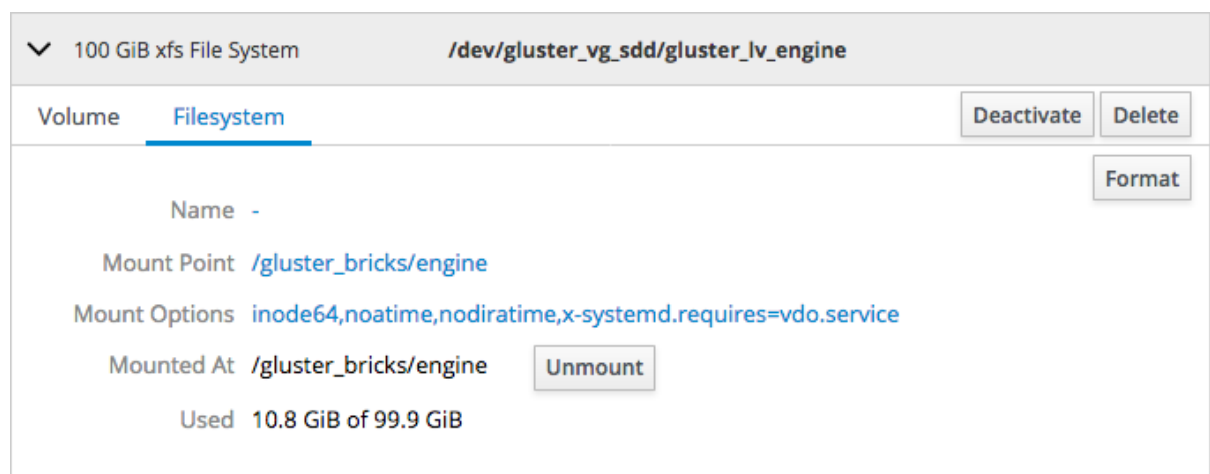
## CHAPTER 8. MANAGING FILE SYSTEMS USING COCKPIT

### 8.1. FORMATTING A LOGICAL VOLUME USING COCKPIT

Follow these steps to format a logical volume with a file system using Cockpit.

1. Log in to Cockpit.
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**.

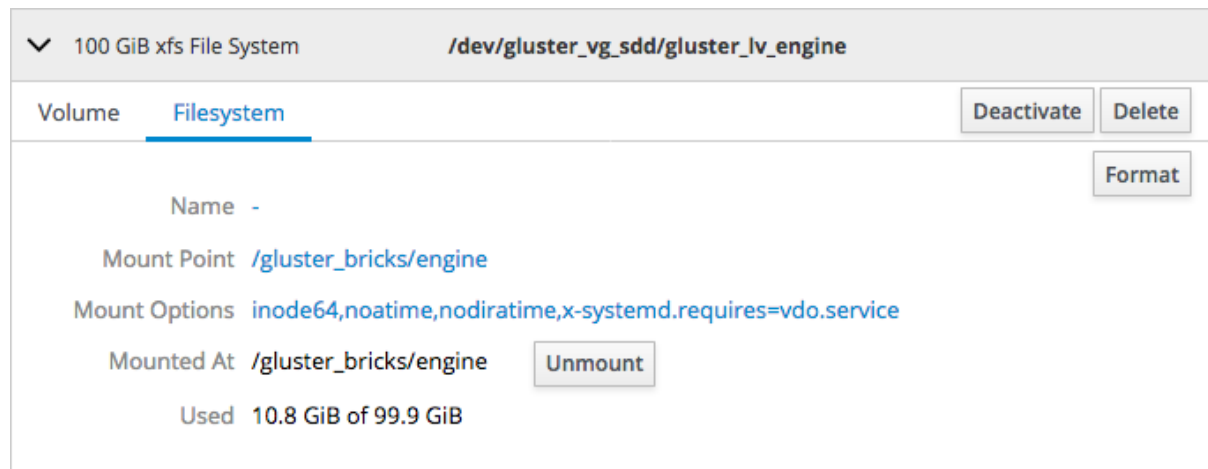
- a. Specify whether to **Erase** existing data completely by overwriting it with zeroes.
- b. Specify the file system **Type** to use.
- c. Specify a **Name** for the file system.
- d. Specify whether to use default or customized **Mounting** behavior.  
If you selected **Custom**, specify a **Mount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

### 8.2. CONFIGURING A MOUNT POINT USING COCKPIT

1. Log in to Cockpit.
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 behaviour 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 COCKPIT

1. Log in to Cockpit.
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 COCKPIT

1. Log in to Cockpit.
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**

The screenshot displays the logical volume summary for a 100 GiB xfs File System. The interface is divided into two tabs: "Volume" and "Filesystem", with "Filesystem" currently selected. The summary includes the following information:

- Name:** -
- Mount Point:** /gluster\_bricks/engine
- Mount Options:** inode64,noatime,nodiratime,x-systemd.requires=vdo.service
- Mounted At:** /gluster\_bricks/engine
- Used:** 10.8 GiB of 99.9 GiB

Control buttons are located in the top right corner: "Deactivate", "Delete", and "Format". An "Unmount" button is positioned next to the "Mounted At" field.



# CHAPTER 9. MANAGING GLUSTER VOLUMES USING COCKPIT

## 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 Cockpit

The screenshot shows the Hosted Engine dashboard in Cockpit. The dashboard is divided into several sections:

- Dashboard** (left sidebar)
- Hosted Engine** (left sidebar)
- Hosted Engine is up!** (top right status)
- Status of this host (rhsdev-grafton2)** (main content area)
- Hosts in this cluster** (table below)
- Manage Gluster** (button in the top right of the hosts table)

The **Status of this host (rhsdev-grafton2)** section shows the host name `rhsdev-grafton2` with a green checkmark. Below it are three buttons: `Put this host into local maintenance`, `Remove this host from maintenance`, and `Put this cluster into global maintenance`.

The **Hosts in this cluster** table lists the following hosts:

| Host Name                         | VM Status              | Local Maintenance |
|-----------------------------------|------------------------|-------------------|
| <code>rhsdev-grafton2.l...</code> | State: up              | false             |
| <code>rhsdev-grafton3.l...</code> | State: down_unexpected | false             |
| <code>rhsdev-grafton4.l...</code> | State: down            | false             |

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

### The Gluster Management dashboard in Cockpit

Dashboard

Hosted Engine

## Gluster Management

### Hosts

| Name              | Peer Status |
|-------------------|-------------|
| rhsdev-grafton2 ⓘ | CONNECTED   |
| rhsdev-grafton2 ⓘ | CONNECTED   |
| rhsdev-grafton2 ⓘ | CONNECTED   |

[Expand Cluster](#)

### Volumes

| Name        | Cluster | Volume Type | Volume Status | Bricks  |   |
|-------------|---------|-------------|---------------|---------|---|
| engine      | Default | REPLICATE   | ONLINE        | ↕ 3 ↘ 0 | ⓘ |
| plaindis    | Default | DISTRIBUTE  | ONLINE        | ↕ 1 ↘ 0 | ⓘ |
| sharded-dis | Default | DISTRIBUTE  | OFFLINE       | ↕ 0 ↘ 0 | ⓘ |
| data        | Default | REPLICATE   | ONLINE        | ↕ 3 ↘ 0 | ⓘ |
| vmstore     | Default | REPLICATE   | ONLINE        | ↕ 3 ↘ 0 | ⓘ |

[Create Volume](#)

## 9.2. EXPANDING THE HYPERCONVERGED CLUSTER BY ADDING A NEW VOLUME ON NEW NODES USING COCKPIT

Follow these instructions to use the Cockpit UI to expand your hyperconverged cluster.

### Prerequisites

- Verify that your scaling plans are supported.
- If your existing deployment uses certificates signed by a Certificate Authority for encryption, prepare the certificates that will be required for the new nodes.
- Install three physical machines to serve as the new hyperconverged nodes.  
Follow the instructions in [Deploying Red Hat Hyperconverged Infrastructure for Virtualization](#).
- Configure key-based SSH authentication without a password.  
Configure this from the node that is running Cockpit 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-based authentication](#) to configure key-based SSH authentication without a password.

## Procedure

1. Log in to Cockpit.
2. Click **Virtualization** → **Hosted Engine** and then click **Manage Gluster**.
3. Click **Expand Cluster**. The *Gluster Deployment* window opens.
  - a. On the *Hosts* tab, enter the FQDN or IP address of the new hyperconverged nodes and click **Next**.

**Expand Cluster** [X]

Hosts                      Volumes                      Bricks                      Review

① ————— ② ————— ③ ————— ④

Host1:

Host2:

Host3:

[Cancel]    [< Back]    [Next >]

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

**Expand Cluster** [X]

Hosts                      Volumes                      Bricks                      Review

① ————— ② ————— ③ ————— ④

Name:

Volume Type:

Arbiter:

Brick Dirs:  [trash icon]

[+ Add Volume]

[Cancel]    [< Back]    [Next >]

- c. On the *Bricks* tab, specify the details of the disks to be used to create the Gluster volume.

Expand Cluster
✕

Hosts                      Volumes                      Bricks                      Review

1 ————— 2 ————— 3 ————— 4

---

**Raid Information** ⓘ

Raid Type: RAID 6 ▾

Stripe Size(KB): 256 ▾

Data Disk Count: 12 ▾

**Brick Configuration**

Select Host: newhost1.example.com ▾

| LV Name    | Device Name | Size(GB) | Thinp                               | Mount Point                | Enable Dedupe & Compression             |
|------------|-------------|----------|-------------------------------------|----------------------------|---|
| new_volume | sdb         | 500      | <input checked="" type="checkbox"/> | /gluster_bricks/new_volume | <input type="checkbox"/> <span>🗑</span> |

[+ Add Bricks](#)

Configure LV Cache

ⓘ **Arbiter bricks will be created on the third host in the host list.**

Cancel    < Back    Next >

- d. On the *Review* tab, check the generated gdeploy file for any problems. When you are satisfied, click **Deploy**.

Expand Cluster
✕

Hosts                      Volumes                      Bricks                      Review

1 ————— 2 ————— 3 ————— 4

---

Generated Gdeploy configuration : /var/lib/ovirt-hosted-engine-setup/gdeploy/gdeployConfig.conf
✎ Edit 🔄 Reload

```

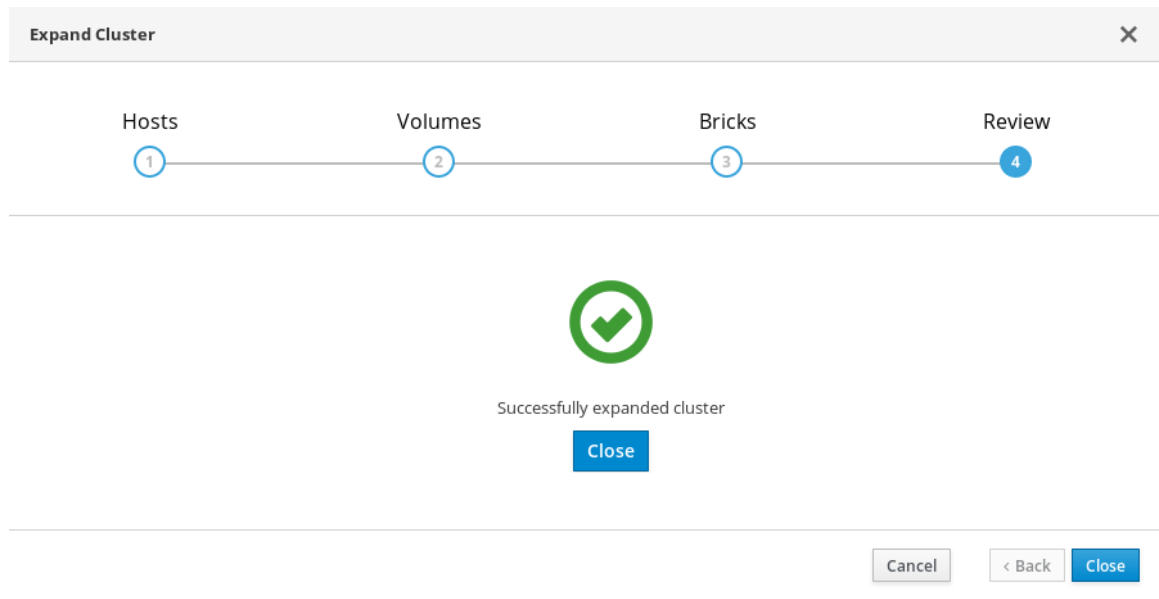
#gdeploy configuration generated by cockpit-gluster plugin
[hosts]
newhost1.example.com
newhost2.example.com
newhost3.example.com

[script1:newhost1.example.com]
action=execute
ignore_script_errors=no
file=/usr/share/gdeploy/scripts/grafon-sanity-check.sh -d sdb -h newhost1.example.com, newhost2.example.com, newhost3.example.com

[script1:newhost2.example.com]
                
```

Cancel    < Back    Deploy

Deployment takes some time to complete. The following screen appears when the cluster has been successfully expanded.



### 9.3. CREATING AN ADDITIONAL GLUSTER VOLUME USING COCKPIT

Follow these instructions to use the Cockpit UI 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 Cockpit.
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**.

Create Volume
✕

Hosts
Volumes
Bricks
Review

1
2
3
4

---

|  |   |
|--|---|
| Host1  | <input type="text" value="10.70.41.139"/> |
| Host2  | <input type="text" value="10.70.41.138"/> |
| Host3 <span style="font-size: 0.8em;">ⓘ</span> | <input type="text" value="10.70.41.137"/> |

ⓘ gdeploy will login to gluster hosts as root user using passwordless ssh connections. Make sure, passwordless ssh is configured for all gluster hosts from the first host.

Cancel
< Back
Next >

b. On the *Volumes* tab, specify the details of the volume you want to create and click **Next**.

Create Volume
✕

Hosts
Volumes
Bricks
Review

1
2
3
4

---

| Name                              | Volume Type                            | Arbiter                  | Brick Dirs   |
|-----------------------------------|--|--------------------------|--|
| <input type="text" value="vol2"/> | <input type="text" value="Replicate"/> | <input type="checkbox"/> | <input type="text" value="/gluster_bricks/vol2/vol2"/> |

➕ Add Volume

Cancel
< Back
Next >

c. On the *Bricks* tab, specify the details of the disks to be used to create the volume and click **Next**.

Hosts 1 — Volumes 2 — Bricks 3 — Review 4

---

**Raid Information** ⓘ

Raid Type: RAID 6

Stripe Size(KB): 256

Data Disk Count: 12

**Brick Configuration**

Select Host: 10.70.41.139

| LV Name | Device Name | Size(GB) | Thinp                               | Mount Point          | Enable Dedupe & Compression |
|---------|-------------|----------|-------------------------------------|----------------------|-----------------------------|
| vol2    | sdb         | 500      | <input checked="" type="checkbox"/> | /gluster_bricks/vol2 | <input type="checkbox"/>    |

[Add Bricks](#)

Configure LV Cache

ⓘ Arbiter bricks will be created on the third host in the host list.

- d. On the *Review* tab, check the generated configuration file for any incorrect information. When you are satisfied, click **Deploy**.

Create Volume ✕

---

Hosts 1 — Volumes 2 — Bricks 3 — Review 4

---

Generated Gdeploy configuration : /var/lib/ovirt-hosted-engine-setup/gdeploy/gdeployConfig.conf

```
#gdeploy configuration generated by cockpit-gluster plugin
[hosts]
10.70.41.139
10.70.41.138
10.70.41.137

[script1:10.70.41.139]
action=execute
ignore_script_errors=no
file=/usr/share/gdeploy/scripts/grafon-sanity-check.sh -d sdb -h 10.70.41.139,10.70.41.138,10.70.41.137

[script1:10.70.41.138]
action=execute
```

The following screen is displayed when deployment completes successfully.

Gluster Deployment ✕

Hosts (1) — Volumes (2) — Bricks (3) — Review (4)

Successfully created volume

Close

Cancel < Back Close