

Gluster Storage Management

*oVirt Workshop - Bangalore
October 2012*

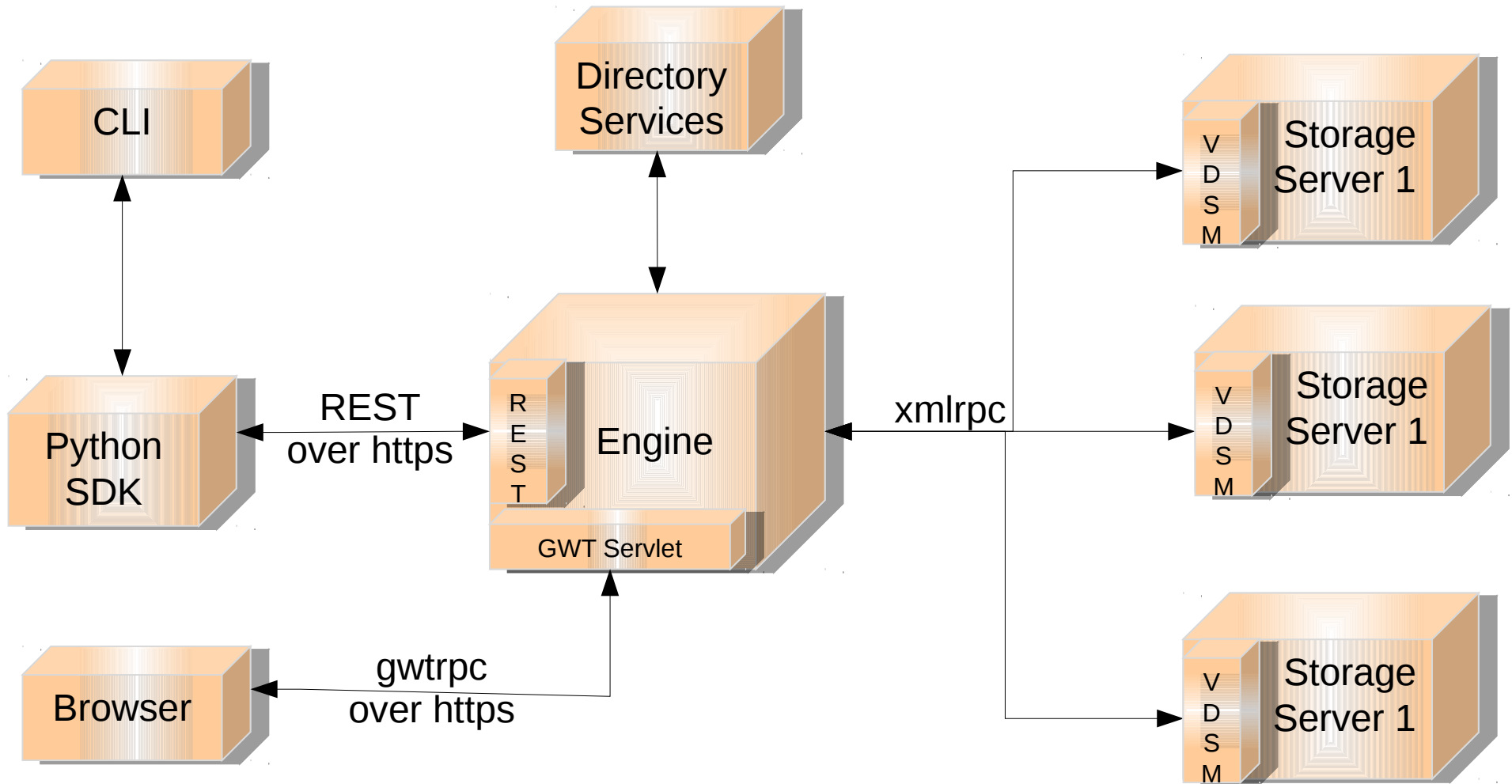
Kanagaraj Mayilsamy
RedHat



Introduction

- Management console for Gluster Storage
- Based on oVirt platform
- Create and Manage Storage Clusters
 - Create / expand / shrink / delete Clusters
 - Create / expand / shrink / manage Volumes
- Advanced Search capabilities
- Audit and Alerts
- Gluster plugin for VDSM

Architecture



Features

- Cluster Management
 - Create Cluster
 - Add / Remove Storage Servers
 - Delete Cluster
 - Import existing Clusters
- Volume Management
 - Create Volume
 - Add / Remove bricks
 - Start / Stop volume
 - Delete Volume

Features contd...

- Optimizing the Volume for Virt Store
- Event Notifications and Alerts
- Gluster Mode & Customized Web UI
- REST api
- Python CLI & SDK support

Landing



File Edit View History Bookmarks Tools Help

oVirt Engine Web Administrati... +

127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Volumes: x ☆ 🔍

Clusters Hosts **Volumes** Users Events

Tree

Expand All Collapse All ↻

- System
 - Clusters
 - Default
 - Hosts
 - Volumes

Create Volume Remove Start Stop Optimize for Virt Store

Name	Volume Type	Number of Bricks	Transport Types	Status
------	-------------	------------------	-----------------	--------

Bookmarks

Tags

Last Message: ✓ 2012-Oct-15, 22:44:29 Host cluster data was removed by admin@internal

Alerts (0) Events Tasks (0)

Creating Cluster



The screenshot displays the oVirt Engine Web Administration interface. A 'New Cluster' dialog box is open, showing the 'General' tab. The dialog contains the following fields and options:

- Name:** data
- Description:** Data
- Import existing gluster configuration
- Address:** [Empty text field]
- Fingerprint:** [Empty text field]
- Root Password:** [Empty text field]

At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background interface shows a search bar with 'Cluster:' entered, a tree view on the left with 'System' > 'Clusters' > 'Default' selected, and a status bar at the bottom with a message: 'Host cluster data was removed by admin@internal'.

Adding Host to Cluster

The screenshot displays the oVirt Engine Web Administration interface. A 'New Host' dialog box is open, showing the 'General' tab. The dialog contains the following fields and options:

- Host Cluster: data
- Name: server1
- Address: 10.16.159.14
- Root Password: [masked]
- Automatically configure host firewall:

At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background interface shows a search bar with 'Host: cluster = data', a tree view on the left with 'data' selected, and a status bar at the bottom with a message: 'Host server1 was removed by admin@internal.' and notification icons for Alerts (0), Events, and Tasks (0).

Creating Volume



File Edit View History Bookmarks Tools Help

oVirt Engine Web Administrati...

127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Volume: cluster = data

Clusters Hosts Volumes

Tree

- System
 - Clusters
 - Default
 - Hosts
 - Volumes
 - data
 - Hosts
 - server1
 - Volumes

Bookmarks

Tags

Last Message: 2012-Oct-15, 22:54:49 Available memory of host server2 [608 MB] is under defined threshold [1024 MB]. Alerts (0) Events Tasks (0)

Create Volume

Volume Cluster: data

Name: videos

Type: Distribute

Transport Type: TCP

Bricks: [Add Bricks](#) (0 bricks selected)

Access Protocols

Gluster:

NFS:

CIFS:

Allow Access From: *

(Comma separated list of IP addresses/hostnames)

OK Cancel

Adding Bricks to Volume

The screenshot shows the oVirt Web Administration interface. The main window displays a tree view on the left with 'System' > 'Clusters' > 'Default' > 'data' > 'server1' > 'Volumes' selected. The 'Add Bricks' dialog box is open in the center, showing the following details:

- Volume Type: Distribute
- Server: 10.16.159.14 (with an 'Add' button)
- Brick Directory: (with a 'Clear' button)
- Table of bricks to be added:

Server	Brick Directory
<input type="checkbox"/> 10.16.159.14	/export/videos-brick1
<input type="checkbox"/> 10.16.159.228	/export/videos-brick2

Buttons for 'Move Up', 'Move Down', 'Remove', 'Remove All', 'OK', and 'Cancel' are also visible in the dialog.

At the bottom of the interface, a status bar shows: Last Message: 2012-Oct-15, 22:54:49 Available memory of host server2 [608 MB] is under defined threshold [1024 MB].

Searching Volumes



File Edit View History Bookmarks Tools Help

oVirt Engine Web Administrati...

127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes-bricks

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Volumes:

Clusters Hosts **Volumes** Users

Tree

- System
 - Clusters
 - Default
 - Hosts
 - Volumes
 - data
 - Hosts
 - server1
 - server2
 - Volumes
 - videos

Create Volume Remove Start Stop Optimize for Virt Store

Name	Volume Type	Number of Bricks	Transport Types	Status
videos	Distribute	2	TCP	Up

Summary **Bricks** Volume Options Permissions

Add Bricks Remove Bricks

Server	Brick Directory	Status
10.16.159.14	/export/videos-brick1	Up
10.16.159.228	/export/videos-brick2	Up

Bookmarks

Tags

Last Message: 2012-Oct-15, 22:57:08 Gluster Volume videos started.

Alerts (0) Events Tasks (0)

Expanding/Shrinking Volume



The screenshot displays the oVirt Engine Web Administration interface. The browser address bar shows the URL `127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes`. The page title is "Open Virtualization Manager" and the user is logged in as `admin@internal`. A search bar at the top left contains the query "Volumes: Cluster = data and status =". A search results dropdown menu is open, showing two entries: "Volumes: Cluster = data and status = up" and "Volumes: Cluster = data and status = down". The left sidebar shows a tree view with the following structure:

- System
 - Clusters
 - Default
 - Hosts
 - Volumes
 - data
 - Hosts
 - server1
 - server2
 - Volumes
 - videos

The bottom status bar shows a message: "Last Message: 2012-Oct-15, 23:07:27 Volume Option set on videos." and notification icons for Alerts (0), Events, and Tasks (0).

Events



File Edit View History Bookmarks Tools Help

oVirt Engine Web Administrati...

127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#events

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Events:

Clusters Hosts Volumes Users

Events

Tree

Expand All Collapse All

- System
 - Clusters
 - Default
 - Hosts
 - Volumes
 - data
 - Hosts
 - server1
 - server2
 - Volumes
 - videos

Bookmarks

Tags

Basic View **Advanced View**

Time	Message	Event ID	User	Host	Cluster	Gluster Volume	Correlati
2012-Oct-15, 23:07:27	Volume Option set on videos.	4002	admin@internal		data	videos	6825fa
2012-Oct-15, 23:06:46	Gluster Volume music created.	4000	admin@internal		data	music	68b193
2012-Oct-15, 23:06:46	Volume Option set on music.	4002	admin@internal		data	music	1547f3
2012-Oct-15, 23:06:44	Volume Option set on music.	4002	admin@internal		data	music	1f3d71
2012-Oct-15, 23:06:41	Volume Option set on music.	4002	admin@internal		data	music	625d72
2012-Oct-15, 22:57:08	Gluster Volume videos started.	4004	admin@internal		data	videos	76cd11
2012-Oct-15, 22:56:33	Gluster Volume videos created.	4000	admin@internal		data	videos	721c23
2012-Oct-15, 22:56:33	Volume Option set on videos.	4002	admin@internal		data	videos	3c73a2
2012-Oct-15, 22:56:31	Volume Option set on videos.	4002	admin@internal		data	videos	316769
2012-Oct-15, 22:56:29	Volume Option set on videos.	4002	admin@internal		data	videos	31533c
2012-Oct-15, 22:54:49	Available memory of host server2 [608 MB] is under defined threshold [102531			server2	data		
2012-Oct-15, 22:54:47	Warning, Low disk space. Host server2 has less than 1000 MB of free spa 23			server2	data		
2012-Oct-15, 22:54:22	Detected new Host server2. Host state was set to Up.	13		server2	data		
2012-Oct-15, 22:54:18	Host server2 was added by admin@internal.	42	admin@internal	server2	data		38a178
2012-Oct-15, 22:53:14	Host server2 was removed by admin@internal.	44	admin@internal	server2	Default		5eb084
2012-Oct-15, 22:53:00	Available memory of host server2 [608 MB] is under defined threshold [102531			server2	Default		
2012-Oct-15, 22:52:59	Warning, Low disk space. Host server2 has less than 1000 MB of free spa 23			server2	Default		

Last Message: 2012-Oct-15, 23:07:27 Volume Option set on videos.

Alerts (0) Events Tasks (0)

REST Api



```
File Edit View History Bookmarks Tools Help
http://127.0.1...glustervolumes
127.0.1.1:8080/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes
Google

- <gluster_volumes>
- <gluster_volume id="50074353-0090-4978-96a0-0296f7c4b62c" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c">
  - <actions>
    <link rel="start" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/start"/>
    <link rel="stop" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/stop"/>
    <link rel="setoption" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/setoption"/>
    <link rel="resetalloptions" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/resetalloptions"/>
    <link rel="resetoption" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/resetoption"/>
    <link rel="rebalance" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/rebalance"/>
  </actions>
  <name>music</name>
  <link rel="bricks" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/50074353-0090-4978-96a0-0296f7c4b62c/bricks"/>
  <cluster id="5d39c1ca-16ec-11e2-b7b5-cb9c378d098b" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b"/>
  <volume_type>distributed</volume_type>
  - <transport_types>
    <transport_type>tcp</transport_type>
  </transport_types>
  <replica_count>0</replica_count>
  <stripe_count>0</stripe_count>
  - <options>
    <option value="*" name="auth.allow"/>
    <option value="off" name="nfs.disable"/>
    <option value="on" name="user.cifs"/>
  </options>
  - <status>
    <state>down</state>
  </status>
</gluster_volume>
- <gluster_volume id="c9c0d8ef-5552-4573-a43d-d0c187c90760" href="/api/clusters/5d39c1ca-16ec-11e2-b7b5-cb9c378d098b/glustervolumes/c9c0d8ef-5552-4573-a43d-d0c187c90760">
```

oVirt

Demo

Upcoming

- Sync with Gluster command line
- Support for creating geo-replicated volumes
- Top and Profiling
- Managing Gluster hooks
- Async Tasks
- UFO
- And lot more...

How To Contribute

- Git repository
`git://gerrit.ovirt.org/ovirt-engine`
- IRC Channel
 - #ovirt on oftc

oVirt

Q & A



THANK YOU !

<http://www.ovirt.org>
kmayilsa@redhat.com