



cloudstack
open source cloud computing



- Develop a clustered, scale-out S

- Built from the ground up to support



Efficiency is auto
Fueling new expectatio

- All-flash architecture (no spinning

- Leverage compression, de-duplic

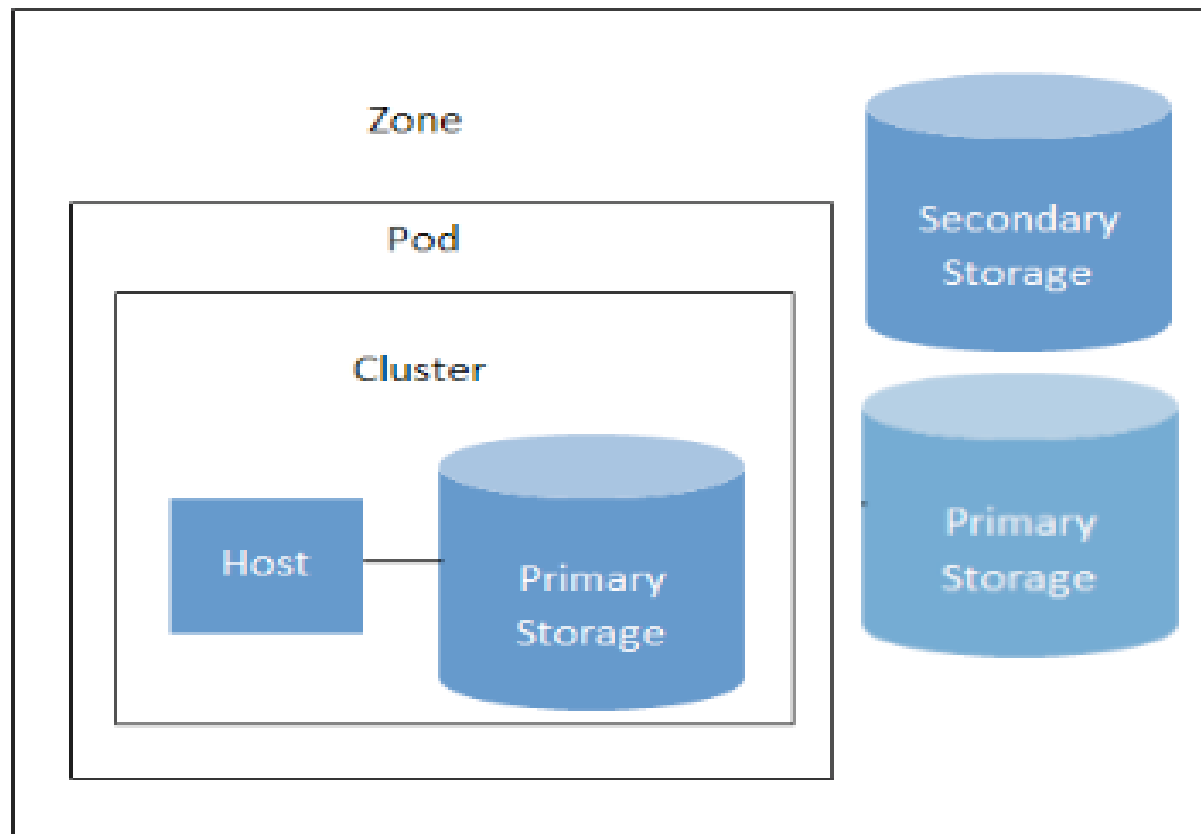
- Rest-like API to enable automatic

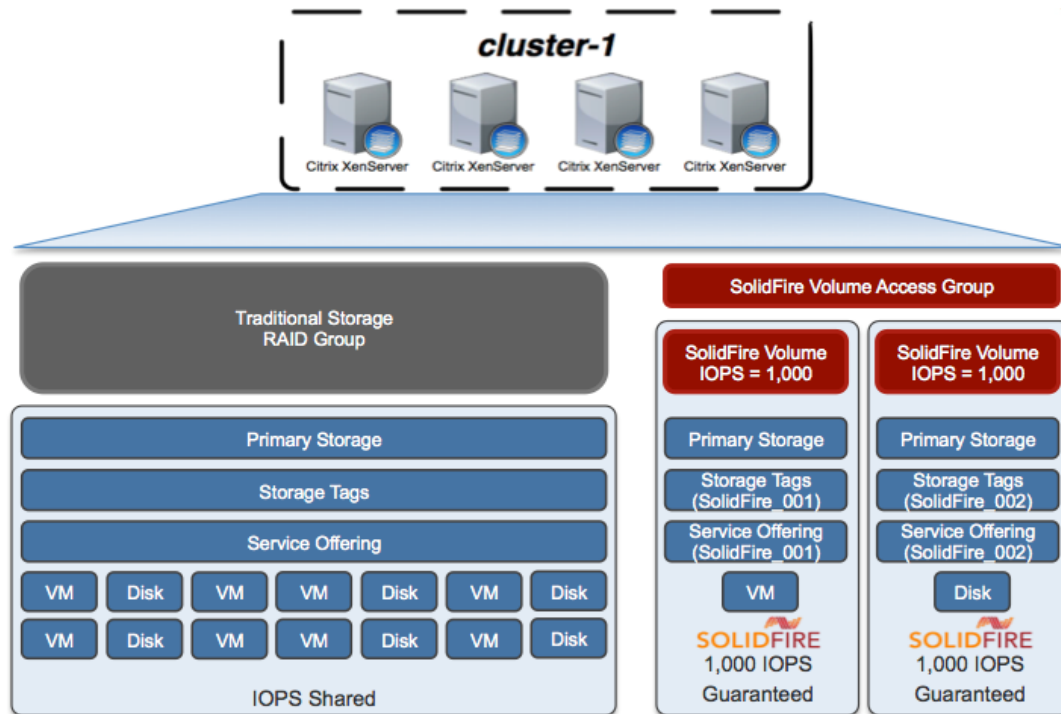
News: Top 10 storage trends in 2011: solid-state technology, cloud, big data make a mark December 27, 2011 / 5min


SolidFire QoS is the most advanced QoS control available for provisioning

Performance Virtualization

Blog
Lorem ipsum ultricies vel December 13, Looking bar adipiscing # December 13,





 Add Primary Storage

Scope:

Hypervisor:

* Zone:

* Name:

* Protocol:

* Provider:

Managed:

Capacity Bytes:

Capacity IOPS:

URL:

Storage Tags:


Cancel

OK

Project: Default view



[Home](#) > [Infrastructure](#) > [Primary Storage](#) >

 [+ Add Primary Storage](#)

 Dashboard


 Instances

 Affinity Groups

 Storage

 Network

 Templates


 Events

 Projects


Name	Server	Path	Cluster	Scope	Quickview
cloudstack-kvm3 Lo...	192.168.129.84	/var/lib/libvirt/images	Cluster3	HOST	+
192.168.129.128 Lo...	VMFS datastore: datastore-15	datastore-15	192.168.129.171/D...	HOST	+
192.168.129.121 Lo...	VMFS datastore: datastore-11	datastore-11	192.168.129.171/D...	HOST	+
SolidFire_A	10.10.8.118	MVIP=192.168.139...		ZONE	+
XenServer-6.2-2 Lo...	192.168.129.186	ext	Cluster1	HOST	+
XenServer-6.2-1 Lo...	192.168.129.77	ext	Cluster1	HOST	+

apachecloudstack™

0 Notifications | Admin User ▾

Project: Default view ▾ 

Home > Service Offerings - Disk Offerings >

Select offering: Disk Offerin ▾  **+ Add Disk Offering**

Name	Description	Custom Disk Size	Disk Size (in GB)	Order	Quickview
Small	Small Disk, 5 GB	No	5	▲ ▼ ▲ ▼ ≡	+
Medium	Medium Disk, 20 GB	No	20	▲ ▼ ▲ ▼ ≡	+
Large	Large Disk, 100 GB	No	100	▲ ▼ ▲ ▼ ≡	+
Custom	Custom Disk	Yes	N/A	▲ ▼ ▲ ▼ ≡	+

Dashboard

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+ Add Disk Offering

* Name: SF DO 1

* Description: SF DO 1 (Min = 1,000; Max = 2,000)

Storage Type: shared

Provisioning Type: thin

Custom Disk Size:

* Disk Size (in GB): 100

QoS Type: storage

Custom IOPS:

Min IOPS: 1000

Max IOPS: 2000

Hypervisor Snapshot Reserve: 100

Write-cache Type: No disk cache

Storage Tags: SolidFire_1

Public:

Cancel

OK

+ Add Disk Offering

* Name: SF DO 2

* Description: SF DO 2 (Customizable IOPS)

Storage Type: shared

Provisioning Type: thin

Custom Disk Size:

* Disk Size (in GB): 100

QoS Type: storage

Custom IOPS:

Hypervisor Snapshot Reserve: 100

Write-cache Type: No disk cache

Storage Tags: SolidFire_1

Public:

Cancel

OK

apachecloudstack

0 Notifications | Admin User

Project: Default view

Home > Storage - Volumes >

Select view: Volumes

Upload from Local | Upload | **+ Add**

Name	Type	Hypervisor	VM display name	Quickview
Volume-B	DATADISK	None		+
Volume-A	DATADISK	None		+

+ Add Volume

Please fill in the following data to add a new volume.

* Name:

Availability Zone:

Disk Offering:

+ Add Volume

Please fill in the following data to add a new volume.

* Name:

Availability Zone:

Disk Offering:

Min IOPS:



Max IOPS:

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- Accounts


Home > Storage - Volumes > Vol-1 >

Refresh

Details

  [View snapshot\(s\)](#)

Name	Vol-1
ID	2eed7f17-a48c-40bf-8672-1aace0db83c9
Zone	Zone1
State	Allocated

 **Attach Disk**

Attach Disk

Instance:

Cluster : AutoTest2-sEnN

Active Volumes

Deleted Volumes

► Filter Results

Volume Overview

Active Volumes

	Volume ID ▲	Volume Name	Min IOPS	M
	21	Vol-1	1000	2000

Modify Volume

Total Size : 214.7 GB

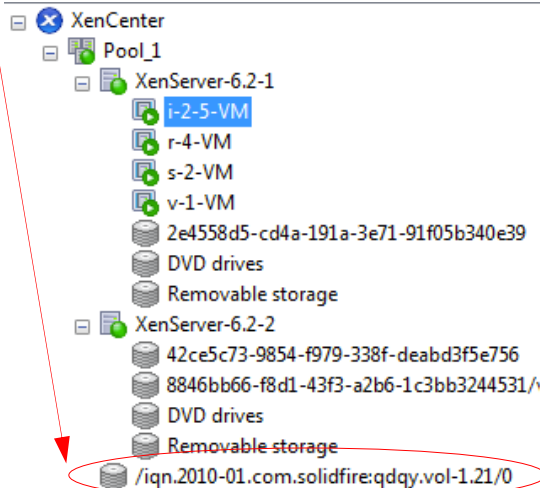
Access : Read / Write

Quality of Service Settings

IO Size	Min	Max	Burst
4 KB	1000 IOPS	2000 IOPS	3000 IOPS
8 KB	625 IOPS	1250 IOPS	1875 IOPS
16 KB	370 IOPS	741 IOPS	1111 IOPS
256 KB	26 IOPS	51 IOPS	77 IOPS
Effective Max Bandwidth		13.98 MB / sec	20.97 MB / sec

Cancel Modification

Save Changes



DVD Drive 1: <empty>

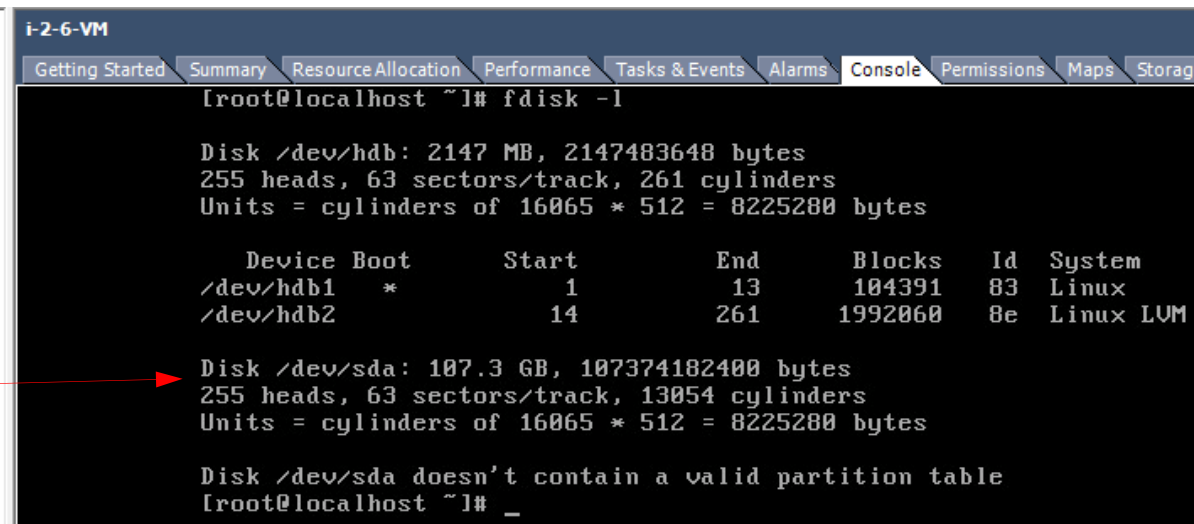
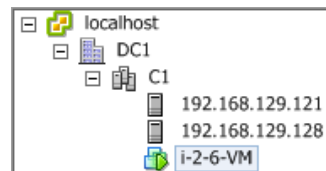
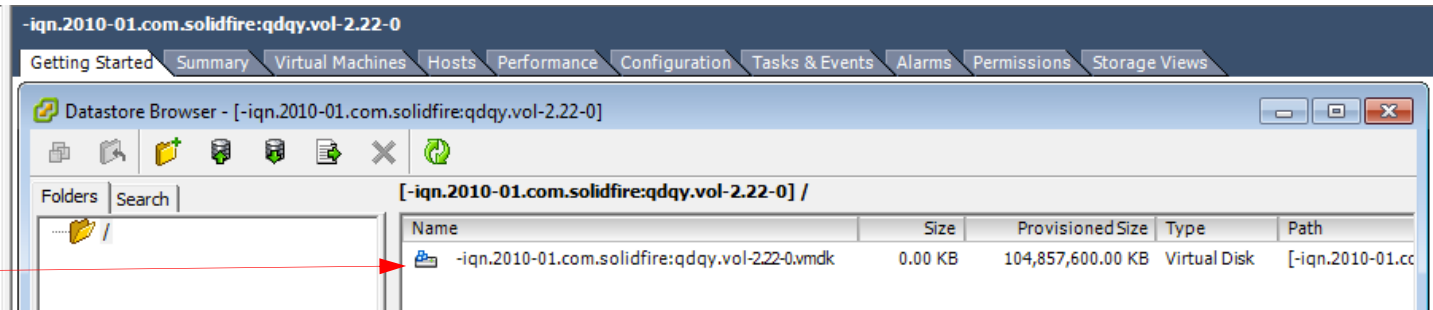
```
[root@UM-1 ~]# fdisk -l

Disk /dev/xuda: 21.4 GB, 21474836480 bytes
255 heads, 63 sectors/track, 2610 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
/dev/xuda1    *           1          13        104391   83  Linux
/dev/xuda2                14         2610       20860402+  8e  Linux LVM

Disk /dev/xvdb: 107.3 GB, 107374182400 bytes
255 heads, 63 sectors/track, 13054 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

Disk /dev/xvdb doesn't contain a valid partition table
[root@UM-1 ~]#
```



```
cloudstack@cloudstack-kvm3: ~
cloudstack@cloudstack-kvm3:~$ sudo fdisk -l
Disk /dev/sda: 107.4 GB, 107374182400 bytes
255 heads, 63 sectors/track, 13054 cylinders, total 209715200 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x000a519b

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1  *           2048       20762095    103809024   83  Linux
/dev/sda2                207622142   209713151     1045505    5  Extended
/dev/sda5                207622144   209713151     1045504    82  Linux swap / Solaris

Disk /dev/sdb: 107.4 GB, 107374182400 bytes
255 heads, 63 sectors/track, 13054 cylinders, total 209715200 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disk identifier: 0x00000000

Disk /dev/sdb doesn't contain a valid partition table
cloudstack@cloudstack-kvm3:~$
```









```
[root@localhost ~]# fdisk -l

Disk /dev/vda: 1073 MB, 1073741824 bytes
139 heads, 8 sectors/track, 1885 cylinders
Units = cylinders of 1112 * 512 = 569344 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x000b56d8





   Device Boot      Start         End      Blocks   Id  System
/dev/vda1                2             1886     1047552    83  Linux

Disk /dev/vdb: 107.4 GB, 107374182400 bytes
16 heads, 63 sectors/track, 208050 cylinders
Units = cylinders of 1008 * 512 = 516096 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

[root@localhost ~]#
```


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[Home](#) > [Storage - Volumes](#) >

Select view: Volumes
 
 Upload from Local
  Upload
  Add

Name	Type	Hypervisor	VM display name	Quickview
ROOT-6	ROOT	VMware	VM-2	+
ROOT-5	ROOT	XenServer	VM-1	+
Vol-2	DATADISK	VMware	VM-2	+
Vol-1	DATADISK	XenServer	VM-1	+
Vol-3	DATADISK	KVM	VM-3	+
ROOT-10	ROOT	KVM	VM-3	+

Robust Support for Hypervisor Snapshots and Volume Snapshots

Hypervisor Snapshots

- Hypervisor snapshots are delta files created in the storage repository (for XenServer) or datastore (for ESXi) of the VDI (VHD file for XenServer/VMDK file for ESXi) that they are a snapshot of.
- CloudStack and the SolidFire plug-in support hypervisor snapshots through a property of a Compute or Disk Offering called Hypervisor Snapshot Reserve.

Volume Snapshots (also known as Backups)



Volume snapshots have been traditionally stored as backups on secondary storage.

.CloudStack and the SolidFire plug-in support taking volume snapshots that exist on the SolidFire SAN instead of on secondary storage (i.e. not a backup).

