

Using ElastiStor Snapshots for VMware Infrastructure

For the VMware infrastructure, CloudByte ElastiStor provides a service named *CloudByte Virtualization Service (CVS)*, which integrates with VMWare vCenter to configure QoS per VM/Disk/Datastore and to enhance performance of common VM operations such as backup, recovery, and cloning.

This document focuses on the Snapshot feature of the CVS, by explaining its architecture, application, and usage.

CloudByte Virtualization Service

The CVS acts as a bridge between the VMWare Infrastructure (the compute layer) and ElastiStor (the storage layer). CVS manages ESX servers connected to the CloudByte storage systems and provide end-to-end storage monitoring and management for VMware infrastructures.

Snapshotting with CVS

For Backup

1. A VM-level snapshot of the Storage Volume is captured.
2. A storage-array level snapshot is then captured.
3. CVS deletes the VM-level snapshot you have (in step 1).

For Restore

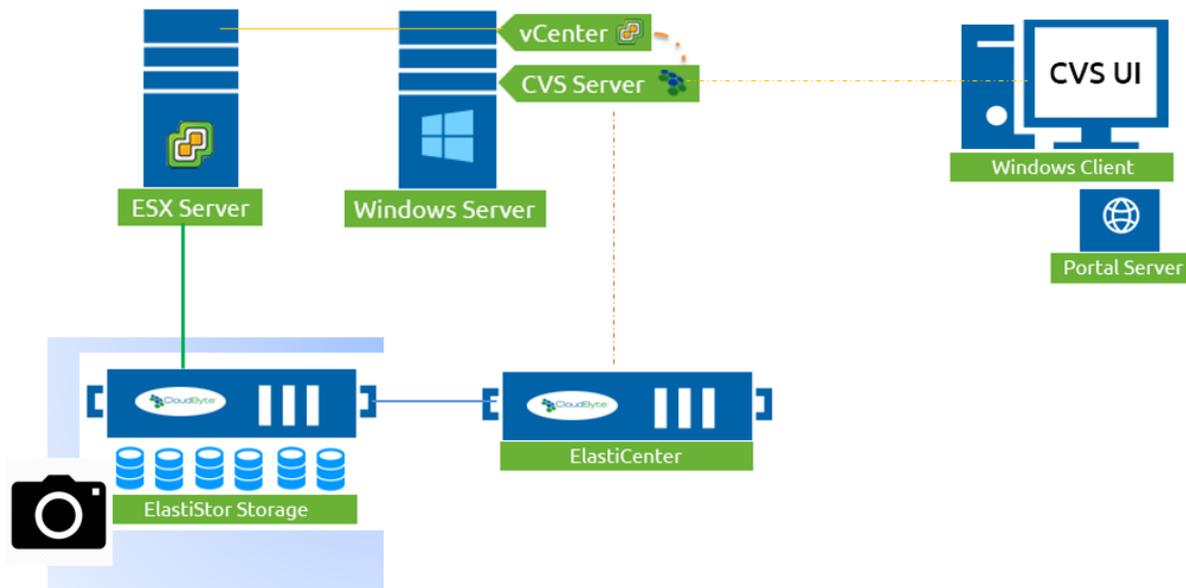
1. Restores storage-level snapshot.
2. Initiates VM-level restoration.

Advantages

Space-efficient snapshots which are based on Copy-on-Write method. As a result you can eliminate the huge data pile created due to VM-level snapshots.

CloudByte Virtualization Service Architecture

The following diagram depicts how CVS is integrated with VMware infrastructure where CloudByte ElastiStor is the Storage environment.



As seen in the architecture diagram,

- CVS is a service that can be installed on the vCenter server.
- The CVS server is connected with ElastiCenter (the management network)
- The ESX Server is connected with the ElastiStor Node (the storage network).
- A VMware administrator uses either the CVS UI or the APIs exposed by the CVS for provisioning tasks
- Snapshots reside in the ElastiStor Volumes.

Using the Virtualization Service

CVS is exposed as a Web service and exposes APIs for the following tasks which you can use for various management tasks. Note that this is not the complete list. For full list of APIs see the section [CVS API Reference](#).

API Categories

Datastore Provisioning

- Create datastore
- Delete datastore

VM Provisioning

- Create Virtual Machine
- List Virtual Machine
- Power on/off Virtual Machine
- Delete Virtual Machine

Data Disk Provisioning

- Adding data disk
- Editing Data disk IOPS

Clone Management

- Create Clone (rapid cloning utility)

Use Case

Rapid cloning utility

CVS enables rapid provisioning of multiple virtual machines using the rapid cloning utility feature. Cloning a virtual machine is faster than copying it. The Cloned virtual machines are independent of the original virtual machines, which implies that the changes made to the clones do not affect the original virtual machine.

With the rapid cloning utility feature,

1. A snapshot of the current state of a virtual machine is created.
2. The created snapshot is then cloned.

Only the metadata of clones and modifications made to the clones are stored in a new location thus reducing the amount of disk space required.

```
Base URL: http://IP address of the CVS server:8000/cvs/  
Command Name = Clone Create  
Command = //IP address of the CVS server:8000/cvs/clone/create  
Method = POST  
Body=  
{ "template": "Demovm", "noofclones": "1", "prefixvmname": "clone", "startcloneno": "1", "correlationid": "1401864888013" }  
Response = { "message": "Clone completed. [status:success]", "errorMsg": null }
```

References

For details on installation and configuration, see the documentation available at the following URL:

<http://www.docs.cloudbyte.com/plug-ins/cloudbyte-virtualization-service-plugin-for-vmware-vcenter/>