

CASE 01770883

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TL;DR

- The workaround provided in the support case, that nova boot from a snapshot image of boot from volume directly, is not acceptable for the customer's use case.
- They still want to do that
 - Create a new cinder volume from a snapshot image of boot from volume
 - Then nova boot from the volume
- The reason is that when nova boot from a snapshot image, the Nimble backend driver creates a '**cloned volume**' in the physical storage, which is they want to avoid.
- They don't want to create cloned volumes as possible because max number of cloned volumes is limited in Nimble storage.
- They found that if they create a new cinder volume from a snapshot image of boot from volume, the Nimble driver creates a normal volume, not a cloned volume.

In depth explanation

- I draw some diagrams in following pages, which describe a workaround provided from the support.
 - Step1: create a boot-from-volume instance
 - Step2: stop the instance, then create a snapshot of it
 - Step3: create a new instance from a zero-sized image which is created in Step2.
- Please pay attention to the physical storage (Nimble) side.
 - Step2: Nimble driver creates a snapshot volume of the original volume.
 - Step3: Nimble driver creates a cloned volume of the original volume.

Step1

Nova

vm1

- Create a VM instance which boots from volume.

Glance

Cirros Image

Cinder

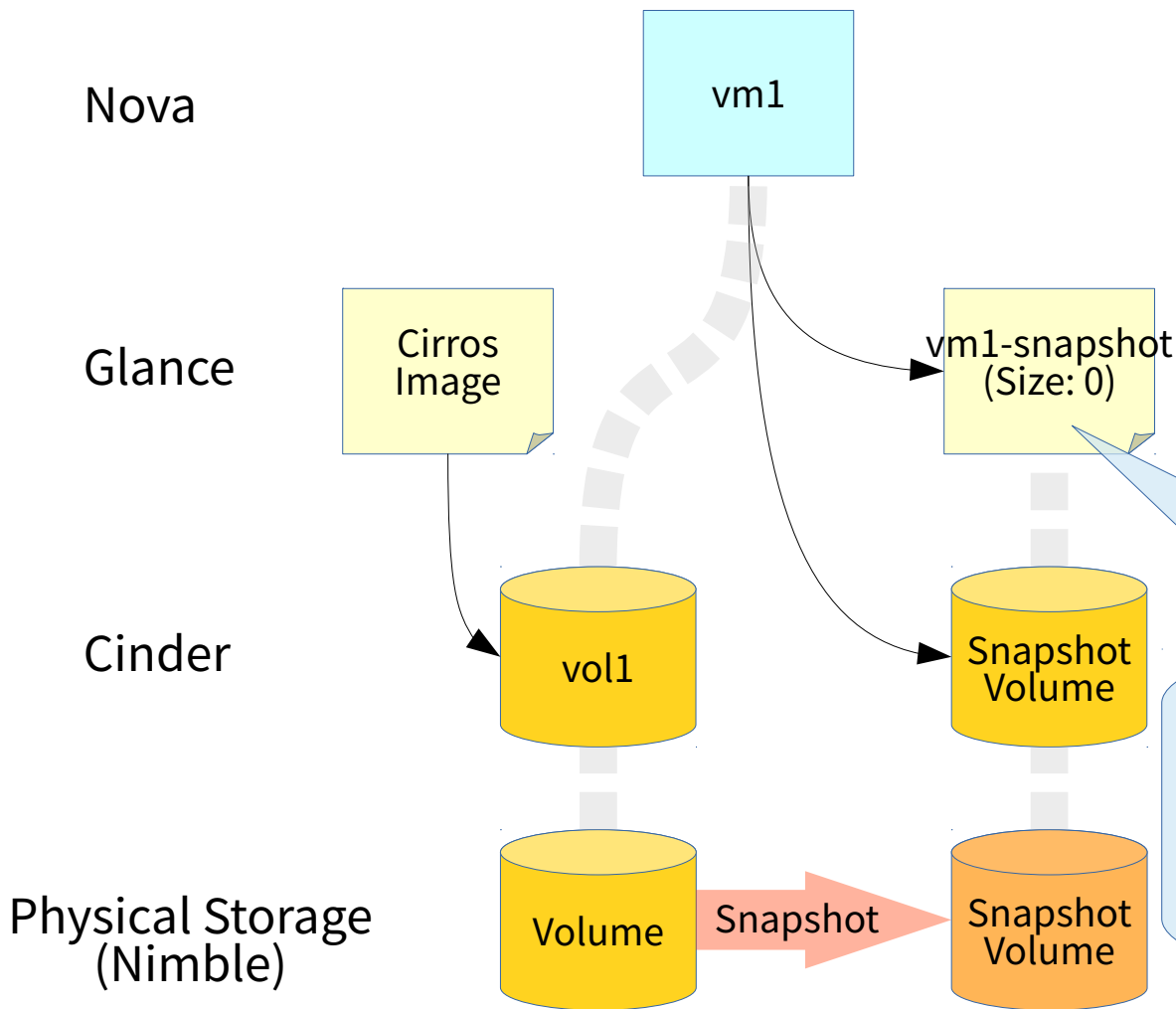
vol1

Physical Storage
(Nimble)

Volume

```
nova boot --poll --flavor m1.tiny
--key-name sshkey --nic net-name=admin_net
--security-groups sg_admin
--block-device id=UUID_OF_CIRROS,
source=image,dest=volume,size=1,bootindex=0
vm1
```

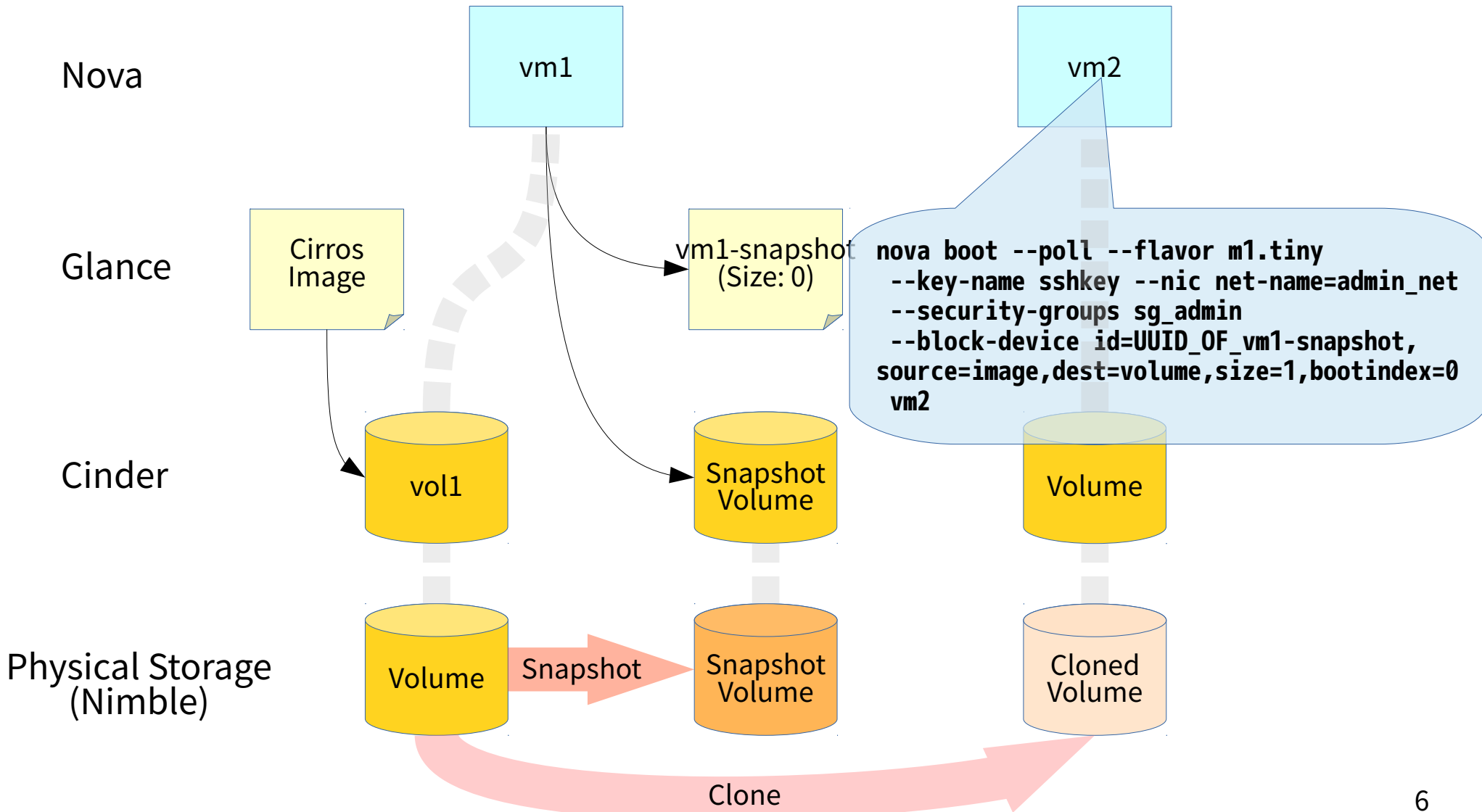
Step 2



- Stop the instance, then create a snapshot of the instance.
- Cinder creates a snapshot of the root volume.
- Glance register zero-sized image for the snapshot volume.
- Nimble driver creates **snapshot** of the original volume in the physical storage subsystem.

```
nova stop vm1  
then  
nova image-create vm1 vm1-snapshot
```

Step 3



Step 3 (cont'd)

- Create a new VM instance from the zero-sized image which refers to the cinder snapshot volume.
- Cinder creates a new volume for the new VM.
- Nimble driver creates a new physical volume as '**cloned** volume'.
- A cloned volume in Nimble is a special form of a volume.
 - Cloned volumes consumes less capacity than normal volumes (maybe).

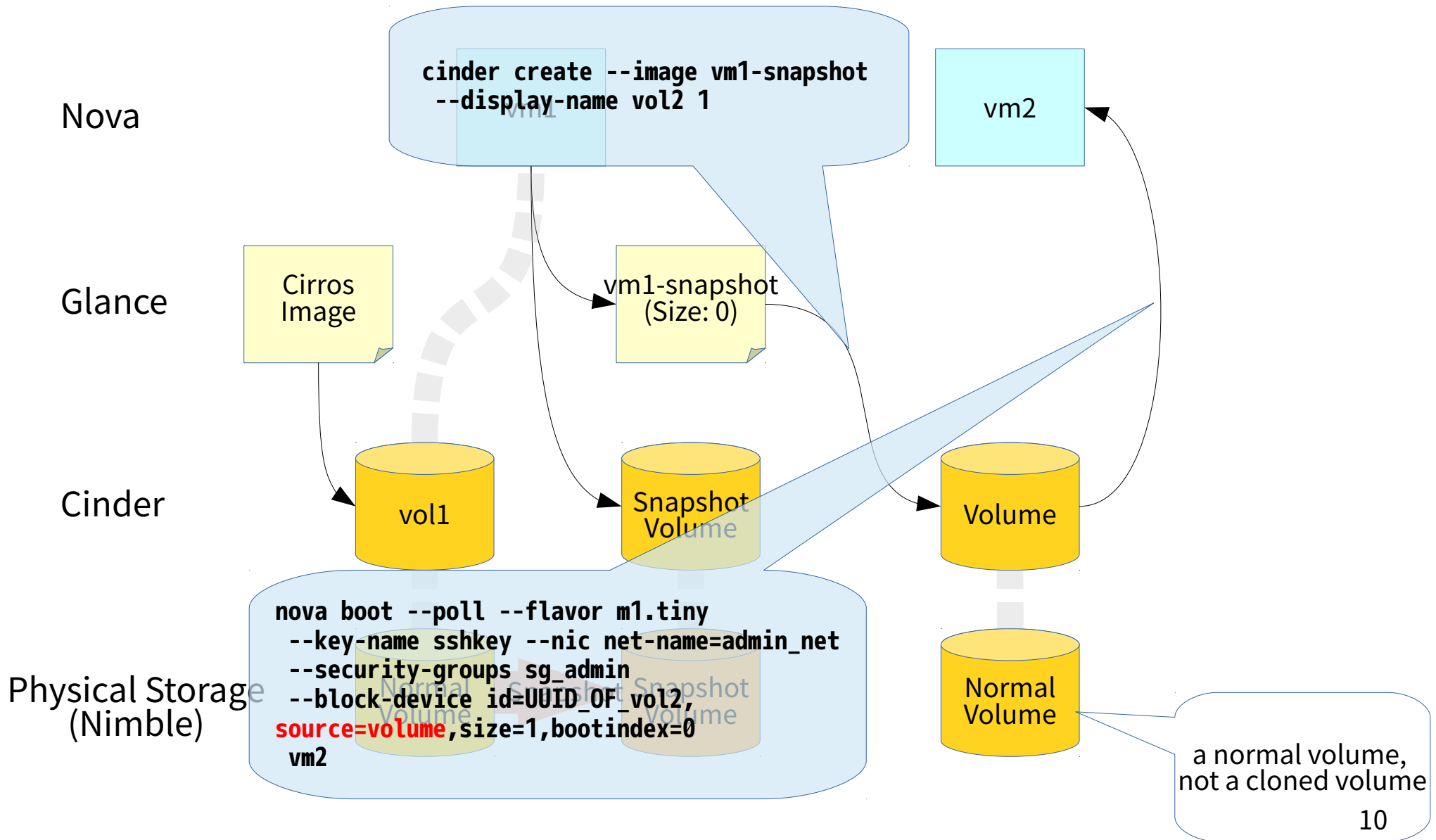
Problem

- The customer don't want to create cloned volumes as possible as they can.
- Problems for cloned volumes in Nimble
 - Nimble only have a limited number of cloned volumes (maybe the max is 1000).
 - A cinder volume can't be deleted when the volume has cloned children volumes.

How to avoid to create cloned volumes

- The customer found a workaround to deal with the Nimble cloned volume.
 - First create a new cinder volume from the snapshot image, then boot a new instance from the new cinder volume
- Create a new instance from the snapshot image (zero-sized) resulted in a cloned volume in Nimble, as stated in the previous page.
- But creating a new cinder volume from the snapshot image resulted, the Nimble backend driver creates a **normal** volume in the physical storage, not a cloned volume.

What the customer wants to do



backup

```
nova boot --poll --flavor m1.tiny
--key-name sshkey --nic net-name=admin_net
--security-groups sg_admin
--block-device id=UUID_OF_CIRROS,
source=image,dest=volume,size=1,bootindex=0
vm1
```

```
nova stop vm1
then
nova image-create vm1 vm1-snapshot
```

```
nova boot --poll --flavor m1.tiny
--key-name sshkey --nic net-name=admin_net
--security-groups sg_admin
--block-device id=UUID_OF_vm1-snapshot,
source=image,dest=volume,size=1,bootindex=0
vm2
```

Nova

Glance

Cinder

Physical Storage (Nimble)

