

- [Home \(http://www.yellow-bricks.com/\)](http://www.yellow-bricks.com/)
- [About \(http://www.yellow-bricks.com/about/\)](http://www.yellow-bricks.com/about/)
- [Links \(http://www.yellow-bricks.com/links/\)](http://www.yellow-bricks.com/links/)
- [HA Deepdive \(http://www.yellow-bricks.com/vmware-high-availability-deepdiv/\)](http://www.yellow-bricks.com/vmware-high-availability-deepdiv/)
- [SRM FAQ \(http://www.yellow-bricks.com/srm-faq/\)](http://www.yellow-bricks.com/srm-faq/)
- [DRS Deepdive \(http://www.yellow-bricks.com/drs-deepdive/\)](http://www.yellow-bricks.com/drs-deepdive/)
- [ESXTOP \(http://www.yellow-bricks.com/esxstop/\)](http://www.yellow-bricks.com/esxstop/)

## Storage Masking?

February 5th, 2010 | [13 Comments \(http://www.yellow-bricks.com/2010/02/05/storage-masking/#comments\)](http://www.yellow-bricks.com/2010/02/05/storage-masking/#comments) |

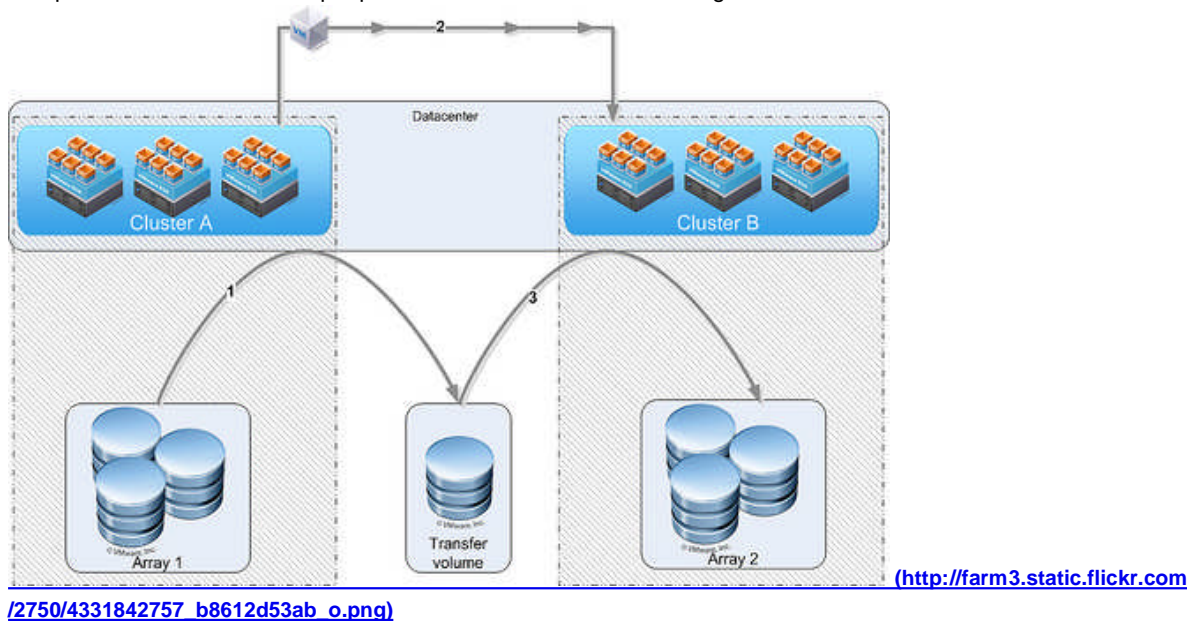
I received a bunch of questions around storage masking over the last couple of weeks. One of them was around VMware's best practice to mask LUNs on a per cluster basis. The best practice has been around for years and basically is there to reduce conflicts. More hosts accessing the same LUNs means more overhead, just to give you an example every 5 minutes a rescan of both HBAs takes place automatically to check for dead storage paths. You can imagine that there's a difference between 32+ hosts accessing your storage or limiting it to for instance 16 hosts.

The obvious next question is, won't I lose a lot of flexibility? Well in a way you do as a simple VMotion to another cluster will not work anymore. But of course there's always a way to move a host to a different cluster. In my design I usually propose a so called "Transfer Volume". This Volume(NFS or VMFS) can be used to transfer VMs to a different cluster. Yes there's a slight operational overhead here, but is also reduces overhead in terms of traffic to a LUN and decreases the chance of scsi reservation conflicts etc.

Here's the process:

1. Storage VMotion the VM from LUN on Array 1 to Transfer LUN
2. VMotion VM from Cluster A to Cluster B
3. Storage VMotion the VM from Transfer LUN to LUN on Array 2

Of course these don't necessarily need to be two separate arrays, it could just as easily be a single array with a group of LUNs masked to a particular cluster. For the people who have a hard time visualizing it:



Posted in [PASS Syndication \(http://www.yellow-bricks.com/category/pass-syndication/\)](http://www.yellow-bricks.com/category/pass-syndication/), [Server \(http://www.yellow-bricks.com/category/virtualization/\)](http://www.yellow-bricks.com/category/virtualization/) | Tags: [design \(http://www.yellow-bricks.com/tag/design/\)](http://www.yellow-bricks.com/tag/design/), [ESX \(http://www.yellow-bricks.com/tag/esx/\)](http://www.yellow-bricks.com/tag/esx/), [Storage \(http://www.yellow-bricks.com/tag/storage/\)](http://www.yellow-bricks.com/tag/storage/), [storage vmotion \(http://www.yellow-bricks.com/tag/storage-vmotion/\)](http://www.yellow-bricks.com/tag/storage-vmotion/)  
 « [Win an Apple iPad for you and your friends! \(http://www.yellow-bricks.com/2010/02/03/win-an-apple-ipad-for-you-and-your-friends/\)](http://www.yellow-bricks.com/2010/02/03/win-an-apple-ipad-for-you-and-your-friends/)

[vSphere Security Hardening Guide script by @lamw \(http://www.yellow-bricks.com/2010/02/08/vsphere-security-hardening-guide-script-by-lamw/\)](#) »

You can skip to the end and leave a response. Pinging is currently not allowed.

### 13 Responses to “Storage Masking?”



1. [Jason Boche \(http://boche.net/blog/\)](#) says:

[Friday, February 5, 2010 at 15:18 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6249\)](#)

We call them swing volumes and they come in handy.



2. [PiroNet \(http://deinoscloud.wordpress.com\)](#) says:

[Friday, February 5, 2010 at 16:31 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6251\)](#)

I use to setup such thing to store templates and various tools and scripts. We call it a Step Stone VMDK 😊



3. [Ed Marshall](#) says:

[Friday, February 5, 2010 at 16:31 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6252\)](#)

Very interesting.

Presumably there is no reason why this volume couldn't itself be a VMFS stored on a available SAN volume?



4. [Duncan Epping \(http://www.yellow-bricks.com\)](#) says:

[Friday, February 5, 2010 at 16:40 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6253\)](#)

VMFS or NFS, both is fine. It should be either of those otherwise Storage VMotion will not work.



5. [Duncan \(http://www.yellow-bricks.com\)](#) says:

[Friday, February 5, 2010 at 17:13 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6256\)](#)

and of course it can be on either of the two arrays.



6. [Rick Vanover \(http://rickvanover.com\)](#) says:

[Friday, February 5, 2010 at 20:16 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6258\)](#)

I call it LUN exchange, but I like your Transfer Volume term.

Big clusters for sure this is an overhead saver. For smaller environments, it becomes an better design issue.

VMFS's nature that allows connectivity between management 'zones' or dimensions is really underrated. There is no transaction coordinator (except that on each host) and it can even include free ESXi.



7. [Doug](#) says:

[Friday, February 5, 2010 at 20:38 \(http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1\)](#)

[/#comment-6259\)](#)

I, too, use this sort of utility datastore and find the flexibility it provides most useful. However, as with anything reasonably powerful, there is a dark side. I've encountered an environment that had an entirely separate ESX cluster for PCI compliance. It was firewalled off and secured from a network perspective and login. Unfortunately, for provisioning simplicity, they had presented their templates datastore from the production environment to the PCI environment.

No point in locking the door if the windows are open... 😊



8. **Hany Michael** (<http://www.hypervizor.com>) says:

**Friday, February 5, 2010 at 20:58** (<http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6260>)

Very nice trick! I remember I saw something similar in a VMworld session but it was much complicated than that. The presenters used to call it "Gateways" if I recall.

Great illustration by the way Duncan, loving your Visio work!



9. **Scott Sauer** says:

**Saturday, February 6, 2010 at 00:50** (<http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6262>)

I like this concept and will be embracing it, thanks for writing this up. What do you guys do about ISO's and templates? Do you separate these out per cluster? It seems like a waste to maintain multiple copies of this data type.



10. **Duncan** (<http://www.yellow-bricks.com>) says:

**Saturday, February 6, 2010 at 06:25** (<http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6266>)

It's not only a waste of time but also means you need to maintain multiple templates! Only if the clusters are geo dispersed I would create multiple templates, but just to keep the traffic local. Otherwise 1 would be fine.



11. **dmVI** says:

**Tuesday, February 9, 2010 at 00:25** (<http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6596>)

If the Transfer LUN is zoned to ALL of the ESX Hosts on both arrays (or group of LUNs as it were) and each array/group of LUNs has 20-30 ESX Hosts – that would result in the transfer LUN being "seen" by 40-60 ESX Hosts total.

Would this be a problem? Would a large number of ESX Hosts seeing the Transfer LUN be fine as long as all (or a large number of those ESX Hosts above 32 for instance) aren't actively running VM Guests on it?



12. **Duncan Epping** (<http://www.yellow-bricks.com>) says:

**Tuesday, February 9, 2010 at 08:11** (<http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6601>)

Correct. This normally shouldn't be an issue at all. None of the hosts has any VM's running on it for an extended period of time. And any slight performance degradation is acceptable for these types of LUNs.



13. **Aran** says:

**Tuesday, February 9, 2010 at 17:50** (<http://www.yellow-bricks.com/2010/02/05/storage-masking/comment-page-1/#comment-6605>)

So you leave the Transfer LUN masked to all ESX clusters and only have a VM hosted on that LUN if it is in the process of being transferred from one cluster to another?

Having one LUN masked to separate clusters does not introduce any arbitration issues?

## Leave a Reply

<input type="text"/>	Name (required)
<input type="text"/>	Mail (will not be published) (required)
<input type="text"/>	Website

Submit Comment



(<http://www.yellow-bricks.com/feed/>)



(<http://www.twitter.com/DuncanYB>)

• Search

SEARCH



(<http://www.addthis.com/bookmark.php?v=250&winname=addthis&pub=xa-4a65e1d93cd75e94&source=tbx-250&lng=en-US&s=delicious&url=http%3A%2F%2Fwww.yellow-bricks.com%2F2010%2F02%2F05%2Fstorage-masking%2F&title=Storage%20Masking%3F%20%2C%2BB%20Yellow%20Bricks&ate=AT-xa-4a65e1d93cd75e94/-/4c5c22cd9f0df64e>)



/1&CXNID=2000001.5215456080540439074NXC&pre=http%3A%2F%2Fwww.punchingclouds.com%2F%3Ftag%3Dpsa&tt=0)(<http://www.addthis.com/bookmark.php?v=250&winname=addthis&pub=xa-4a65e1d93cd75e94&source=tbx-250&lng=en-US&s=facebook&url=http%3A%2F%2Fwww.yellow-bricks.com%2F2010%2F02%2F05%2Fstorage-masking%2F&title=Storage%20Masking%3F%20%2C%2BB%20Yellow%20Bricks&ate=AT-xa-4a65e1d93cd75e94/-/4c5c22cd9f0df64e>)



/2&CXNID=2000001.5215456080540439074NXC&pre=http%3A%2F%2Fwww.punchingclouds.com%2F%3Ftag%3Dpsa&tt=0)(<http://www.addthis.com/bookmark.php?v=250&winname=addthis&pub=xa-4a65e1d93cd75e94&source=tbx-250&lng=en-US&s=digg&url=http%3A%2F%2Fwww.yellow-bricks.com%2F2010%2F02%2F05%2Fstorage-masking%2F&title=Storage%20Masking%3F%20%2C%2BB%20Yellow%20Bricks&ate=AT-xa-4a65e1d93cd75e94/-/4c5c22cd9f0df64e/3&CXNID=2000001.5215456080540439074NXC&>

pre=http%3A%2F%2Fwww.punchingclouds.com%2F%3Ftag%3Dpsa&tt=0)(<http://www.addthis.com/bookmark.php?v=250&winname=addthis&pub=xa-4a65e1d93cd75e94&source=tbx-250&lng=en-US&s=stumbleupon&url=http%3A%2F%2Fwww.yellow-bricks.com%2F2010%2F02%2F05%2Fstorage-masking%2F&title=Storage%20Masking%3F%20%2C%2BB%20Yellow%20Bricks&ate=AT-xa-4a65e1d93cd75e94/-/4c5c22cd9f0df64e/4&CXNID=2000001.5215456080540439074NXC&pre=http%3A%2F%2Fwww.punchingclouds.com%2F%3Ftag%3Dpsa&tt=0>)

%2Fwww.punchingclouds.com%2F%3Ftag%3Dpsa&tt=0)



## • About Yellow-Bricks.com

Welcome to Yellow-Bricks.com a blog about virtualization, with a strong focus on VMware, HA and vCloud solutions.

Some facts:

999 Blog Articles

1951 Twitter Followers

5503 RSS Subscribers

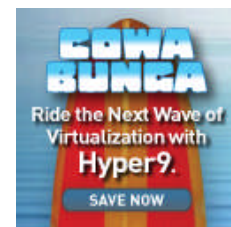
## • Sponsors



(<http://www.vizioncore.com/free/vFoglight-quick-view/index.php?source=QV125x125YellowBricksJune2>)



(<http://www.trainsignal.com/VMware-vSphere-Training-Package-P93.aspx>)



(<http://www.veeam.com/go/7-reasons-to-choose-veeam-for-vmware-backup?ad=yellowbricks>)

([http://www.hyper9.com/?source=yellow125x125\\_cowabunga](http://www.hyper9.com/?source=yellow125x125_cowabunga))

## • Advertisements

## • Recommended



**vSphere 4.0 Quick Start Guide**

Shortcuts down the path of Virtualization

**Buy it now just \$15.99.** (<http://www.amazon.com/gp/product/1439263450?ie=UTF8&tag=yellowbricks-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1439263450>)

## • Advertisements

## • Recent Comments

- Greg on [HA Cli](http://www.yellow-bricks.com/2010/08/03/ha-cli/comment-page-1/#comment-9498) (<http://www.yellow-bricks.com/2010/08/03/ha-cli/comment-page-1/#comment-9498>)
- Duncan Epping (<http://www.yellow-bricks.com>) on [Changing your dvPortgroup settings? \(need your input!\)](http://www.yellow-bricks.com/2010/08/02/changing-your-dvportgroup-settings-need-your-input/comment-page-1/#comment-9489) (<http://www.yellow-bricks.com/2010/08/02/changing-your-dvportgroup-settings-need-your-input/comment-page-1/#comment-9489>)
- Duncan Epping (<http://www.yellow-bricks.com>) on [VMworld San Francisco Run 2010](http://www.yellow-bricks.com) (<http://www.yellow-bricks.com>)

[/2010/07/31/vmworld-san-francisco-run-2010/comment-page-1/#comment-9488](http://www.yellow-bricks.com/2010/07/31/vmworld-san-francisco-run-2010/comment-page-1/#comment-9488))

- Richard Boswell on [Changing your dvPortgroup settings? \(need your input!\) \(http://www.yellow-bricks.com/2010/08/02/changing-your-dvportgroup-settings-need-your-input/comment-page-1/#comment-9486\)](http://www.yellow-bricks.com/2010/08/02/changing-your-dvportgroup-settings-need-your-input/comment-page-1/#comment-9486)
- Keith Norbie (<http://www.nexusmn.com>) on [VMworld San Francisco Run 2010 \(http://www.yellow-bricks.com/2010/07/31/vmworld-san-francisco-run-2010/comment-page-1/#comment-9483\)](http://www.yellow-bricks.com/2010/07/31/vmworld-san-francisco-run-2010/comment-page-1/#comment-9483)

## • Tags

[2.5 \(http://www.yellow-bricks.com/tag/25/\)](http://www.yellow-bricks.com/tag/25/)
[3.0.x \(http://www.yellow-bricks.com/tag/30x/\)](http://www.yellow-bricks.com/tag/30x/)
[3.5 \(http://www.yellow-bricks.com/tag/35/\)](http://www.yellow-bricks.com/tag/35/)
[BC-DR \(http://www.yellow-bricks.com/tag/bcdr/\)](http://www.yellow-bricks.com/tag/bcdr/)
[Blogging \(http://www.yellow-bricks.com/tag/blogging/\)](http://www.yellow-bricks.com/tag/blogging/)
[Book \(http://www.yellow-bricks.com/tag/book/\)](http://www.yellow-bricks.com/tag/book/)
[Bugs \(http://www.yellow-bricks.com/tag/bugs/\)](http://www.yellow-bricks.com/tag/bugs/)
[cloud \(http://www.yellow-bricks.com/tag/cloud/\)](http://www.yellow-bricks.com/tag/cloud/)
[design \(http://www.yellow-bricks.com/tag/design/\)](http://www.yellow-bricks.com/tag/design/)
[drs \(http://www.yellow-bricks.com/tag/drs/\)](http://www.yellow-bricks.com/tag/drs/)
[ESX \(http://www.yellow-bricks.com/tag/esx/\)](http://www.yellow-bricks.com/tag/esx/)
[esxi \(http://www.yellow-bricks.com/tag/esxi/\)](http://www.yellow-bricks.com/tag/esxi/)
[ha \(http://www.yellow-bricks.com/tag/ha/\)](http://www.yellow-bricks.com/tag/ha/)
[Howto \(http://www.yellow-bricks.com/tag/howto/\)](http://www.yellow-bricks.com/tag/howto/)
[kb \(http://www.yellow-bricks.com/tag/kb/\)](http://www.yellow-bricks.com/tag/kb/)
[linux \(http://www.yellow-bricks.com/tag/linux/\)](http://www.yellow-bricks.com/tag/linux/)
[networking \(http://www.yellow-bricks.com/tag/networking/\)](http://www.yellow-bricks.com/tag/networking/)
[News \(http://www.yellow-bricks.com/tag/news/\)](http://www.yellow-bricks.com/tag/news/)
[patches \(http://www.yellow-bricks.com/tag/patches/\)](http://www.yellow-bricks.com/tag/patches/)
[performance \(http://www.yellow-bricks.com/tag/performance/\)](http://www.yellow-bricks.com/tag/performance/)
[powershell \(http://www.yellow-bricks.com/tag/powershell/\)](http://www.yellow-bricks.com/tag/powershell/)
[Scripting \(http://www.yellow-bricks.com/tag/scripting/\)](http://www.yellow-bricks.com/tag/scripting/)
[scripts \(http://www.yellow-bricks.com/tag/scripts/\)](http://www.yellow-bricks.com/tag/scripts/)
[security \(http://www.yellow-bricks.com/tag/security/\)](http://www.yellow-bricks.com/tag/security/)
[service console \(http://www.yellow-bricks.com/tag/service-console/\)](http://www.yellow-bricks.com/tag/service-console/)
[software \(http://www.yellow-bricks.com/tag/software/\)](http://www.yellow-bricks.com/tag/software/)
[srm \(http://www.yellow-bricks.com/tag/srm/\)](http://www.yellow-bricks.com/tag/srm/)
[Storage \(http://www.yellow-bricks.com/tag/storage/\)](http://www.yellow-bricks.com/tag/storage/)
[Tools \(http://www.yellow-bricks.com/tag/tools/\)](http://www.yellow-bricks.com/tag/tools/)
[training \(http://www.yellow-bricks.com/tag/training/\)](http://www.yellow-bricks.com/tag/training/)
[u2 \(http://www.yellow-bricks.com/tag/u2/\)](http://www.yellow-bricks.com/tag/u2/)
[update \(http://www.yellow-bricks.com/tag/update/\)](http://www.yellow-bricks.com/tag/update/)
[upgrade \(http://www.yellow-bricks.com/tag/upgrade/\)](http://www.yellow-bricks.com/tag/upgrade/)
[VCB \(http://www.yellow-bricks.com/tag/vcb/\)](http://www.yellow-bricks.com/tag/vcb/)
[vcdx \(http://www.yellow-bricks.com/tag/vcdx/\)](http://www.yellow-bricks.com/tag/vcdx/)
[vcenter \(http://www.yellow-bricks.com/tag/vcenter/\)](http://www.yellow-bricks.com/tag/vcenter/)
[vdi \(http://www.yellow-bricks.com/tag/vdi/\)](http://www.yellow-bricks.com/tag/vdi/)
[VirtualCenter \(http://www.yellow-bricks.com/tag/virtualcenter/\)](http://www.yellow-bricks.com/tag/virtualcenter/)
[vmtn \(http://www.yellow-bricks.com/tag/vmtn/\)](http://www.yellow-bricks.com/tag/vmtn/)
[VMware \(http://www.yellow-bricks.com/tag/vmware/\)](http://www.yellow-bricks.com/tag/vmware/)
[vmworld \(http://www.yellow-bricks.com/tag/vmworld/\)](http://www.yellow-bricks.com/tag/vmworld/)
[vSphere \(http://www.yellow-bricks.com/tag/vsphere/\)](http://www.yellow-bricks.com/tag/vsphere/)
[vstorage \(http://www.yellow-bricks.com/tag/vstorage/\)](http://www.yellow-bricks.com/tag/vstorage/)
[whitepaper \(http://www.yellow-bricks.com/tag/whitepaper/\)](http://www.yellow-bricks.com/tag/whitepaper/)
[Workstation \(http://www.yellow-bricks.com/tag/workstation/\)](http://www.yellow-bricks.com/tag/workstation/)

## • Disclaimer

The views expressed anywhere on this site are strictly mine and not the opinions and views of VMware.

Copyright © [Yellow Bricks \(http://www.yellow-bricks.com\)](http://www.yellow-bricks.com) - Building blocks for virtualization...

Powered by [WordPress \(http://wordpress.org/\)](http://wordpress.org/) | [Modern Style \(http://flexithemes.com/themes/modern-style/\)](http://flexithemes.com/themes/modern-style/) theme by [FlexiThemes \(http://flexithemes.com/\)](http://flexithemes.com/)