

# P2V

## Coldclone via iSCSI

### Why iSCSI ?

Another way to mount remote virtual disks ? ... so what ....

Well - mounting a disk via iSCSI has one major advantage compared to other procedures like using mount-tools ...

A disk mounted via iSCSI appears in diskmanagement - that means it can be handled by partitioning tools.

This is not possible when we mount a virtual disk with the Virtual Disk Development Kit for example.

### P2V and iSCSI

Consider you need to P2V a physical system into a virtual machine on a ESX farm.

The physical system is a large fileserver and you want to clone the data disk with the fileshares directly

into a RDM or LUN on the SAN of the farm. This is a killer scenario for Coldclone via iSCSI running MOA.

In other scenarios doing coldclones via iSCSI may not come as natural ... but it is worth to consider it.

### iSCSI and MOA

All recent versions of MOA support installation on the fly of Starwind 4 and Starport.

MOA 64 also has builtin iSCSI support. You just have to configure the service in Debian.

For MOA 2.4 have a look at the LODR packages for Starwind and Starport which simplify the setup.

MOA can be used as the iSCSI-Target and as the iSCSI-Initiator.

In the following MOA-usage example both roles are used so it is a nice example to practice iSCSI with your MOA-system.

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### Example Environment

With my limited hardware resources I used the following scenario: one physical host is used as P2V-source.

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It is a multiboot machine with Windows 2003 and 2008 R2 and one data-partition.

On a second physical host VMware Workstation or ESX is running.

For the further discussion it makes absolutely no difference whether we use Workstation or ESXi or HyperV or whatever ...

As a target for this coldclone via iSCSI we create a new virtual machine with a new virtual disk.

In the following example we will boot both the source and the target system onto MOA

## The network environment

We need direct access between source and target - in this case I assigned

10.0.0.5 for the MOA system that is booted on the source

10.0.0.7 for the MOA system that is booted on the target

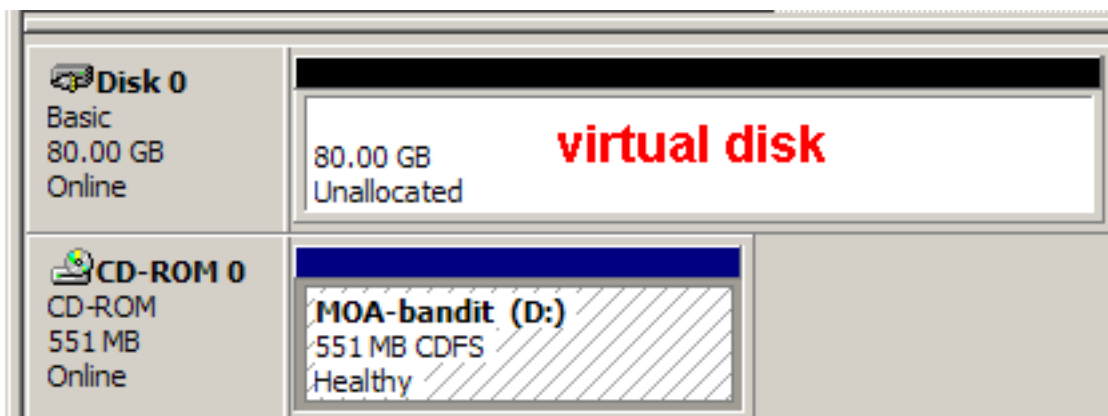
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## Diskmanagement of the target

The target system is a virtual machine.

It has one brand new 80 Gb unpartitioned virtual disk.

It was booted into a MOA 2.4 LiveCD - see diskmanagement:



## Diskmanagement of the source

The source machine is booted into a typical MOA 3 USB-disk.

After boot the USB disk appears as disk 0 in diskmanagement.

The original system disk is disk 1.

The source disk carries a multiboot setup.

First partition: 2003 system and boot-files

Sec. Partition: a 2008 R2 system

Third Partition : just data

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<b>Disk 0</b> Basic 74.53 GB Online	<b>BOOT (C:)</b> 1.95 GB FAT Healthy (Active)	<b>3.52 GB</b> Healthy (Un)	<b>3.91 GB</b> Healthy (Un)	<b>ESX3:</b> 306 M Health	<b>ESX4I</b> 306 MB Health	<b>3.91 GB</b> Healthy (Un)	<b>home (R:)</b> 60.65 GB NTFS Healthy
<b>Disk 1</b> Basic 465.76 GB Online	<b>New Volume (D:)</b> 29.30 GB NTFS Healthy (Active) <b>2003</b>		<b>New Volume (H:)</b> 48.83 GB NTFS Healthy <b>2008 R2</b>		<b>New Volume (I:)</b> 387.63 GB NTFS Healthy <b>data</b>		
<b>CD-ROM 0</b> DVD (J:) No Media							

## iSCSI-setup on the target

In the Starwind GUI connect to localhost



once connected add a new iSCSI-target - we want the Disk Bridge Device

**Please select a device type.**

Select the type of device you wish to create:


- Image File device
- RAM drive device
- Virtual DVD
- Disk Bridge device
- IBVolume device (snapshots)
- Mirror (RAID - 1) device
- SPTI device
- Virtual tape device

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In the next step we assign the virtual disk. Note the VMware in the vendor name.

## Please specify Disk Bridge device parameter

Select the hard disk you want to make accessible:

Device	Description
 \\.\PhysicalDrive0	VMware, VMware Virtual S 1.0

Asynchronous mode

Read-only mode

Allow multiple concurrent iSCSI connections (clustering)

Assign a name to the iSCSI-target

## Please specify common device parameters.

Choose a target name (optional):

## Completing the Add Device Wizard

The following device will be added:

DiskBridge0

You specified the following settings:

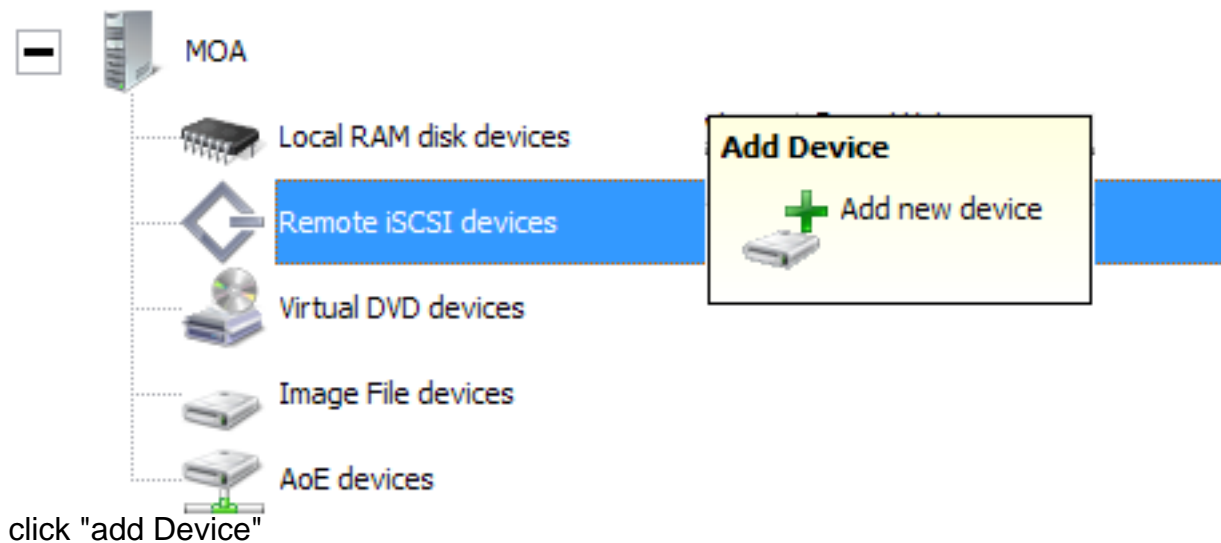
Network Name: colddclone
Disk bridge: \\.\PhysicalDrive0
Asynchronous: Yes
Read-only: No
Clustering: No

After the wizard finished the log-screen should look like this.  
On the target all work is done for now - we can leave it alone.

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## iSCSI-setup on the source

In the Starport GUI we need to mount a "remote iSCSI-device"



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Device type:

- Local RAM disk device
- Remote iSCSI device
- Virtual DVD device
- Remote AoE (ATA-over-Ethernet) device
- Image File device

enter the IP of the MOA system running inside the VM

Remote iSCSI device IP Address or Machine Name:

Remote iSCSI device Port number:

Maximum allowed connections:

Configure IP Security

that's the IP of the MOA running on the ESXi

enter the target name ...

Please select a target you wish to connect to:

Additional iSCSI parameter(s):

Use CHAP authentication

Automount this device

and finish the wizard.

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## Completing the Add Device Wizard

The following virtual device was installed:



1, VMware, VMware Virtual S 1.0

Device installation completed successfully.

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## The Clone or Copy process ...

Now that the target is mounted we need to partition it. Open MOA diskmanagement. A new blank disk has appeared in the list. This is the one connected via iSCSI. This disk is actually a vmdk file on the ESX or Workstation ...

<b>Disk 0</b> Basic 74.53 GB Online	<b>BOOT (C)</b> 1.95 GB FAT Healthy (Active)	3.52 GB Healthy (Ur)	3.91 GB Healthy (Ur)	<b>ESX3</b> 306 M Health	<b>ESX4I</b> 306 ME Health	3.91 GB Healthy (Ur)	<b>home (R:)</b> 60.65 GB NTFS Healthy
<b>Disk 1</b> Basic 465.76 GB Online	<b>New Volume (D:)</b> 29.30 GB NTFS Healthy (Active) <b>2003</b>	<b>New Volume (H:)</b> 48.83 GB NTFS Healthy <b>2008 R2</b>		<b>New Volume (I:)</b> 387.63 GB NTFS Healthy <b>data</b>			
<b>Disk 2</b> Basic 80.00 GB Online	80.00 GB Unallocated						

With the diskmanagement tools I created a small partition - which will later be used to boot the 2008 system - and a larger one - which will be used for the 2008 system. Both are created as primary partitions.

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<b>Disk 0</b> Basic 74.53 GB Online	<b>BOOT (C)</b> 1.95 GB FAT Healthy (Active)	3.52 GB Healthy (Ur)	3.91 GB Healthy (Ur)	<b>ESX3</b> 306 MB Healthy	<b>ESX4I</b> 306 MB Healthy	3.91 GB Healthy (Ur)	<b>home (R:)</b> 60.65 GB NTFS Healthy
<b>Disk 1</b> Basic 465.76 GB Online	<b>New Volume (D:)</b> 29.30 GB NTFS Healthy (Active)		<b>New Volume (H:)</b> 48.83 GB NTFS Healthy		<b>New Volume (I:)</b> 387.63 GB NTFS Healthy		
<b>Disk 2</b> Basic 80.00 GB Online	<b>New Volume (G:)</b> 106 MB NTFS Healthy	<b>New Volume (K:)</b> 79.89 GB NTFS Healthy					

Note the red arrows ... they show the two different copy/clone actions to be done. In this example the original Windows 2003 boot-option is no longer required. So we can just create a small boot-partition ... The Windows 2008 R2 system which lives in the second partition of the source disk will be cloned into the second partition of the virtual disk.

Now that we have one system which has both target and source disks mounted we can use all types of tools to do the actual copies.

Good old ghost32 is just one example ... robocopy may be the first choice in other scenarios ...

The screenshot shows a progress indicator at the top with a blue bar at 2% completion. Below it is a statistics table:

Percent complete	2
Speed (MB/min)	216
MB copied	198
MB remaining	7764
Time elapsed	0:55
Time remaining	35:55

Below the statistics is a details section:

Connection type	Local
Source Partition	Type:7 [NTFS], 50003 MB, 11418 MB used, New Volume from Local drive [2], 476940 MB
Target Partition	Type:7 [NTFS], 81809 MB from Local drive [3], 81920 MB
Current file	3357 Microsoft.Storage.Vds.ni.dll

A hand-drawn smiley face is visible on the right side of the screenshot.

to be continued ... work in progress ...



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Author: Ulli Hankeln

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