## Convert XenServer 5.5 Linux VM (CentOS 5) with xentools installed to VMWare ESX.

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Since I didn't find any steps to convert a XenServer Linux vm to ESX I decided to write my own to help other people migrate from XS to VMWare ESX.

**Prerequisites:** You need a CentOS rescue cd in your VMWare datastore. Please do this on a testing machine first to verify that the following steps will work for your VM. You need to know how to change the bios settings in the vm to make it boot from a cd-rom Work with a CentOS rescue CD Read thoroughly each step. If something doesn't work out email me.

Put VMWare Converter standalone .tar.gz file on the server you want to migrate. Install vmware converter on a local machine which you will use to convert your VM. I installed it on my laptop and did a local installation.

install vmware converter on source machine:

# tar zxvf VMware-converter-4.0.1-161434.tar.gz

# vmware-converter-distrib/vmware-install.pl

Read the license agreement, select yes for all the yes/no questions and accept the default paths and ports.

The following steps are done from my laptop:

Open VMWare Converter client and select Convert Machine

Insert the IP and password credentials from the source server like below and select Linux for OS family:

and the second		
ource: none	Destina	ation: none
elect source type: Powered Convert a — Specify the powered-on a This local machine (a) A remote machine IP address or name User name: Password: OS Family: View source details	on machine	Powered-on machine           Converts a running machine to a           Wiware virtual machine. The machine           can be your local machine or a remote machine on the network. When converting a remote machine, provide the IP address or name, administrato or root credentais, and operating system on which to create the machine.           Supported operating systems are:           • Windows 2000, 2003, XP, Vista, 2008           • Red Hat Enterprise Linux 2.1, 3.0, 4.0, 5.0           • Red Hat Enterprise Server 8, 9, 10           • Ubuntu Linux 5.x, 6.x, 7.x, 8.x           Linux sources should allow root login through SSH.

Enter your ESX ip and password credentials:

Destination Type Host/Resource				
Destination: none				
Destination type: VMware Infrastructure virtual machine Creates a new virtual machine for use on a VMware Infrastructure product. - VMware Infrastructure server details Server: User name: Password:	VHware Infrastructure destination           Creates a virtual machine that a VMware Infrastructure product manages.           Supported VMware Infrastructure products:           • ESX Server 3.0, 3.5 and 4.0           • ESX 3.5 and 4.0 embedded           • VMware vCenter Server 2.0, 2.5 and 4.0			

Select your datastore and click next:

Conversion	The sea	
Specify Source     Specify Destination     Type     Host/Resource	on 3 View/Edit Options Acady to Com	plete
Source: 🗐 📶	Destination: 🌚 🖮	
Inventory for:	Virtual machine name     Total source disks size: 22 GB     Datastore     NFS Datastore     Capacity: 750 GB     Free: 731 GB     Type: NFS     Virtual machine version     Version 7 ▼	VHware Infrastructure destination Select the destination host or resource pool in a host to place the destination virtual machine. Clusters and cluster- level resource pools are not supported Specify a name and select a datastore in which to place the destination virtual machine. It is advisable to choose a datastore that is large enough to accommodate all virtual machine files. Virtual machine versions: • Version 4: Recommended when sharing storage or virtual machines with ESX Server versions up to 3.5. • Version 7: Choose this version if you need the latest virtual machine features and do not need to migrate to ESX 3.x.
Help	<	3ack Next > Cancel

Click Edit on Helper VM Network and give it a static ip.

Options			
urce:		Destination: 🚱 📻	Estimated time: 4 hour(s) 18 minute
<ul> <li>Data to copy</li> <li>Copy type: Volume-based</li> <li> <li>/boot&gt;: 102 MB</li> <li>&gt;: 21.4 GB</li> <li><swap>: 544 MB</swap></li> <li>Devices</li> <li>Processors: 1</li> <li>Disk controller: Preserve source</li> <li>Memory: 384 MB</li> <li>Networks</li> <li>NIC1: VM Network</li> <li>Advanced options</li> <li>Synchronization: N/A</li> <li>Power on destination: No</li> <li>Power off source: No</li> <li>Install VMware Tools: N/A</li> <li>Customize Guest OS: N/A</li> <li>Reconfigure: Yes</li> </li></ul>	Edit Edit Edit	reper viework configuration     Network DNS     Obtain an IP address automatica     Use the following IP address:     IP address:     Subnet mask:     Default gateway:     Preferred DNS server:     Alternate DNS server:	ally 255.255. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Helper VM Network     Network configuration: Manual     IP:      Subnet mask:      If a statement	Edit		

If you notice in Data to Copy on the left side, vmware converts your logical volumes into regular partitions.

Click Next and on the next window click Finish and let it do the transfer:

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After the conversion completes open your VMWare vsphere client and login to your ESX. Edit the settings for the virtual machine by assigning the CentOS dvd iso from the datastore and click on Connect at power on.

Show All Devices     Add     Remove       Hardware     Summary     Image: CPUs     Image: CPUs       CPUs     1     Image: CPUs     Image: CPUs       Video card     Video card     Video card       VMCI device     Restricted	Device Status     Connected     Grower on     Device Type     Client Device     Note: To present this device use use to put
CD/DVD Drive 1 (edited)     [ISO-images] CentO       Image: Score of the state of th	When the connect on the original device, you must power of the virtual machine and then dick the Connect CD/DVD button in the toolbar.      Host Device
	Datastore ISO File     [ISO-images] CentOS-5.4-x86_64-bir Browse      Mode     Passthrough IDE (recommended)     C Emulate IDE     Virtual Device Node     [IDE (0:0) CD/DVD Drive 1

You need to open a console and boot the VM you converted. Press F2 to make the vm go to bios and change the Boot order to boot first from a cd-rom. I had to reset the vm a few times to catch the console to accept F2 and go to bios. Save your bios changes and exit. When you boot the vm type **linux rescue** Select your language and select yes to enable the network interfaces and yes to configure eth0 Enable IPv4 support Do a manual address configuration and insert your IP, netmask, your gateway and dns on the next steps. Select Continue on the next step and then Ok # chroot /mnt/sysimage I had to copy/paste a couple of things so I enabled ssh on the rescued vm to do things quicker. # /etc/init.d/sshd start ssh as root to the ip you configured while you was setting up the rescue cd network.

Edit /etc/modprobe.conf and make it look like this:

Modify /etc/inittab by adding a hash in front of the line containing the xen console(line 45) and make it look like below. I uncommented 3 ttys:

# Run gettys in standard runlevels
#co:2345:respawn:/sbin/agetty xvc0 9600 vt100-nav
1:2345:respawn:/sbin/mingetty tty1
2:2345:respawn:/sbin/mingetty tty2
3:2345:respawn:/sbin/mingetty tty3
#4:2345:respawn:/sbin/mingetty tty4
#5:2345:respawn:/sbin/mingetty tty5
#6:2345:respawn:/sbin/mingetty tty6

We need to install a regular kernel to replace kernel-xen and load the vmware needed modules.

yum install kernel.x86\_64 # One of the VMs had CentOS 5.3 so I did a yum update while I was in rescue mode to install the newest kernel and update it to 5.4

Remove the Xen kernels:

# rpm -qa | grep kernel-xen | xargs rpm -e

edit /etc/grub.conf and delete console=xvc0 at the end of kernel /vmlinuz-2.6.18-164.11.1.el5 ro root=/dev/sdb1

power off the VM

Edit the VM settings and uncheck Connect at power on from the CD.

Start the vm and check if your server boots normally.

Remove the Citrix .repo file: # rm -f /etc/yum.repos.d/Citrix.repo

Install vmware tools: vi /etc/yum.repos.d/vmware-tools.repo and paste the following (this is for x86\_64 so change it to i386 if you use a 32 bit CentOS)

[vmware-tools] name=VMware Tools for Red Hat Enterprise Linux \$releasever . \$basearch baseurl=http://packages.vmware.com/tools/esx/4.0latest/rhel5/x86\_64 enabled=1 gpgcheck=1

# yum install vmware-tools –nogpgcheck # VMWare should sign their RPMs. Also note the double-dash. # reboot

Uninstall vmware converter from the converted VM: # /usr/bin/vmware-uninstall-converter.pl

The only downside I found in this conversion is that VMWare Converter removes the logical volumes and makes them regular partitions.

-Adam