VMinfo.nl: Create an ESX 4i USB boot key



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Document history

Version	Date	Editor	Remarks
0.1	7-jan-2008	R. Lam	Draft
0.2	9-jan-2008	R. Lam	Finished the guide and published it
0.3	19-aug-2008	R. Lam	Rewrite some parts of guide
0.4	22-aug-2008	R. Lam	Finished the guide and published it
0.5	20-may-2009	R. Lam	Rewrite document for ESX 4i

With the release of ESX 3i I found a way to extract the image file and put it on a USB key so the ESX host could boot from this USB key.

Now that ESX 4 have been release this week I checked out is it is still possible to extract the base image and put it on a USB key, and yes it's working fine just like the good "old" 3i version.

The steps to extract and put the 4i image on a USB key is basically the same as it was with 3i only some small changes where needed, however I have updated this manual for use with version 4i.

The "old" guide for 3i is still available on my website.

One of the advantages of having ESX pre-installed on a USB key is that you don't need to have an hard drive installed in the system that you want to use ESX on, just use shared storage (SAN/NAS) for running the vm's and you're done.

One other advantage of using ESX on a USB key is that you don't need to install ESX, just plug in the USB key and boot up the system from the USB port and you're ready to use ESX, no installation is required it saves you a lot of deployment time.

I have to say that VMware is not supporting this feature so be careful with using this on production machines. It's working fine however don't expect support from VMware if you are using this way of running ESX.

If you want to use this feature for production environments, you should take a look at solutions from your hardware vendor like Dell, HP and IBM they have solutions that will be supported by both VMware and the hardware vendor itself, those solutions are work more or less the same as this guide describes. It's just ESX 4i on an SD-card or USB key.

Pre-requirements

- A free USB 2.0 port on a Windows machine
- An USB key of at least 1GB
- IZArc http://www.izarc.org/download.html
- WinImage http://www.winimage.com/download.htm
- VMware ESX 4i (ISO) http://www.vmware.com/products/esxi/

Before we start creating a USB key you first need to download and install IZArc and WinImage. I won't describe here how to install those two tools because its just next, next and finish ⁽²⁾.

After you have installed IZarc and WinImage, go to the VMware website register and download the VMware ESXi 4.0 Installable ISO file. Write down the serial code that you received after register you will need this code later in the installation.

Step 1 – Extracting files from the ISO achieve

🖥 WinImage (unregistered) - C:\Documents and Settings\Administrator\Desktop\VMware-. File Image Disk Options Help 21 01 01 01 Label : CDROM R Mor Size Type Name 🔺 boot.cat 2,048 Security Catalog 5/1 🖬 cim.vgz 12,724,149 VGZ File 5/1 💏 cimstg. tgz 1,150,353 IZArc TGZ Archive 5/1 🗩 ienviron, tgz 5,821,096 IZArc TGZ Archive 5/1 image.tgz 288,597,431 IZArc TGZ Archive 5/1 21,453 IZArc TGZ Archive 💏 install.tgz 5/1 赫 isolinux.bin 12,241 IZArc BIN Archive 5/1 🖬 isolinux.cfg 312 CFG File 5/1mboot.c32 47,404 C32 File 5/1 🚾 menu.c32 35,916 C32 File 5/1README.txt 2,573 Text Document 5/1 🖬 sys.vgz 46,173,366 VGZ File 5/1 🍲 vmkboot.gz 16,805 IZArc GZ Archive 5/1😸 vmkernel.gz 2,044,404 IZArc GZ Archive 5/1 • 348668 KB, 0 bytes free 1 files selected (288,597,431 bytes)

Open the VMware ESX 4i ISO with WinImage.

Once opened you should se the files as shown here above.

F WinImage (unregister	ed) - C:\Documents and Settings\A	dministrator\I	Desktop\VMware	
File Image Disk Options	Help			
🗋 🖻 🗐 🔂 1	6 🏋 🗗 🖌 🖌 🔁	1 1 🖬 ன	Label : CDROM	
····· 🗁 🚶	Name 🔺	Size	Туре	Moc
	🚔 boot.cat	2,048	Security Catalog	5/1
	🖬 cim.vgz	12,724,149	VGZ File	5/1
	💏 cimstg.tgz	1,150,353	IZArc TGZ Archive	5/1
	n ienviron.tgz	5,821,096	IZArc TGZ Archive	5/1
	🐀 image.tgz	288,597,431	IZArc TGZ Archive	5/1
	minstall.tgz	21,453	IZArc TGZ Archive	5/1
	isolinux.biPile properties	12,241	IZArc BIN Archive	5/1
	🔟 isolinux.cfg	312	CFG File	5/1
	mboot.c32	47,404	C32 File	5/1
	menu.c32	35,916	C32 File	5/1
	README.txt	2,573	Text Document	5/1
	sys.vgz	46,173,366	VGZ File	5/1
	😸 vmkboot.gz	16,805	IZArc GZ Archive	5/1
	to where the second sec	2,044,404	IZArc GZ Archive	5/1
Extract files from current image	ge			//

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Select and right click on image.tgz and select Extract.

Extract	×			
Path:				
C:\Documents and Settings\Ad	Browse			
Extract folders				
Ignore folders				
C Extract all files into the same folder				
C Extract with pathname				
OK Cancel				

Select a directory to export the file.



Once extracted, open the image.tgz file with IZArc.

IZArc - C:\Documents and Settings	Administrator\Desktop	\image.tgz				×
File View Actions Tools Options Help						
😒 🤌 🤌 🎺	8					
New Open Add Extract Test	Exit					
2 X	😥 C:\Documents an	d Settings\Administ	rator\Desk	top\image.	tgz	
	File Name 🔺		File Type		Modified	
	image.tgz.temptar	Open	TEMOTAD	File	5/1/2009 4:11:42 AM	
		Extract	Shift+E			
		Delete	Shift+D			
		View	Shift+V			
		View with Notepad				
		Select All	Ctrl+A			
		Invert Selection				
		Filter	Shift+F			
		File Properties				
Type: GZip Files: 1 Packed: 28	8,597,423 Un	packed: 288,624,640	Rati	io: 0%		

Select and right click on the file **image.tgz.temptar** click on **Extract** to export the file.

Extract	X
Extract to: :\Documents and Settings\	Administrator \Desktop \image 🔽 🔁
Options: Confirm File Overwites Restore Original Folders Restore File Attributes Open Folder After Extract	Extract: © Selected Files © All Files Date Attributes: File Date
Extract	Cancel Help

Select an directory to extract the **image.tgz.temptar**.



Open the image.tgz.temptar with IZArc.

File View Actions Tools Options Help	dministrator\Deskto	p\image\image.tgz.tem	iptar		×
New Open Add Extract Test	Exit				
😥 X	😥 usr\lib\vmware	e\installer\			
🖃 🕼 image.tgz.temptar	File Name 🔺		File Type	Modified	
e- 🔁 lib	Mware-VMvisor-big	000-000-000-000-000-000-000-000-000-00	IZArc BZ2 Archiv	/e 5/1/2009 4:11:40 AM	
⊡-⊖ vmware I⊖ installer		Extract Delete View View with Notepad	Shift+E Shift+D Shift+V d		
		Select All Invert Selection Filter	Ctrl+A Shift+F		
		File Properties			
Type: TAR Files: 1 Packed: 28	8,611,263	Jnpacked: 288,611,263	Ratio: 0%		

Browse to /usr/lib/vmware/installer and open the file VMware-VMvisor-big-164009x86_64.dd.bz2.



Select and extract the file VMware-VMvisor-big-164009-x86_64.dd

Step 2 – Copy image file to the USB key

To store the image file **VMware-VMvisor-big-164009-x86_64.dd** on USB storage we need WinImage.

First connect the USB key to your machine, make sure that the USB key is clean and formatted.

F WinImage (unregistered)			- O ×
File Image Disk Options Help			
Use disk C: Use disk D:		Label :	
Use CD-ROM E: Use CD-ROM F:		e Type Modified	
F <u>o</u> rmat disk Edit Master Boot record properties Creating Virtual Hard Disk image from p	hysical drive		
Restore Virtual Hard Disk image on physic Convert Virtual Hard Disk image	sical drive	4	
<u>Create</u> CD-ROM ISO image			
Read disk Compare disk	Ctrl+R		
<u>W</u> rite disk	Ctrl+W	1	
Eormat and write disk	Ctrl+F	1	
		-	
Restore Virtual Hard Disk image on physical drive (profes	sional mode only)		11.

Within WinImage open **Disk** in the menu and click on **Restore Virtual Hard Drive image on physical drive...**

Restore Virtual Hard Disk image on physical drive	×
Select a physical drive in the list:	ОК
Disk 1: 1,974,272 KB - Ut165 USB2FlashStorage 0.00	Cancel
Include non removable hard disk(s)	
WARNING: restoring Virtual Hard Disk image on physical drive w physical drive content. Only proceed if you know exactly what y	ill fully erase the you are doing.

Select the USB key and click on OK.

en					?
Look in:	🚞 image		· 0	1 🕫 🖽 -	
My Recent	VMware-VMv	risor-big-164009-x86_64.	.dd		
Documents Desktop					
by Documents					
My Computer					
i		Manuary VIA issue his	104000-000-04		Open
My Network Places	Files of type:	All files (*.*)	104003-x86_64	-	Cancel

<u>Browse</u> to the extracted image file and select at "<u>Files of type</u>: All files (*.*)" select VMware-VMvisor-big-164009-x86_64.dd and click on Open.

Warning				×
?	You will restore in This message is t	nage on physical he LAST WARNIN	drive 1 Ut165 USE G. Are you sure y	B2FlashStorage 0.00. you want erase disk content?
		Yes	No	

Click on **Yes** to begin the restore.

Writing disk	\times
d:\update_2-110271.i386.dd	
9 %	
Cancel	

This action could take up to a few minutes to complete. When the screen disappears the restore is completed successfully.

Step 3 – Testing the USB key

To test if the USB key is working correctly inserts the key in an available USB port on your ESX host and let the machine boot from the USB port.

If it's working fine you should se that VMware ESX 4i is booting and after a few seconds the console will be displayed, configure the IP settings and try to connect to the ESX host with the VMware vSphere Client.

If you have problems booting ESX 4i from the USB key or if ESX is crashing, than probably there's was something going wrong during the restore of the image file to the USB key. In this case redo step 2.

- Note: If you're machine have an internal USB port available it's better to connect the USB key to that port, so the key is better protected from unwanted failures. For example if the USB key is being disconnected from the machine when ESX is running it will crash and so does your vm's running on this host. Most of the new servers today have one or more internal USB ports available so that should not be a problem.
- Note: To use all the new functions within ESX 4 you must have compatible hardware, so please check the VMware HCL at; <u>http://www.vmware.com/resources/compatibility/search.php</u> or check the Community supported HCL at; <u>http://communities.vmware.com/community/vmtn/general/cshwsw</u>.