

# Hard-coding static MAC address for ...



[mikeyboy](#) 81 posts since

Jun 21, 2006 Hi, please can anyone advise. We have an ESX Server 2.5.2 farm and we sometimes migrate VMs between hosts with Virtual Center (we power them off first and cold-migrate them, we don't use VMotion).

We have an app that requires a static MAC address; if it ever changes we will have problems.

I know that by default the MAC address is automatically generated when a VM is created and stored in the .vmx file in the ethernet0.generatedaddress parameter. I have done some testing where I have powered off the VM in question (which has an automatically generated MAC) and moved it from host to host and powered back on. I've done this a number of times and that MAC address has never changed. I've also looked at some other VMs we have that rely on a static MAC address which I know have moved about in the past, and we've never had a problem with MAC addresses changing. Which is what I want.

However...I have read some posts and KB articles stating that the MAC address *might* change and therefore I should be looking to 'hard-code' that MAC address as a static address.....is that correct for ESX 2.5.2, and under what circumstances might it change (bearing in mind that I've not seen any instances in my environment where the automatically generated MAC address has ever changed)?

Thankyou

Michael



[Dave.Mishchen...](#) 8,943 posts since

Nov 15, 2005 **1. Re: Hard-coding static MAC address for VM..do I need to** Jun 13, 2007 12:23 AM

You can change ethernetN.GeneratedAddress to ethernetN.address in the VMX if you want to prevent a change, but when you upgrade to ESX 3.0 the VMware OUI range will change to start with 00:50:56.

You can also set the MAC manually on a Windows host if you bring up the properties for the NIC and then set the NetworkAddress field on the Advanced tab.



[MR-T](#) 4,146 posts since

Apr 19, 2005 **2. Re: Hard-coding static MAC address for VM..do I need to** Jun 13, 2007 12:31 AM

The manual says "After the MAC address has been generated, it does not change unless the virtual machine is moved to a different location, for example, to a different path on the same server. "

Try this, to see if you can make it change.



[VMNU](#) 6 posts since

Mar 16, 2005 **3. Re: Hard-coding static MAC address for VM..do I need to** Jun 13, 2007 4:28 AM

Hi

You will need to add/alter the following lines within the VMX file to the following:

Removing the two lines that begin with the following:

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```
ethernet[n].generatedAddress = "00:0c:29:xx:yy:zz"
```

```
ethernet[n].generatedAddressOffset = "0"
```

Edit the following line:

```
ethernet[n].addressType = "generated"
```

Change to

```
ethernet[n].addressType = "static"
```

and add the following line:

```
ethernet[n].address = "00:50:56:xx:yy:zz"
```

In these options, [n] is the number of the virtual Ethernet adapter # for example ethernet0.

That way it will not change MAC.

Cheers



[esiebert7625](#) 6,794 posts since

Oct 23, 2006 4. **Re: Hard-coding static MAC address for VM..do I need to** Jun 13, 2007 5:51 AM

Here's some documentation I wrote on this...

[http://vmware-land.com/Vmware\\_Tips.html#Net3](http://vmware-land.com/Vmware_Tips.html#Net3)

How can I set a static MAC address for my VM?

This is useful for software that is licensed by the MAC address of the server it is running on or if you migrate a physical server to virtual and want to keep the same MAC address. A VM's MAC address will change if the location of the VM changes, ie. different path on the same host. During a hot migration (Vmotion) the location of the VM does not change, this is also true of a VM that changes hosts due to HA/DRS migration. During a cold migration the location of the VM does change so the MAC address of the VM will change.

MAC addresses are hex values and consist of six groups of hex numbers. The first 3 octets of the MAC address is a unique code assigned to each NIC vendor, this is also called the Organizationally Unique Identifier (OUI), VMware's OUI is #00:50:56#. The last 3 octets are assigned to all of the NIC's for that vendor. Each MAC address must be unique to avoid conflicts with other network devices. You do not have to use the VMware assigned range (00:50:56) for your NIC's. If you are coming from a physical server you can use the previous NIC's range instead, (ie. HP/Compaq NIC's use 00:08:02) as the first 3 octets. Just make sure the physical NIC and virtual NIC with the same MAC address are not active on the same physical network at the same time. There are several methods for setting a static MAC address on a VM which are listed below. If you use the first method you must stay inside VMware's allowed MAC addresses (00:50:56:00:00:00 # 00:50:56:3F:FF:FF) or the VM will not start

Editing the VMX file of the VM:

```
# Edit the VMX file of the VM
```

```
# Change the following line from ethernetN.addressType="vpx" to ethernetN.addressType="static" (N is the number of your ethernet adapter, usually 0)
```

```
# Next change the line #ethernetN.GeneratedAddress# to #ethernetN.address# and then change the current MAC address to #00:50:56:XX:YY:ZZ# (again N is the number of your ethernet adapter and XX is a valid hex number between 00 and 3F, and YY and ZZ are valid hex numbers between 00 and FF. The value for XX must not be greater than 3F in order to avoid conflict with MAC addresses that are generated by the VMware Workstation and VMware GSX Server products.)
```

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# Power your VM back on. Login to the OS, go to the CMD prompt and type #ipconfig /all#, your manually assigned MAC address should be listed for the NIC that you changed

Setting the NIC properties in Windows:

# Edit the Local Area Connection properties for the NIC you want to change

# Click the Configure button next to the NIC name

# On the Advanced tab select NetworkAddress

# In the Value field enter a new value for the MAC address, enter only numbers or letters, no spaces, dashes or colons. This MAC address can be any valid hex numbers between 00 and FF for any of the octets

# Click OK and that's it, the new MAC address takes effect immediately and will override any MAC address set by VMware

Fyi#if you find this post helpful, please award points using the Helpful/Correct buttons.

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Thanks, Eric

Visit my website: <http://vmware-land.com>

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[mikeyboy](#) 81 posts since

Jun 21, 2006 5. **Re: Hard-coding static MAC address for VM..do I need to** Jul 9, 2007 2:43 AM

in response to: [esiebert7625](#) Hi Eric, you've stated

"During a cold migration the location of the VM does change so the MAC address of the VM will change."

Whenever I do a cold migration with virtual center (ie. power off the VM, right click, migrate), the MAC address definitely does not change, I've just tried it again to check. During my cold migrations the vmx path stays the same (eg. /home/vmware/servername/servername.vmx), so I'm assuming that's why the MAC isn't changing. So as long as the filepath to the vmx file stays the same it doesn't matter that it's moved to a different host, and the MAC will stay the same. Would you agree?

Thankyou

Michael



[esiebert7625](#) 6,794 posts since

Oct 23, 2006 6. **Re: Hard-coding static MAC address for VM..do I need to** Jul 9, 2007 9:31 AM

in response to: [mikeyboy](#) Typically cold migrations are used for VM's that are on local storage, if the VM was on shared storage most people vmotion it hot to another ESX host. So yes if you do a cold migration and the VM does not change locations then the MAC address will not change.