

[TUTORIAL] How-To: Convert Windows 10 Generation 2 Hyper-V VM to a Proxmox VM

 forum.proxmox.com/threads/how-to-convert-windows-10-generation-2-hyper-v-vm-to-a-proxmox-vm.107511

Conker

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- [Proxmox Virtual Environment](#)
- [Proxmox VE: Installation and configuration](#)

P

pbengert

Member

Apr 2, 2022

Hi!

I found lots of infos how to use a Windows 10 generation 2 Hyper-V VM in Proxmox. But none worked for me completely.

So I decided to write down what worked for me. Unfortunately I can only attach 10 pictures here, so I can't show all the pictures.

What you need:

- 1) Windows 10 Installation ISO - get it here: <https://www.microsoft.com/en-us/software-download/windows10ISO>
- 2) Virtio-win ISO - get it here: <https://fedorapeople.org/groups/virt/virtio-win/direct-downloads/stable-virtio/virtio-win.iso>

Common problems:

- 1) Generation 2 virtual machines are booting via UEFI. So you can't use SeaBIOS in Proxmox but you must use OVMF and you need to add a EFI Disk. Further you might have to tweak the boot process in the UEFI Bios.
- 2) Virtio-Driver do not load by default even if installed earlier. Workaround: Inject the Virtio-SCSI driver before booting and then install the virtio-win CD.

You find some information here:

https://pve.proxmox.com/wiki/Migration_of_servers_to_Proxmox_VE

Step 1 on the Hyper-V Server:

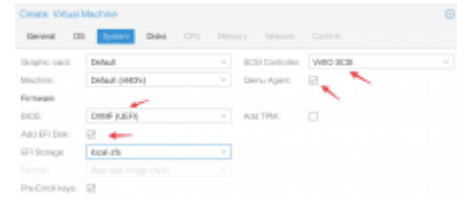
- a) Shutdown the windows VM. Right-click and export the vm.
- b) We only need the disk file with the ending vhdx or vhd
- c) Transfer this file to your proxmox server

Step 2 on Proxmox:

- a) Create a new virtual machine

- In the general tab: no special settings needed
- In the OS tab: Use a CD/DVD and attach the Windows 10 iso. Guest OS: set to Microsoft Windows an Version to 10.
- In the System tab: Choose OVMF (UEFI) as BIOS and add a EFI Disk. Set the SCSI controller to VirtIO SCSI and check Qemu Agent

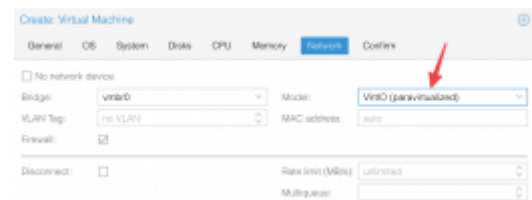
- In the Disks tab: in proxmox 7.1. delete the preconfigures harddisk and create it without harddisk. In earlier versions create a harddisk - but please delete it right after creating the vm! We use our import vhdx/vhd instead!
- For the CPU and memory tab: try to match your hyper-v vm as closely as possible.
- In the Network Tab: use VirtIO as your model



Next create the VM but do not start it. (If you had to create a harddisk delete it now).

Add a second CD/DVD:

an use the virtio-win.iso



Now it is time to import the windows_10 vhdx:

This need to be done in the terminal:

Code:

We can use this command:

```
qm importdisk <vmid> <source> <storage> [OPTIONS]
```

For me it looks like this:

```
root@pm2:~# qm importdisk 200 ./Windows\ 10\ Pro.vhdx local-zfs
importing disk './Windows 10 Pro.vhdx' to VM 200 ...
```

```
....
....
```

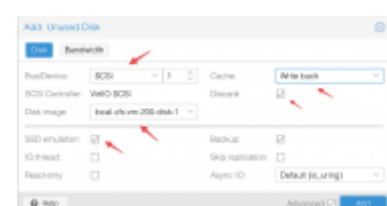
```
Successfully imported disk as 'unused0:local-zfs:vm-200-disk-1'
```



Now we can see the disk in the proxmox gui and we can attach it by double-clicking it:

Attach it to SCSI on the VirtIO SCSI. Set the cache type to what you like, maybe see documentation for pros and cons.

Now my machine looks like this:



Make sure that the boot order is correct. It should first try to boot from the CD/DVD drives and then from our imported harddisk on scsi1.

Inject the virtio-driver to your windows installation:

Now it is time to boot the machine up. Try not to miss the "Press an key to boot from CD" to boot from the windows iso.

Now you will get the Windows Setup windows

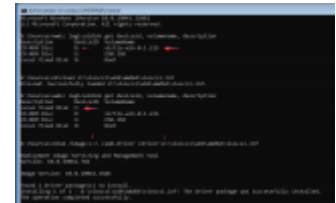
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- Show all drives again: `wmic logicaldisk get deviceid, volumename, description` - now drive c: with the windows installation should be found. If this is the case, then we can inject the driver into this windows installation
- `dism /image:c:\ /add-driver /driver:d:\vioscsi\w10\amd64\vioscsi.inf`

We have injected the virtio scsi driver so we can exit this shell, shutdown the pc and reboot.



Now see if windows boots. **If it won't boot see the next post down below to see how to fix the UEFI Bios boot process.**

If you can boot windows the continue:

In Windows 10: Install all virtio-driver from the virtio-win cd that is loaded in windows and install the qemu-guest-agent from guest-agent folder

See the windows device-manager if all drivers are installed:

Et volia. You have migrated your windows 10 to proxmox. Reboot to see if everything works!



Troubleshooting the UEFI boot process if windows does not boot:

- Remove the CD/DVDs -> Hardware -> Double-click the CD/DVD Drive and check "Do not use any media" for both CD/DVD drives (or remove them completely)
- Start the VM in the console view - right after starting it press ESC a few time to enter the UEFI Bios
- Go to Boot Maintenance Manager --> Boot From File --> Now choose the correct harddisk (if you have removed the isos from the CD/DVD you should only have one entry) --> Choose this one --> Now you might have to experiment a bit --> for me this works: <EFI> --> <Boot> --> bootx64.efi --> choose this entry and see if windows boots now. If it does not boot see in you can find another efi file which works
- If you found the correct file, now make it persistent. Reboot --> ESC to get into the UEFI Bios

- Boot Maintenance Manager --> Boot Options --> Add Boot Option -> Choose the efi-file that worked -> input a description like "Windows10" --> Commit changes and exit --> Change Boot Order --> Sort the boot order that you new entry is on top of the list and press F10 to save it. Now leave the Bios an reboot to see if it works

Good luck and happy converting to proxmox!

Last edited: Apr 2, 2022



Reactions: [AdepSyla](#), [johtesk](#), [Chris7Lives](#) and 5 others

C

May 13, 2022

#2

I'm having trouble getting this to work. I've gone over your instructions very carefully. I've tried this with a long standing VM and also a fresh one that I spun up this morning.

The disk appears to import just fine. I upload the disk to one of our NAS, mounted the NAS to Proxmox, and run the import while the vhdx is on the NAS. The vhdx was only 9gigs, but the import declared it at 50gb.

Then, I boot into the repair command line, load the driver, run the wmic and it doesn't show the C: drive.

Any thoughts on what I'm doing wrong? Could it be the QM import doesn't like the vhdx being on the NAS when attempting to import?

P

pbengert

Member

Apr 1, 2022

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May 16, 2022

#3

Conker said:

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Any thoughts on what I'm doing wrong? Could it be the QM import doesn't like the vhdx being on the NAS when attempting to import?

[Click to expand...](#)

I have no good idea why it does not work. Check if the C: drive is really attached to the vm. (Only importing it does not attach it automatically). Maybe post screenshot of your vm configuration.

H

Jun 7, 2022

#4

pbengert said:

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 - In the System tab: Choose OVMF (UEFI) as BIOS and add a EFI Disk. Set the SCSI controller to VirtIO SCSI and check Qemu Agent

View attachment 35675

- In the Disks tab: in proxmox 7.1. delete the preconfigures harddisk and create it without harddisk. In earlier versions create a harddisk - but please delete it right after creating the vm! We use our import vhdx/vhd instead!
- For the CPU and memory tab: try to match your hyper-v vm as closely as possible.
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[View attachment 35677](#)

Next create the VM but do not start it. (If you had to create a harddisk delete it now).

Add a second CD/DVD:

[View attachment 35678](#)

an use the virtio-win.iso

Now it is time to import the windows_10 vhd:

This need to be done in the terminal:

Code:

We can use this command:

```
qm importdisk <vmid> <source> <storage> [OPTIONS]
```

For me it looks like this:

```
root@pm2:~# qm importdisk 200 ./Windows\ 10\ Pro.vhdx local-zfs
importing disk './Windows 10 Pro.vhdx' to VM 200 ...
....
....
Successfully imported disk as 'unused0:local-zfs:vm-200-disk-1'
```

Now we can see the disk in the proxmox gui and we can attach it by double-clicking it:

[View attachment 35681](#)

Attach it to SCSI on the VirtIO SCSI. Set the cache type to what you like, maybe see documentation for pros and cons.

Now my machine looks like this:

[View attachment 35684](#)

Make sure that the boot order is correct. It should first try to boot from the CD/DVD drives and then from our imported harddisk on scsi1.

Inject the virtio-driver to your windows installation:

Now it is time to boot the machine up. Try not to miss the "Press an key to boot from CD" to boot from the windows iso.

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Choose your language settings --> next --> Repair your computer --> Troubleshoot --> Command prompt

Now you get a windows command prompt:

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- This will show you all drives - but it will not show the imported windows harddisk as the virtio scsi driver is not loaded
- see which drive contains the virtio-win iso, here it is drive D:
- Load the virtio-scsi driver with: `drvload d:\vioscsi\w10\amd64\vioscsi.inf`
- Show all drives again: `wmic logicaldisk get deviceid, volumename, description` - now drive c: with the windows installation should be found. If this is the case, then we can inject the driver into this windows installation
- `dism /image:c:\ /add-driver /driver:d:\vioscsi\w10\amd64\vioscsi.inf`

[View attachment 35685](#)

We have injected the virtio scsi driver so we can exit this shell, shutdown the pc and reboot.

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It you can boot windows the continue:

In Windows 10: Install all virtio-driver from the virtio-win cd that is loaded in windows and install the qemu-guest-agent from guest-agent folder

See the windows device-manager if all drivers are installed:

[View attachment 35688](#)

Et volia. You have migrated your windows 10 to proxmox. Reboot to see if everything works!

Troubleshooting the UEFI boot process if windows does not boot:

- Remove the CD/DVDs -> Hardware -> Double-click the CD/DVD Drive and check "Do not use any media" for both CD/DVD drives (or remove them completely)
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- Go to Boot Maintanance Manager --> Boot From File --> Now choose the correct harddisk (if you have removed the isos from the CD/DVD you should only have one entry) --> Choose this one --> Now you might have to experiment a bit --> for me this works: <EFI> --> <Boot> --> bootx64.efi --> choose this entry and see if windows boots now. If it does not boot see in you can find another efi file which works
- If you found the correct file, now make it persistent. Reboot --> ESC to get into the UEFI Bios

- Boot Maintenance Manager --> Boot Options --> Add Boot Option -> Choose the efi-file that worked -> input a description like "Windows10" --> Commit changes and exit --> Change Boot Order --> Sort the boot order that you new entry is on top of the list and press F10 to save it. Now leave the Bios an reboot to see if it works

Good luck and happy converting to proxmox!

[Click to expand...](#)

Hi there

Thank you for this great tutorial! I am a bit stuck. I have followed all the steps. But during the driver injection step, I cannot load it to C: drive. I get dism error 2. At that step I had:

Local Fixed Disk C System Reserved
CD-ROM disk
CD-ROM disk
Local Fixed Disk F
Local Fixed Disk G
Local Fixed Disk X Boot

So I ran the dism command on F, that worked. Later on tried on G, that also gave dism error 2. I still tried to reboot thinking that the driver is injected on disk F, and that it will maybe work. Does not boot. So I went to the UEFI troubleshooting part. I detached both the CD Rom drives and selected the first boot device as local disk. When I go to the Boot Maintenance Manager -> Boot From File, the File Explorer is completely empty. Any ideas what else I could try? This is for a server 2016. I see the post is marked as Generation 2, could it be that my VM is exported in a Generation 1 format and therefor it does not work? I am not overly familiar with Windows and VHDX so any help will be greatly appreciated!

M

Memory	4.00 GiB
Processors	4 (1 sockets, 4 cores)
BIOS	OVMPF (UEFI)
Display	Default
Machine	pc-i440fx-6.2
SCSI Controller	VirtIO SCSI
CD/DVD Drive (ide0)	none,media=cdrom
CD/DVD Drive (ide2)	none,media=cdrom
Hard Disk (sata1)	local-lvm:vm-101-disk-1,cache=writeback,discard=on,size=139392M
Network Device (net0)	virtio=76:95:44:C4:74:4A,bridge=vbr0,firewall=1
EFI Disk	local-lvm:vm-101-disk-0,efitype=4m,pre-enrolled-keys=1,size=4M



meichthys

Well-Known Member

Sep 25, 2019

35

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48

35

Oct 18, 2022

#5

If you don't want to install the extra drivers, you can try to use an IDE SATA Drive instead of the VirtIO. Also for networking you can use the E1000 type instead of VirtIO. Once you have Windows up and running, then you can log in and install the VirtIO drivers easily by downloading them with a browser and installing with a normal exe or you can mount the iso in windows.

Last edited: Oct 18, 2022

H

hanse

Member

Jul 25, 2021

11

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Oct 19, 2022

#6

Thank you, but in 7.1 I don't have that option:

Was this what you were referring to?

Oct 19, 2022

#7

@hanse Maybe update to PVE 7.2

This is what i'm talking about:

Last edited: Oct 19, 2022

Jan 9, 2023



#8

Hi all. Here is my way to **migrate hyper-v gen 2 drive to proxmox**:

1. Convert .vhdx - > .qcow2 (i use StarWind V2V Converter);
2. Transfer file disk to proxmox (/var/lib/vz/images);
3. Import

Code:

```
qm importdisk 107 /var/lib/vz/images/windows.qcow2 local --format qcow2
```

107 - id VM

3. Create VM on Proxmox with **SATA** (name will be windows.qcow2);
4. Create VM on Proxmox with **SCSI** (temp);
5. Run VM (with 2 disk SATA and SCSI);
6. Install Windows VirtIO Drivers;
4. Detach and delete **SCSI** (temp) disk;
5. Detach **SATA** disk (windows.qcow2);
6. Attach windows.qcow2 but change **SCSI!!!**
7. Run VM;
8. Congratulations!!!

Last edited: Jan 19, 2023



Reactions: [GoaMetz](#) and [UdoB](#)

Oct 29, 2023

#9

I am attempting to convert a Hyper-V VM (Win server 2022) and followed the steps from above in bold below.:

Inject the virtio-driver to your windows installation:

Now it is time to boot the machine up. Try not to miss the "Press an key to boot from CD" to boot from the windows iso.

Now you will get the Windows Setup windows

Choose your language settings --> next --> Repair your computer --> Troubleshoot -> Command prompt

Now you get a windows command prompt:



- **First step: show all drives: wmic logicaldisk get deviceid, volumename, description**
- **This will show you all drives - but it will not show the imported windows harddisk as the virtio scsi driver is not loaded**
- **see which drive contains the virtio-win iso, here it is drive D:**
- **Load the virtio-scsi driver with: drvload d:\vioscsi\w10\amd64\vioscsi.inf**
- **Show all drives again: wmic logicaldisk get deviceid, volumename, description - now drive c: with the windows installation should be found. If this is the case, then we can inject the driver into this windows installation**
- **dism /image:c:\ /add-driver /driver:d:\vioscsi\w10\amd64\vioscsi.inf**

This was successful:

- Load the virtio-scsi driver with: drvload d:\vioscsi\w10\amd64\vioscsi.inf
- But then when checking **wmic logicaldisk get deviceid, volumename, description again, C drive does not show up.**

Any ideas?

Last edited: Oct 30, 2023

Nov 15, 2023

#10

int-tech01 said:

I am attempting to convert a Hyper-V VM (Win server 2022) and followed the steps from above in bold below.:

Inject the virtio-driver to your windows installation:

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Choose your language settings --> next --> Repair your computer -->

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Now you get a windows command prompt:

- **First step: show all drives: wmic logicaldisk get deviceid, volumename, description**
- **This will show you all drives - but it will not show the imported windows harddisk as the virtio scsi driver is not loaded**
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- **Show all drives again: wmic logicaldisk get deviceid, volumename, description - now drive c: with the windows installation should be found. If this is the case, then we can inject the driver into this windows installation**
- **dism /image:c:\ /add-driver /driver:d:\vioscsi\w10\amd64\vioscsi.inf**

This was successful:

- Load the virtio-scsi driver with: drvload d:\vioscsi\w10\amd64\vioscsi.inf
- But then when checking **wmic logicaldisk get deviceid, volumename, description again, C drive does not show up.**

Any ideas?

[Click to expand...](#)

Check if adding viostor driver helps. I had that, and in fact it depends on whether you used virtio or SCSI for mounting the image in Proxmox.

Chris

Jan 15, 2024

#11

Thanks for your help, after 24 hours of struggle, I can migrate my VMS from hyper v to Proxmox. it was the driver issue due to which I could not see the converted disk. Thanks, Thanks Thanks a lot.

Apr 30, 2024

#12

I wish to add some comments. Hope this can make this thread more Google aware. Me too spend some hours to make things work.

For the Google: This can help with migration any modern windows version which uses Generation 2 Hyper-V Windows 7, Windows 8, Windows 10, Windows Server 2012, Windows 2012R2, 2016, 2019, and maybe later. I don't try.

This tutorial helps me, but I wish to add some steps, maybe it can help someone.

Step 0. Before Migration. Install all drivers from virtio win ISO in working VM. It will help later with Ethernet, Display and etc.

Step 1. I just copy vhdx/vhd file. Nothing else matters for me.

Step 2.

System tab.

I prefer to use q35 as a Machine, it looks more reliable to modern systems. BIOS - of course only OVMF (UEFI). EFI Storage, looks like optional for me. VHDX image already contains EFI partition and I use it to boot (see Troubleshooting). For a SCSI controller use VirtIO SCSI or VirtIO SCSI single. Other don't work for me. (also Troubleshooting)

For the CPU and Memory tab.

AFAIK this settings can't prevent windows boot, they can be relevant only for licensing.

All other steps in this part, thx topic starter, work just like intended. I tried to convert vhdx with qemu-img in cow2 before import, but it looks like direct vhdx import works just fine.

Step 3. Inject the virtio-driver to your windows installation.

In this step I suppose you are a intermediate Windows Administrator and you knew how recovery console works.

I'm an old man, i check disk by changing the letters. In general. "X" - is used to recovery console RAM-disk. "D", "E" - used for any mounted drives. In our case Windows Distrib ISO and virtio win ISO. Windows disks is inaccessible. After loading drivers it probably became "C" or other letters if you have more then one partition in VHDX image.

- Load the virtio-scsi driver with: `drvload 'VirtIO Disk':\vioscsi\WinVersion\amd64\vioscsi.inf`
- Find your Main Windows partition.
- Inject driver `dism /image:'Win partition' /add-driver /driver:'VirtIO Disk':\vioscsi\WinVersion\amd64\vioscsi.inf`

Additional variant.

In general you can inject all VirtIO drivers with `dism /image:'Win partition' /add-driver /driver:'VirtIO Disk':\ /Recurse /ForceUnsigned`. I recommend to use it if first variant fails. This will inject all VirtIO drivers ignoring signing.

Thx topic starter. Great tutorial!!!

Troubleshooting.

In general your VHDX image contains EFI partition. So if you have problems even with bootloader i suggest next:

- With "Esc" entering "BIOS".
- Boot Maintenance Manager --> Boot From File --> "Find your HDD" (it will be visible even without driver injection) --> EFI --> Microsoft --> Boot. Select "bootmgfw.efi". This is Windows EFI boot loader.

If you can't see your HDD partition in "BIOS", probably you must solve the problem with VM at first. For me this was a SCSI controller issue.

Windows 2016 Issue.

I have trouble migrating Windows 2016 VM. It wan't boot even after injecting all drivers. Helps other topic solution.

- After conversion do not inject driver at all.
- Add empty VirtIO SCSI type disk, to check and mount it inside VM.
- Attach converted disk as IDE drive. It should boot properly.
- Reinstall virtio drivers. Check that empty drive mounted and worked successful.
- Change disk to SCSI. And it works for me.

I'm not native English speaker. Sorry for inconvenience. 😊

Last edited: May 2, 2024

Oct 4, 2024

#13

If you mus do all those things to do that Just make a backup with acronis on the origingal vm then create a vm on proxmox with your desire config boot the machine with acronis iso boot cd and restore the machine when it finish all good

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