Contents

1 Introduction

Hello and welcome to Windows. This document describes the process of configuring windows machines to run on Proxmox. If you would like to add something, please contribute in the github.

2 Getting the correct ISOs to Proxmox

The goal is to get both the Windows Server and the VirtIO driver iso files onto proxmox.

You should can either download the files to your computer and then to proxmox, or you can have proxmox download them from "download from url."

In either case, the Windows Server 2019 iso is here and the VirtIO iso is here.

The VirtIO is necessary because proxmox says so (update with better reasoning). Proxmox Wiki: Windows VirtIO Drivers

VirtIO also enables the QEMU Guest Agent, which allows for many convenient things in proxmox.

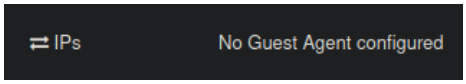

Figure 1: The IP Address is not displayed if there is no guest agent

3 Getting the VM from the ISO

The goal is to take your .iso file and turn it into a VM. If it is helpful, here is some guy doing it with no words: video
If you don't want to watch that, click "create VM" and select the iso file you uploaded. The important settings to change are:

Category	Setting to Change
OS Type	Microsoft Windows, Version: 10/2016/2019
System	SCSI Controller: VirtIO SCSI Single
System	QEMU Agent checked
Disks	Bus/Device: SCSI
Network	Bridge: (the Cyber Range Bridge, for me it is vmbr0)

IMPORTANT: After creating this VM, click it and go to the "Hardware" menu in Proxmox. Click "add CD/DVD" and click the virtIO.iso file you uploaded. This will enable the QEMU Agent.

4 Installing / Logging Into the VM

Note: You can not use many of proxmox's features (i.e. shut it down without going through the console) without the guest agent installed. Just to save you from mashing the "shutdown" button and wondering why it doesn't work.
How to get into the VM:

1. Power on the VM
2. Log onto the VM via the Proxmox console

How to install Windows on the VM:

1. Select "next"
2. Select "2019 Standard Evaluation (Desktop Experience)"
3. Select "Advanced Installation"
4. Add the VirtIO driver you installed previously

Now you wait for it to install. Don't worry, you'll get used to waiting for windows!

5 Basic Configurations to Prepare for a Template

The goal is to never do that time consuming process again. We would like to create a template so we can clone it. Before you make a template you can add useful things like RDP, Firefox, setting DNS, etc. The world is your oyster.

5.1 Enabling RDP

Bing can handle this one.

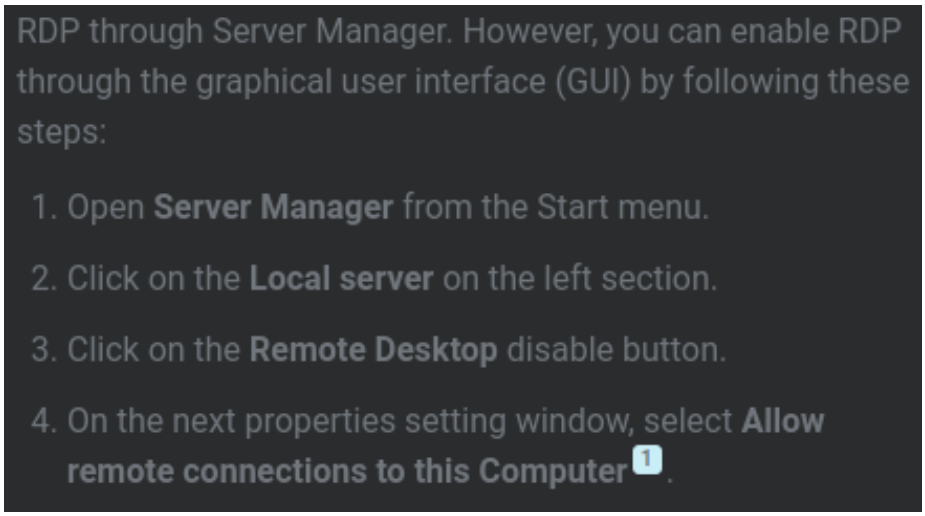

Figure 2: Bing explaining how to enable RDP

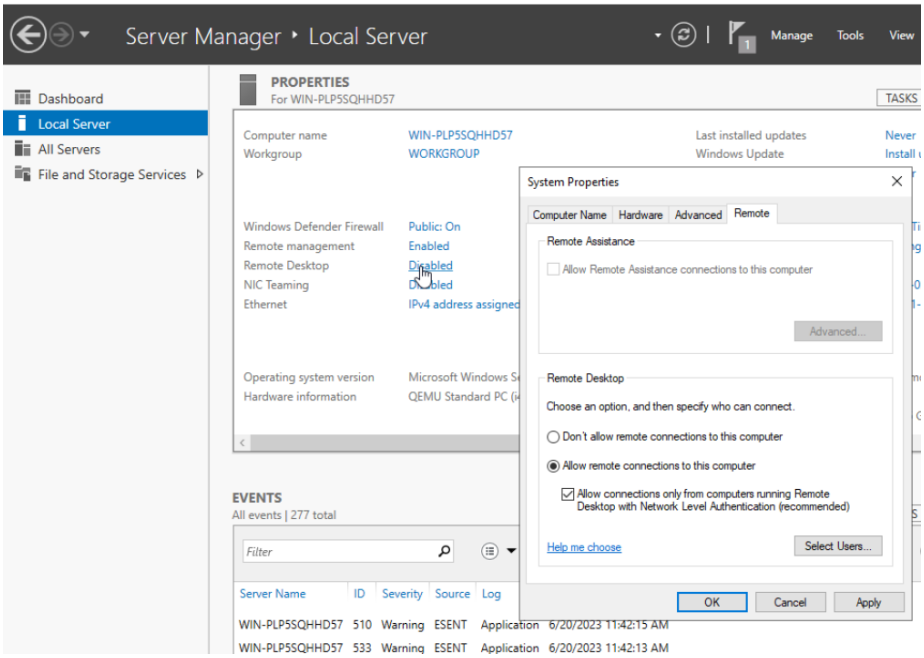

Figure 3: Enabling RDP

5.2 Installing Firefox

By default, Internet Explorer is the only browser installed on the computer. What a terrible browser! You can avoid ever opening IE by installing Firefox from powershell. You may have to type it if you are using the Proxmox NoVNC console. Do this step after setting up RDP so you can paste it. Also paste it from the .tex file, as some strange formatting happens in the pdf version and it doesn't work.

```
Invoke-WebRequest -Uri ‘
"https://download.mozilla.org/?product=firefox-msi-latest-ssl&os=
    ↪ win64&lang=en-US" ‘
-OutFile "$HOME\Desktop\firefox.msi"
```

This command saves firefox.msi to your desktop. Remember that you can download stuff from powershell. (But pls no proprietary browsers 🖙)
If the pdf messes up some part of the command, you can copy it from the latex file

5.3 Setting up the QEMU Agent

There are two steps. First, run the QEMU Agent installer. Second, add the VirtIO driver in the Device Manager.

Once you finish, the IP Address is visible from the “Summary” tab in proxmox. Very nice.

Figure 4: IP Address in Proxmox

5.3.1 Running the QEMU Agent Installer

“In the Windows VM, open the File Explorer and navigate to the VirtIO driver ISO. Open the “guest-agent” folder and double-click on the “qemu-ga-x86_64.msi” file to run the installer” -Bing

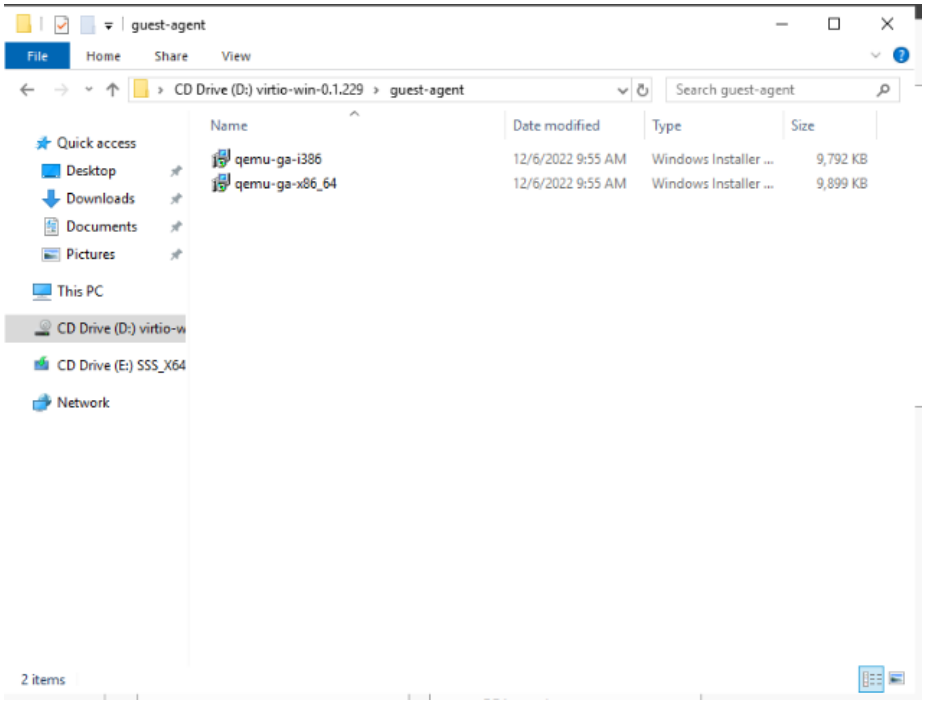

Figure 5: The MSI file to run

5.3.2 Adding VirtIO in Device Manager

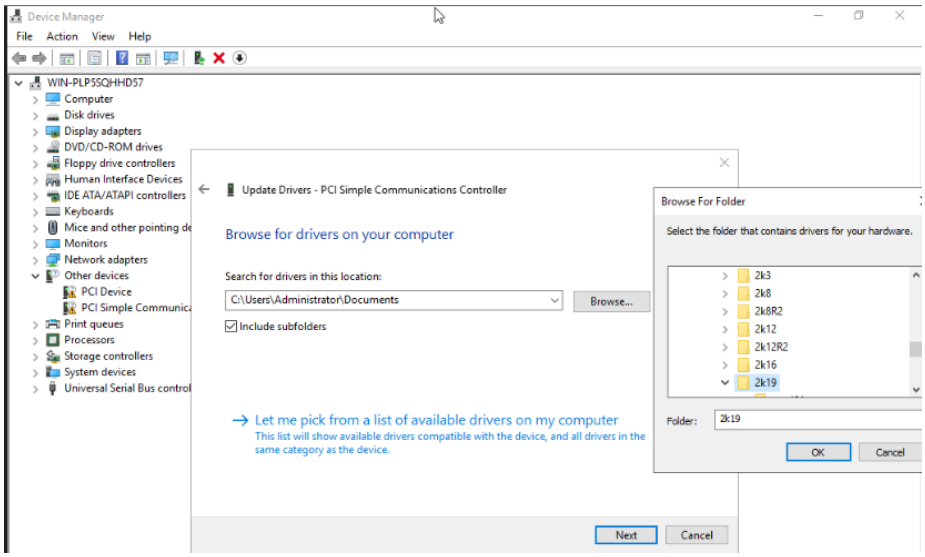

Figure 6: Selecting the 2k19 driver in the vioserial folder in the virtio CD drive.

5.4 Adding DNS Servers

5.5 Sysinternals

5.6 SIDCHG

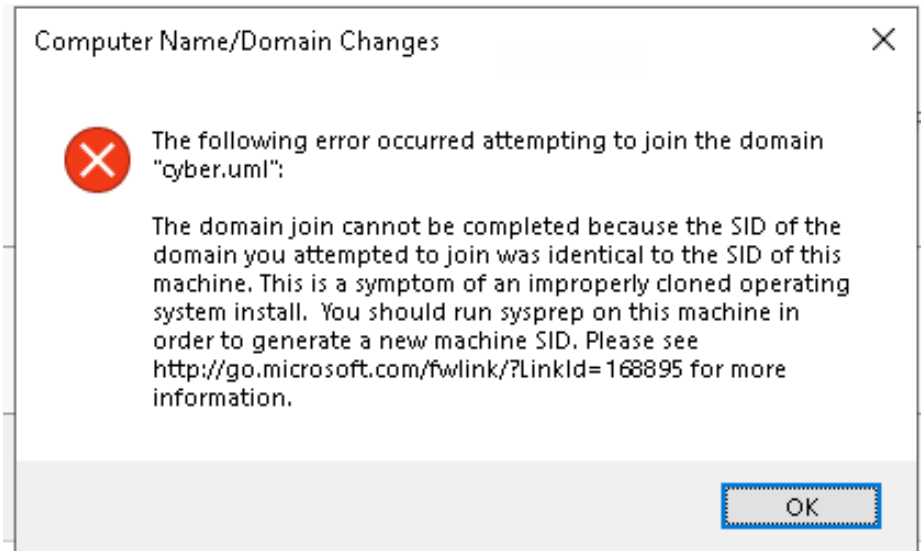

Figure 7: Two machines have the same SID

Cloning a template has issues because the SID (Security Identifier) of the cloned and original machines are the same. There are probably smarter ways to get around a non-unique SID (e.g. using)

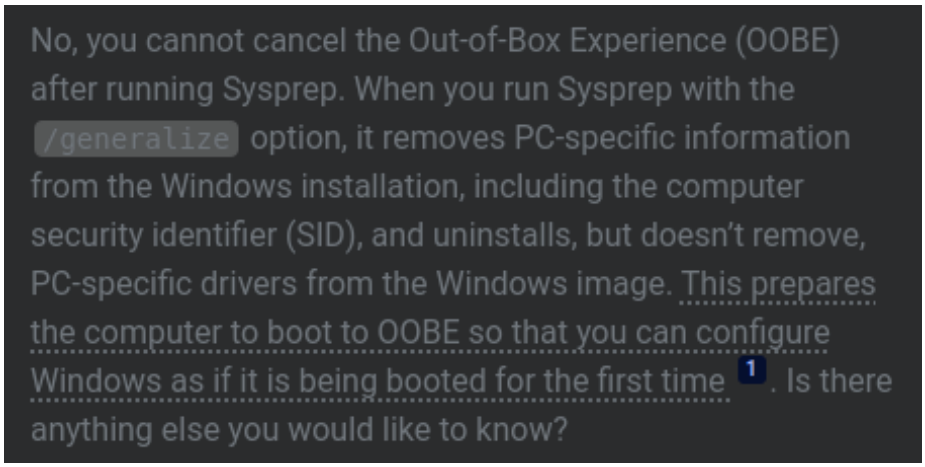

Figure 8: You cannot cancel Sysprep once you start it

Don't be like me. Don't run utilities you don't understand because bing told you to! If you run Sysprep, it will wipe your computer and you cannot get back into it. (or I probably just did it wrong...)
The program "SIDCHG" has worked for me. (SIDCHGL is easier as you don't have to disable your antivirus) It should be installed on the template machine as all of the cloned machines will need to change their SID.

Go to: stratesave.com/downloads and download the latest version of SIDCHG In addition, you will also need the guy's free trial key, found at stratesave.com/stupid_key

For more information, watch this tutorial

5.7 Making Clones

Now that your machine is set up with good defaults, it is time to clone it. Go to Proxmox and power off the machine. Then right click it and click "Create Template". Then right click the template and click "Clone". Make sure the Clone has Mode: Linked Clone set, so you can save a lot of file space (Windows bloat 👈).

If you get errors when creating VMs in proxmox, you can view the file /var/log/pve/tasks/index for information