

Proxmox VM Set Up

Install Files

To start, you'll need to download some files. The 2 files you need are the Server ISO and the VirtIO Driver. You can download the latest stable release at the link below:

- [Windows Server Evaluation ISO](#)
- [Windows VirtIO](#)
 - Download the latest stable release.

When configuring your VM use the following settings to ensure you're VM can boot correctly:

OS Configs

Create: Virtual Machine

General **OS** System Disks CPU Memory Network Confirm

☒ Use CD/DVD disc image file (iso)

Storage: local

ISO image: Windows_Server_2022_EVAL.is

Guest OS:

Type: Microsoft Windows

Version: 11/2022

☐ Use physical CD/DVD Drive

☐ Do not use any media

☐ Add additional drive for VirtIO drivers

Advanced ☒ Back Next

- Change your guest OS type to MS Windows and select the correct version

System Configs

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

Graphic card:

Default

SCSI Controller:

VirtIO SCSI

Machine:

q35

Qemu Agent:

☒

Firmware

BIOS:

OVMF (UEFI)

Add TPM:

☒

Add EFI Disk:

☒

TPM Storage:

zfs1

EFI Storage:

zfs1

Version:

v2.0

Format:

Raw disk image (raw)

Pre-Enroll keys:

☒

?

 Help

Advanced ☒

Back

Next

- Select q35 for Gen2, default is i440fx
- Change BIOS to OVMF(UEFI), default is SeaBIOS
- Change your SCSI Controller to VirtIO SCSI, default is VirtIO SCSI Single
- Check Qemu Agent

Disk Configs

Create: Virtual Machine

GeneralOSSystemDisksCPUMemoryNetworkConfirm

virtio0

DiskBandwidth

Bus/Device:VirtIO Block0

Storage:local-zfs

Disk size (GiB):32

Format:Raw disk image (raw)

SSD emulation:☐

Read-only:☐

Cache:Write back

Discard:☐

IO thread:☒

Backup:☒

Skip replication:☐

Async IO:Default (io_uring)

Add

Help

Advanced☒

Back

Next

- Change your BUS/Device to VirtIO Block, default is IDE
- Change cache to Write Back, default is No Cache

CPU Configs

Create: Virtual Machine

General
OS
System
Disks
CPU
Memory
Network
Confirm

Sockets:
1

Cores:
24

Type:
host

Total cores:
24

VCPUs:
24

CPU limit:
unlimited

CPU Affinity:
All Cores

CPU units:
100

Enable NUMA:
☐

Extra CPU Flags:

| | | | |
|---------|--|-----------|---|
| Default | - <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> + | md-clear | Required to let the guest OS know if MDS is mitigated correctly |
| Default | - <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> + | pcid | Meltdown fix cost reduction on Westmere, Sandy-, and IvyBridge Intel CPUs |
| Default | - <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> + | spec-ctrl | Allows improved Spectre mitigation with Intel CPUs |
| Default | - <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> + | ssbd | Protection for "Speculative Store Bypass" for Intel models |
| Default | - <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> + | ibpb | Allows improved Spectre mitigation with AMD CPUs |
| Default | - <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> + | virt-ssbd | Basis for "Speculative Store Bypass" protection for AMD models |

? Help
Advanced ☒
Back
Next

- Change type to Host, default is x86-64-v2-AES

Memory Configs

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

Memory (MiB):

32786

Minimum memory (MiB):

4096

Shares:

Default (1000)

Ballooning Device:

☒

Help

Advanced ☒

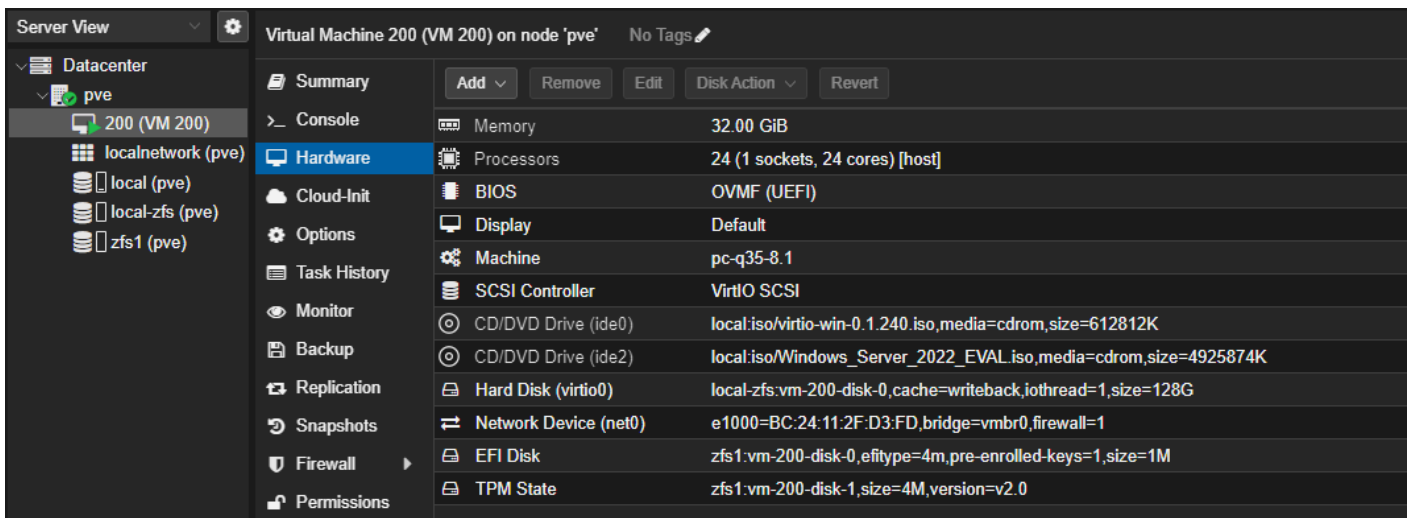
Back

Next

- Make sure Ballooning Device is enabled so RAM that isn't being used can be freed

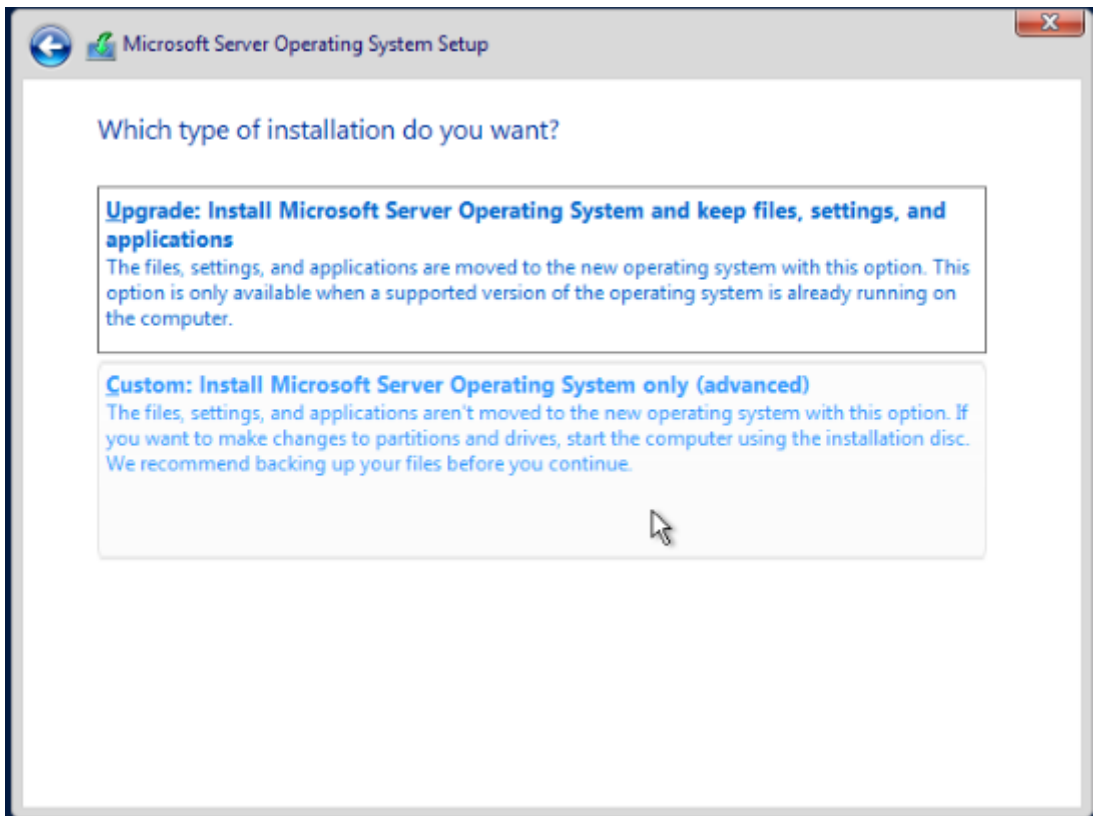
VM Hardware

Once created, select your VM and navigate to the hardware section. Select Add, and add CD/DVD device. Here, you'll add the VirtIO driver. I've already added it, so you'll see 2 CD/DVD Drives.

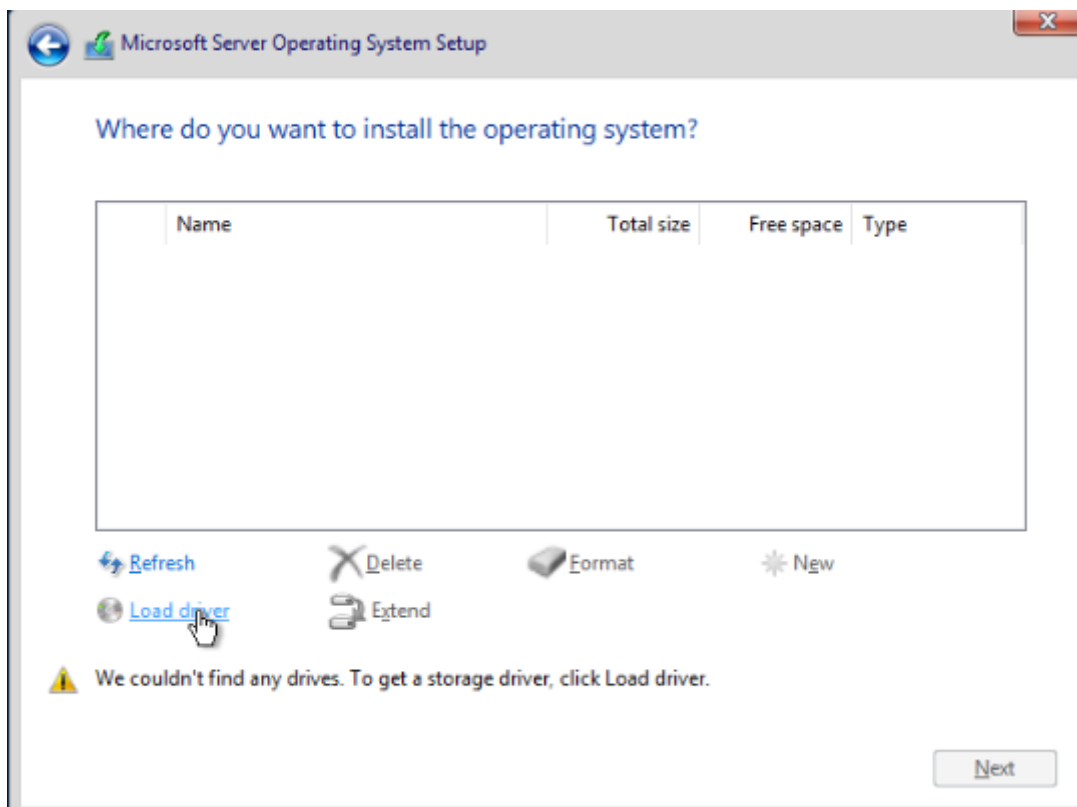


Installation

Start your VM to begin installation and navigate into the console section of your VM. Select defaults as desired. Once the installer reaches installation type, select Custom:



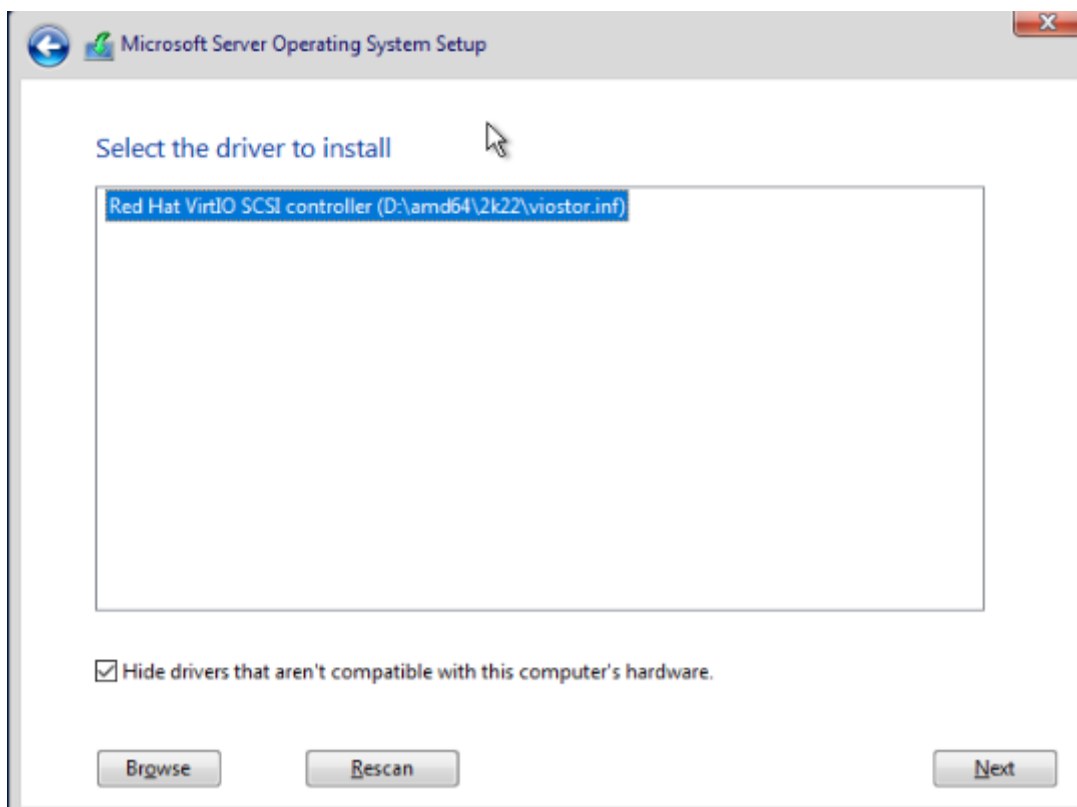
Here, you'll load the VirtIO driver:



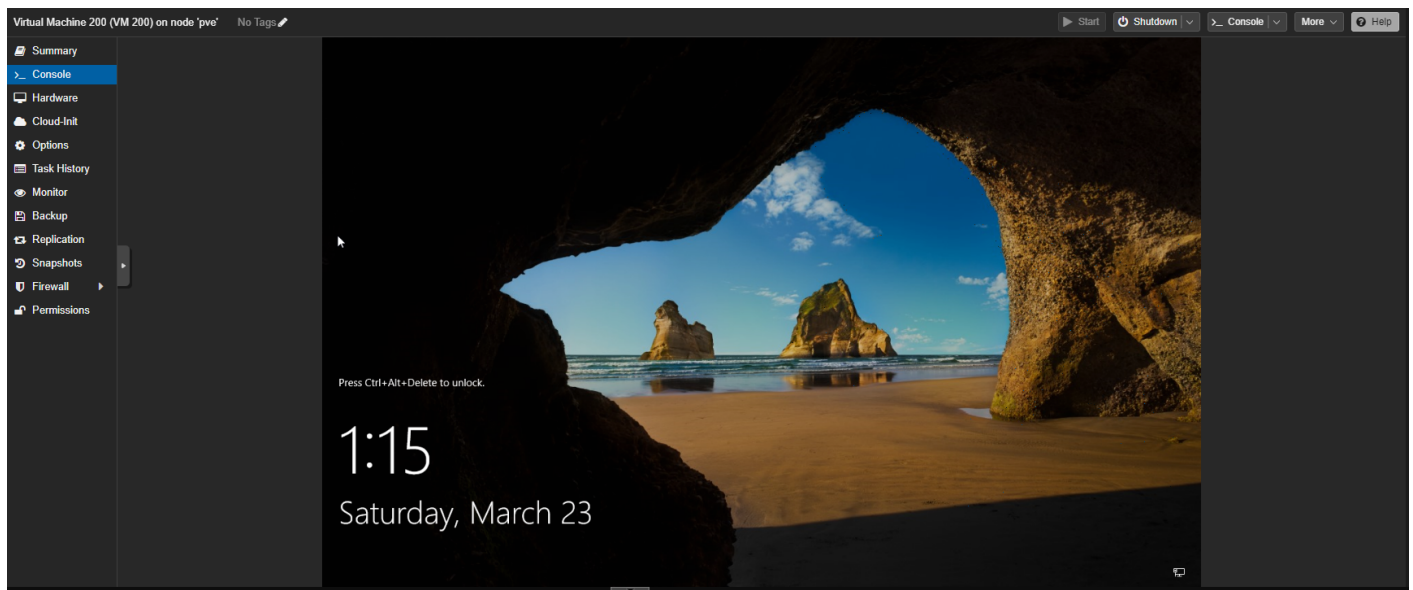
Select Browse, then select the following:

- CD Drive (D:) virtio-win-X.X.XXX ---> amd64 ---> 2k22

Select the Red Hat VirtIO SCSI Controller, then click next:



Once installed, it will ask you what disk you'd like to use. Select the Disk and then continue the install. Once the device reboots, you'll be prompted to enter an admin password, then you should arrive at the following screen:

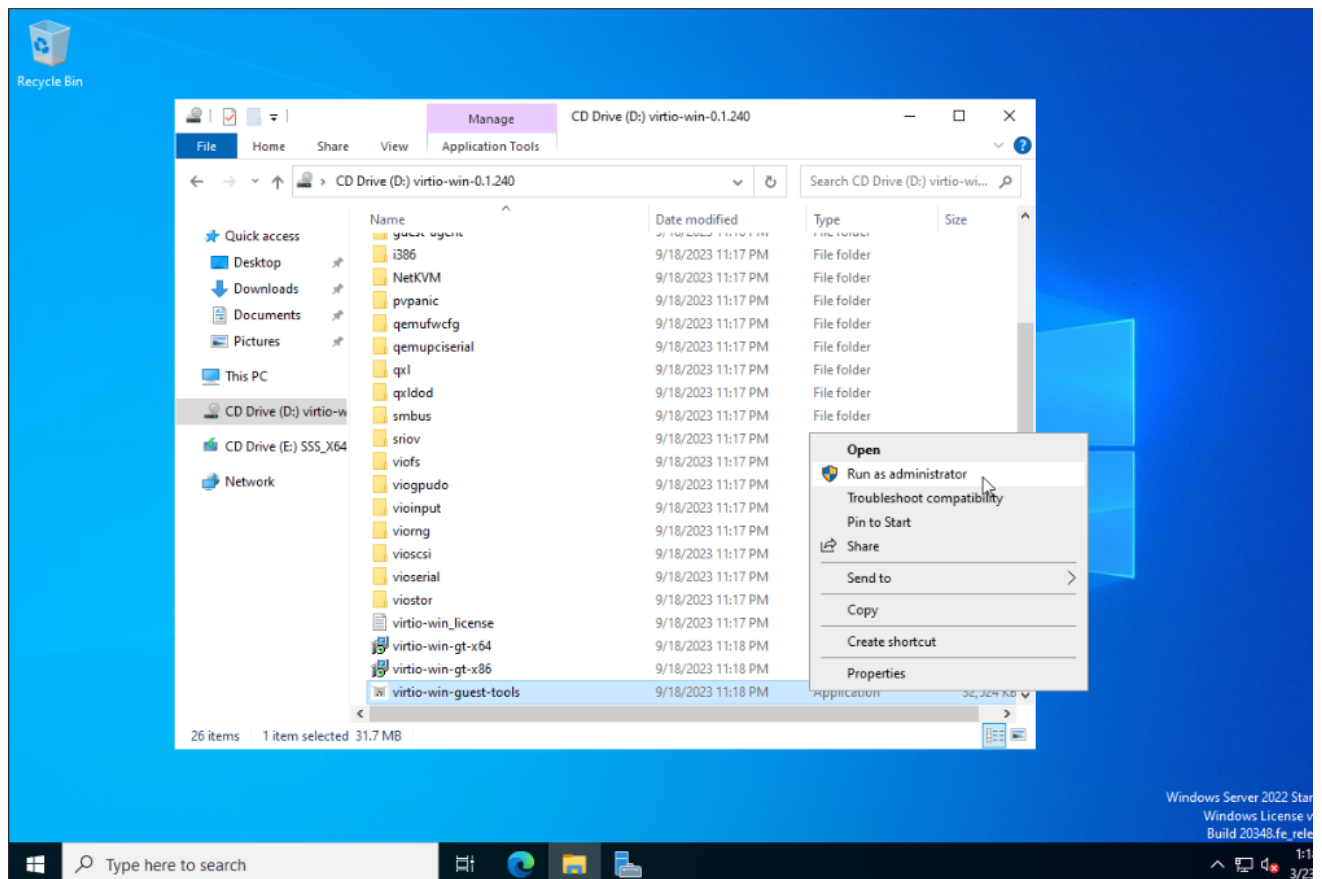


Final Steps

The last thing you'll need to do is install the VirtIO win-guest tools and then remove boot drives attached to the VM to ensure proper installation.

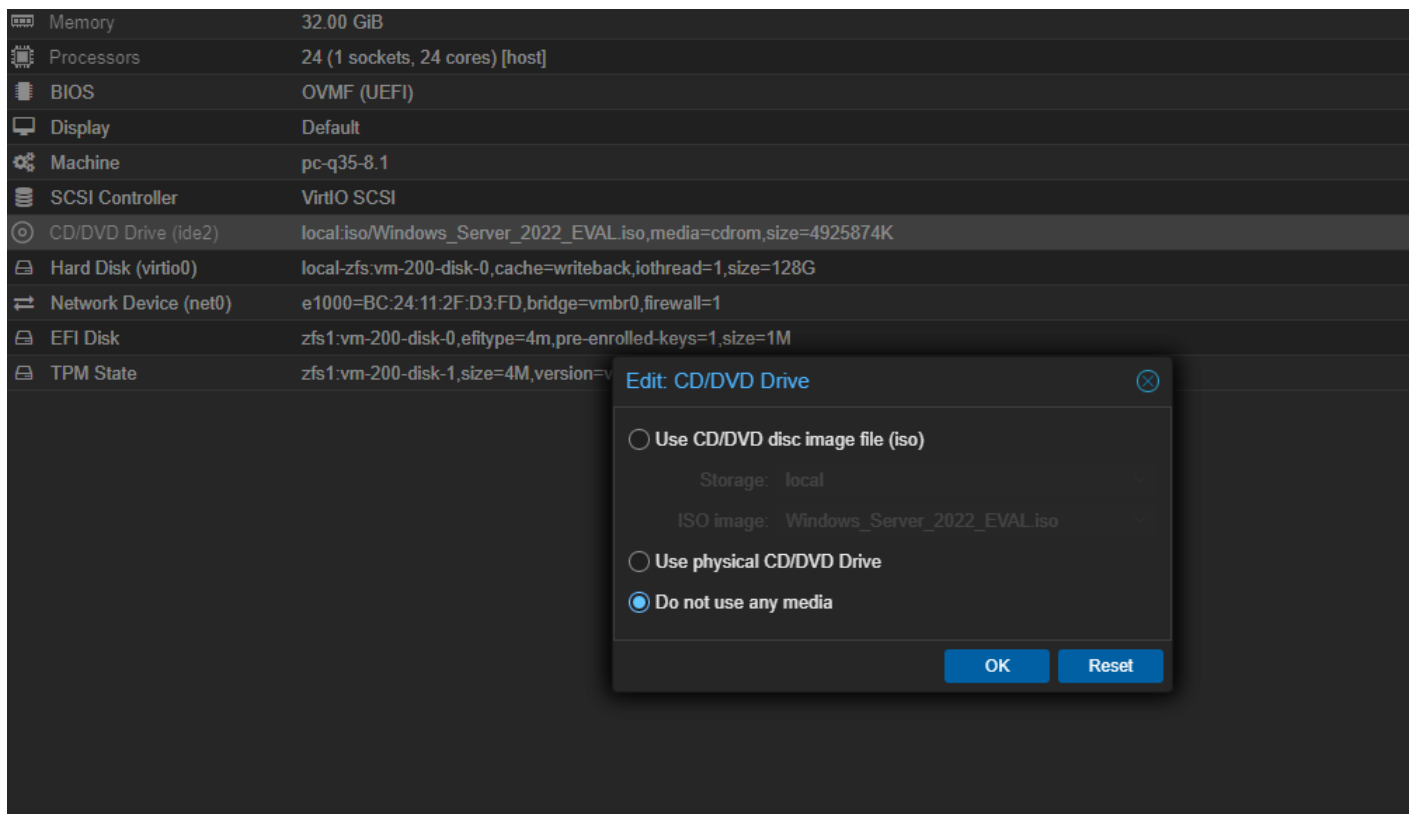
- Launch the virtio-win-guest-tools application as administrator by navigating as follows:
 - File Explorer --> CD Drive (D:) --> virtio-win-guest-tools

○

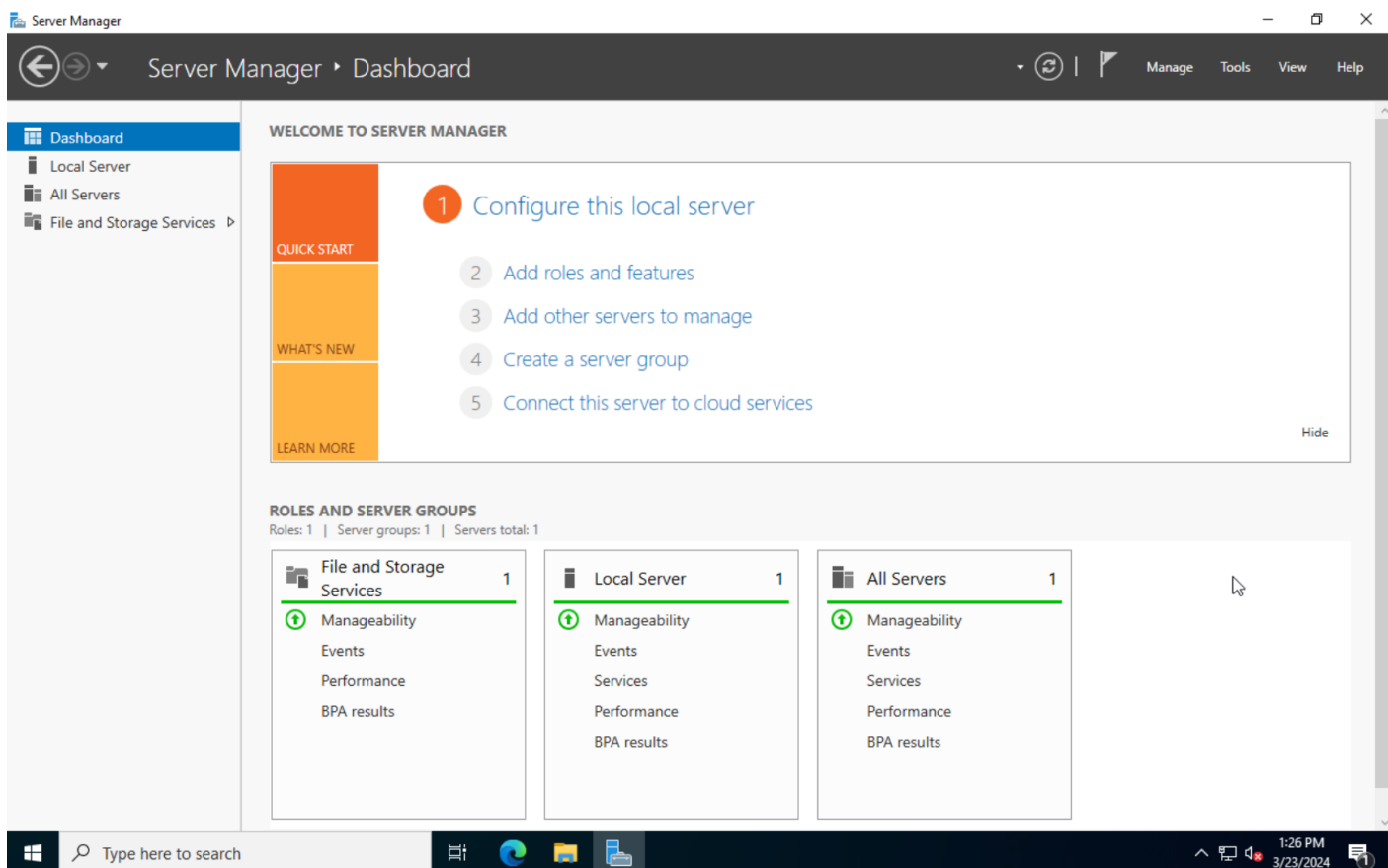


- Select defaults for installer, then close out and power off VM.

Next, remove the CD Drive for VirtIO from the Hardware section of your VM in Proxmox, and then configure the Server ISO CD/Drive to "Do not use any media":



Your installation of Windows Server is now complete!



Revision #3

Created 23 March 2024 19:47:19 by Austin

Updated 26 March 2024 20:39:50 by Austin