Compare VirtualBox, VMWare and Hyper-V

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Choosing between VirtualBox, VMware Workstation Player, and Windows 10 with Hyper-V integration is difficult. The following article compares the similarities between these 3 virtual machine tools and advises which tool you should use for certain tasks.

Is VirtualBox, VMWare or Hyper-V the best virtual machine option?

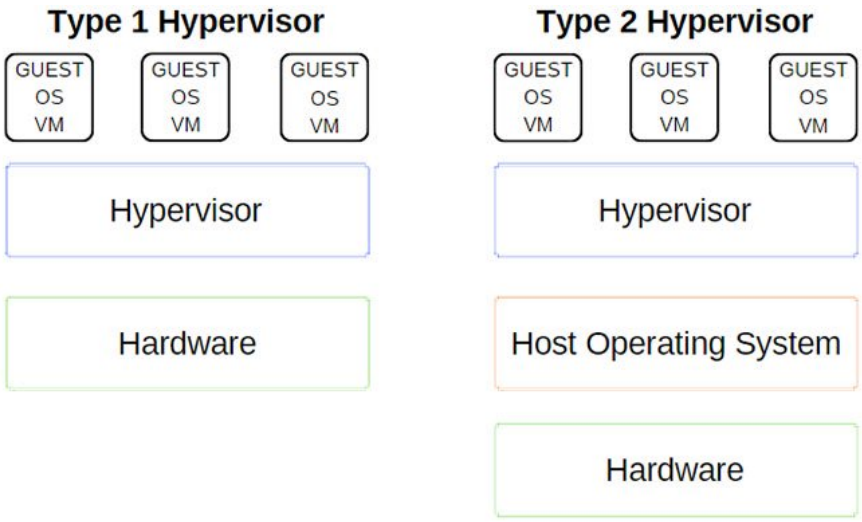
What is a hypervisor?

Let's start with the big question: What are the differences between VirtualBox, VMware Workstation Player and Hyper-V on Windows 10? It all allows you to run a virtual environment on your server, right?

The answer is right. But behind that similarity, these virtual machine tools behave differently. That's because virtual machines depend on two different types of software called hypervisor to install and run.

The hypervisor acts as a platform for virtual machines. It provides the necessary division between virtual machine operating system and server hardware. The server can share its resources, such as memory and processing power, between multiple workloads.

There are two types of hypervisor: Type 1 and Type 2.



Hypervisor Type 1

A Type 1 hypervisor runs directly on the server hardware and is sometimes called a bare-metal hypervisor.

Microsoft Hyper-V is a prime example of Type 1 hypervisor. It requires no additional installation through external packages and directly manages the guest operating system.

VMWare ESX and vSphere, Citrix XenServer and Oracle VM are all Type 1 hypervisors.

Hypervisor Type 2

A Type 2 hypervisor installed on the operating system, like any other software, is called a hosted hypervisor.

The virtual machine environment runs as a process on the server and still shares the system hardware, but managing the virtual machines moves over to the server instead of issuing direct instructions. The consequence of this arrangement is a slight lag between actions.

VirtualBox, VMware Workstation and VMware Workstation Player are good examples of Type 2 hypervisor.

What is the difference between VirtualBox, VMware Workstation Player and Hyper-V?

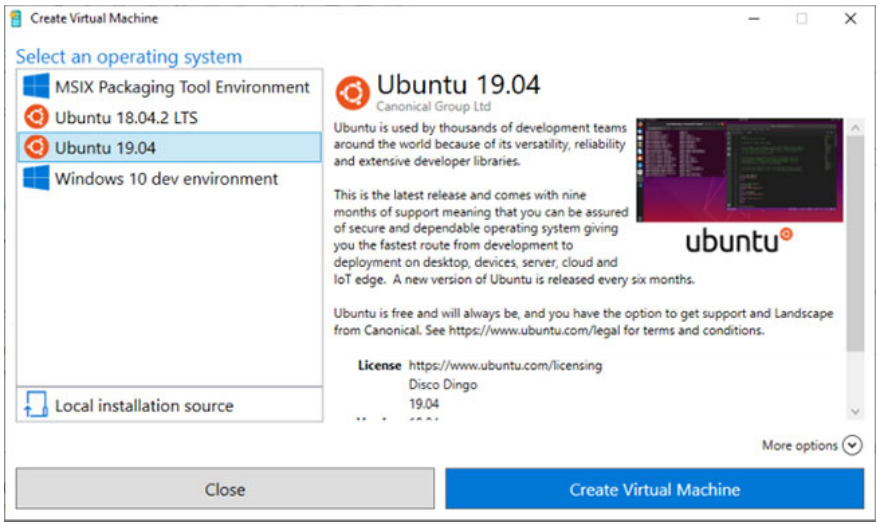
Now that you know the differences between hypervisor types, it's easier to understand the limitations and positives of each option.

Ease of use

Hyper-V is integrated with Windows 10 Pro, Education and Enterprise, but not on Windows 10 Home. You must enable Hyper-V with the Windows feature or the PowerShell command.

Once enabled, Hyper-V provides a fast virtual machine creation option and a more extensive virtual machine creation option through Hyper-V Manager.

Creating a virtual machine through each Hyper-V option is easy. However, the option to create a fast virtual machine that automatically fills in the settings may cause problems or errors when starting up the virtual machine. Hyper-V's more extensive custom VM creation option allows greater control over settings.



Both VirtualBox and VMware Workstation Player have a wizard for creating virtual machines. The wizard on each program guides you through the process of creating a virtual machine. However, they are different.

For example, the VirtualBox wizard allows you to create a basic virtual machine to edit settings later, but it provides some recommended values ??for specific types of virtual machines. This is how you set up and use VirtualBox.

Meanwhile, the VMware Workstation Player wizard allows you to customize the settings during the creation of the virtual machine.

The difference is not much, but that means that the VMware Workstation Player virtual machine is ready to run after completing the wizard, instead of having to change more settings after it is completed.

Efficiency

The performance of a virtual machine is related to the hardware you use to run it. With virtualization, hardware plays the ultimate role. Moreover, the virtual machine you use makes a huge difference.

For example, I tested each virtual machine option using Lubuntu guest operating system on the desktop, owned Intel i5-3570K, 16GB RAM and Nvidia GTX 1070. This is not the most powerful CPU, but it handles almost everything.

Put simply, VirtualBox is one of the slowest virtual machine options available. If you have good hardware, you will not find anything strange. But on a low-power machine, VirtualBox does not allow the best virtualization

experience.

The lack of performance is most noticeable when you switch to VMware Workstation Player. Running the same guest operating system on the same hardware suggests VMware Workstation Player is a smoother experience.

Lubuntu's Hyper-V installation works well and is very smooth. It is important to note that some Windows 10 Hyper-V users report performance issues in other areas, when they activate Hyper-V on the system.

Because Hyper-V runs at the BIOS level rather than software in the operating system, virtualization is always enabled, even when you are not using the virtual machine.

Temporarily turn off and on Hyper-V virtualization

If you feel that Windows 10 Hyper-V is affecting gaming performance, you can use the command to turn off the Hyper-V virtualization service.

Enter the command in **the Start menu** search bar and select **Run as Administrator** . Then enter the following command:

```
bcdedit /set hypervisorlaunchtype off
```

Next, reboot the system. Hyper-V virtualization will not start after reboot and you should see your performance return to normal. If you want to re-enable Hyper-V virtualization, use the following command:

```
bcdedit /set hypervisorlaunchtype on
```

Reboot the system again.

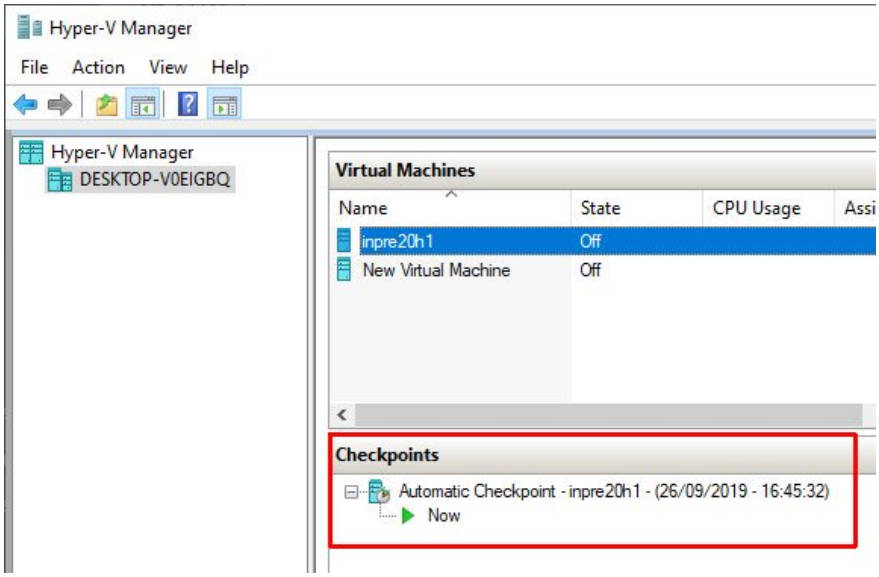
Function

If you're not sure which of the three options to choose, consider the functionality of each of these virtual machines. You can run a guest operating system using VirtualBox, VMware Workstation Player or Hyper-V, but each virtualizer has its own characteristics.

Snapshots and Checkpoints

A big plus for VirtualBox and Hyper-V are Snapshots and Checkpoints.

Although each platform uses different names, Snapshots and Checkpoints are very similar tools. They allow you to take virtual machine 'images' in their current state. Image preserves the virtual machine, allowing you to go back to that time.



Unfortunately, VMware Workstation Player does not support Snapshots or Checkpoints. You can temporarily suspend the guest operating system to continue from a specific point, but it's not like creating image history for a virtual machine.

File sharing

Each hypervisor allows you to drag and drop files between the server and the guest operating system. You can also enable shared files and folders, although Windows 10 Hyper-V makes the process much more complicated than VirtualBox or VMware Workstation Player.

Seamless mode (seamless)

Both VirtualBox and VMware Workstation Player use Seamless mode to integrate the virtual machine environment into the host operating system. Seamless mode eliminates additional virtual machine windows and menus, making it feel as if the guest operating system is part of the server.

Unfortunately, Windows 10 Hyper-V does not have Seamless mode.

Encrypt virtual machine

If you want to encrypt your virtual machines, congratulations, you're in luck. Each hypervisor supports encryption of one type or another.

VMware Workstation Player has built-in support for virtual machine encryption. VirtualBox supports encryption with the installation of VirtualBox Guest Additions, available for each VirtualBox guest environment. Hyper-V on Windows 10 supports encryption with Microsoft's BitLocker.

Each option is secure and works well with the respective platform.

Price

Each hypervisor is free, but there is a difference. VirtualBox and VMware Workstation Player are free for all users. As long as your hardware can run the guest operating system without destroying the server in progress, you can use free virtual machine software.

Meanwhile, Windows 10 Hyper-V is also free, but only if you have the correct version of Windows 10.

There is a workaround for Windows 10 Home users who want to use Hyper-V on their hardware. But those people can also use one of the other free alternatives.

Don't forget, the fix may work now, but it's likely not true anymore with the next Windows 10 update.

Guest operating system

Windows 10 Hyper-V has some restrictions regarding guest operating systems. Hyper-V supports Windows, Linux and FreeBSD virtual machines, but does not support macOS.

VirtualBox and VMware Workstation Player support almost all guest operating systems, including macOS.

Please note that a macOS guest operating system will not work immediately. Follow **TipsMake.com** 's guide on how to install macOS in VirtualBox or VMware Workstation Player on Windows 10.

What is the best virtual machine tool on Windows 10?

Choosing between VirtualBox, VMware Workstation Player and Windows 10 Hyper-V is very difficult. If you have a powerful computer running Windows 10 Pro, Education or Enterprise, you can choose hypervisors.

If you are running a system that is not very powerful, you should use VMware Workstation Player. VMware Workstation Player provides better support and stability for a wide range of hardware. If you are still not sure whether you need a virtual machine, first learn about the virtual machine or refer to the separate comparison between VirtualBox and VMware.