

What is a virtual machine? What are the uses of virtual machines on a computer?

The use of virtual machines is essential for individuals and companies working in programming and information technology. Virtual machine features include virus scanning, enhanced server security, and software testing.

A **virtual machine** is software that runs on an operating system and allows **the creation of different computer environments** by building a virtual hardware system and installing guest operating systems on it. These operating systems function as if they were separate physical systems, using the resources of the real computer and operating completely independently of the real computer system.



What is a virtual machine? What are its uses?

For this reason, virtual machines are frequently used to create various environments for software testing, running compatible software that a real machine cannot handle, testing newly released operating systems, or checking for viruses. These testing actions, if performed directly on a real machine, would cause various errors and damage both hardware and software. However, with a **virtual machine**, you only need to **reset** the state, and the computer will return to its original state.

Some uses of virtual machines



Software and operating system testing

Due to the virtualization nature of virtual machines, you can install many software programs or operating systems simultaneously on your computer, as long as your hardware can handle the demand. You can install multiple versions of the operating system on the same computer, install a test software program on multiple operating system environments to find bugs, or use software that requires older systems like Windows XP or other platforms like MAC OS X and Linux.

After use, with just a few steps, you can restore the virtual machine to its original state, thereby avoiding any impact on your real computer system.

Enhance server security.

For system administrators, virtual machines are used to manage servers, with each server placed in a separate virtual machine to ensure isolation during operation. This isolation prevents the system from facing security risks and errors that can occur when running on a physical machine, such as hardware conflicts or virus infections.

Virus check

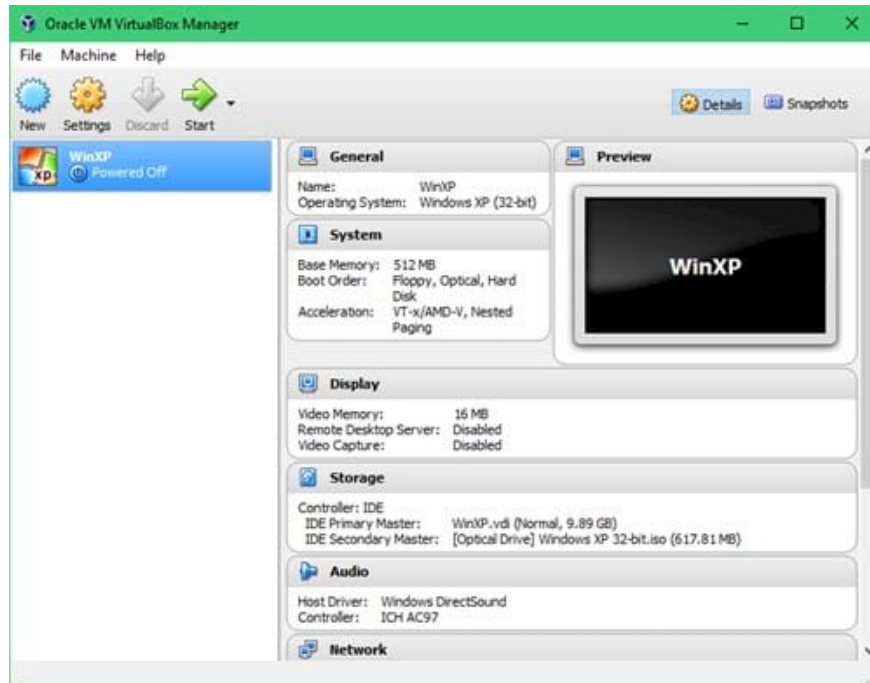
This is also one of the very important functions of virtual machines. For those working in the security field, they frequently have to access and handle new virus samples. Dealing with viruses on a physical machine is extremely dangerous because not all computers are optimally protected, and the effects of viruses can directly impact the computer's operation. Therefore, virus samples that need analysis are placed in a virtual machine running in an isolated environment to test for viruses, avoiding impact on the physical system.

Some common virtual machines

VirtualBox

VirtualBox is the world's most popular free virtual machine, offering all the functionality of a complete virtual machine system. VirtualBox allows users to create different operating systems and virtual hardware systems in just a few steps with an intuitive and easy-to-use interface. The most notable feature of VirtualBox is that it doesn't consume excessive resources on the physical computer and is provided completely free of charge with

full functionality.



VMWare

VMWare Player is a very popular virtual machine program on both Windows and Linux. VMWare provides a full range of features, from basic to advanced, that a virtual machine needs, suitable for advanced users who require more from a virtual machine program. VMWare Player is the free version of VMWare Station, therefore VMWare will not have many of the same features as VirtualBox.



Above is some information about virtual machines and their applications for users. Hopefully, through this article, you can apply the technologies that virtual machines offer to better serve your work. You can also **create a virtual machine on a USB drive** with VirtualBox with a few simple steps for more convenient use.

Virtual machines are widely used by people working in information technology and programming. They have many functions and are commonly used for software testing and creating different computer environments. Above, Taimienphi has introduced you to some concepts about virtual machines and how to use them effectively.

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