

Virtual PC 2004 or VMware Workstation 4.5?

VMware Workstation and Virtual PC are two familiar virtual machine creation software but for easy selection, you need to find similarities, differences, strengths and weaknesses between them.

VMware Workstation and Virtual PC are two familiar virtual machine creation software but for easy selection, you need to find similarities, differences, strengths and weaknesses between them.

Introduce

A virtual machine is certainly not a universal 'game' and is not suitable for users who do not need to run multiple operating systems on one machine and are afraid of risk.

Picture 1 of Virtual PC 2004 or VMware Workstation 4.5?

Three virtual machines run 3 different operating systems

So who is the virtual machine suitable for? Suppose you are a programmer, you want to test your program in many different environments. In the traditional way, you must install all tested environments and only try it on one environment at a time. Every time you want to check, you must turn off the operating system and boot the operating system. Quite a bit and take time! This work will be much simpler if you install a software to create a virtual machine and have several virtual operating systems on the server. In this case, you can easily switch between virtual operating systems with just one or two clicks.

Even if you're not a programmer, you probably need a virtual machine. For example, your OS is Windows XP and you need to run a program that only works on Linux or BeOS. Or suppose, after upgrading to Windows XP, you discovered that one of your favorite games cannot work in the new OS.

For more information about virtual machines and OS installation on virtual machines, you can refer to the article "Installing multiple operating systems on virtual machines" posted on TGVT A 6/2002.

Currently, there are two virtual machine creation software popularly used by users, VMware Workstation of VMware and Virtual PC from Microsoft. VMware Workstation has versions running on Windows or Linux servers. Virtual PC currently only supports server-based installation from Windows 2000 and above. However, both software allow installing many different operating systems on virtual machines. Even though there are some differences with specific characteristics, both of these software operate quite effectively, meeting the requirements of users.

It is also worth mentioning that Virtual PC, formerly owned by Connectix, was acquired by Microsoft in early 2003. Connectix is very popular with Virtual PC 5.0, which supports both Windows and Linux servers, but

when purchasing this software. From Connectix, Microsoft just released a new version of Virtual PC that supports Windows 2000 and above servers.

In this article, we tested the performance of Microsoft Virtual PC 2004 (abbreviated as VPC) and VMware Workstation 4.5 (VMW) on the server (PC) running Windows XP Professional OS. Both of these software are commercial software and their prices are very high. Microsoft VPC (18.9 MB) has an expected price of 129 USD; VMW 4.5 (33.3 MB - version for Windows) costs 510 USD. Luckily, however, both of these software allow for full-featured trial: 45 days for VPC and 30 days for VMW. If only the demand for testing is stopped, this time is satisfactory. You sign up for a trial and download the software from the websites of two Microsoft firms (<http://www.microsoft.com/windowsxp/virtualpc/>) and VMware (<http://www.vmware.com/>).

overview

Both VMW and VPC have similar operating mechanisms but each software has its own strengths and weaknesses. In general, VMW is faster, supports better graphics, but takes more CPU than VPC. In contrast, VPC is more user-friendly and friendly. On VPC, all client operating systems and related applications are installed quickly and easily. Although in the introduction, Microsoft only names the Windows family operating systems that are supported on VPC virtual machines, but in fact VPC 2004 still supports other operating systems like Linux or OS / 2. In VPC 2004, all non-Windows operating systems are called 'Other'.

In our opinion, the way VPC emulates hardware is simple but quite effective. For example, this software simulates the host PC's video card as S3 Trio 32/64 and the sound card is Sound Blaster 16. This makes it easy to install guest operating systems on the virtual machine as well as later. Much easier because you can find drivers for common devices easily. VMW's solution to this problem is to provide a separate device driver, without simulating as VPC. Normally, after completing the client OS installation, this software will ask you to run VMware Tools (additional toolkit) to optimize many different components, including graphical controls.

Experiment

Microsoft virtual PC 2004

In general, VPC is very stable and the installation of client operating systems on the virtual machine is very simple. Even installing client operating systems on a virtual machine is as easy as installing a regular application on Windows. Before you start, you need to note how to use some of the following key combinations (by default):

- **Alt (right key) + Enter:** run the client operating system in full screen mode or window mode.
- **Alt (right key):** transfer control to the host operating system (while at the OS)

Picture 2 of Virtual PC 2004 or VMware Workstation 4.5?

Video cards and sound cards on virtual machines running Windows 98

When you run VPC for the first time, the program will ask you a series of questions related to the OS you need to install and the related configuration. You can increase or decrease the memory capacity for each virtual machine. VPC allows you to shorten the operating system installation time if you have a Ghost backup of the OS.

We installed 3 guest operating systems, Windows 98, Vietkey Linux 3.0 and Mandrake 9.0 on 3 different virtual machines in the traditional way (install 'clean' from CD). Of course, the three systems emulated on three virtual machines are not as powerful as the host PC, but we feel quite comfortable running basic applications on these virtual machines.

In terms of sound, it can be said that VPC has emulated sound systems very well on Windows systems. We had no problems with the hardware that emulates SoundBlaster 16 or AWE-32 or compatible on Windows 98 systems. However, Vietkey Linux 3.0 and Mandrake 9.0 cannot recognize the sound card.

As for the screen and graphics card, Windows 98 has no problem. After installing Virtual Machine Additions, the operating system's graphics speed and capacity are significantly improved. However, these devices are not well emulated by VPC in Linux family operating systems. While Vietkey Linux receives a PC screen (Samsung Syncmaster 450Nb) and a video card as 'S3 Trio 64' in general, Mandrake cannot set up the screen and graphics card to display it well. We had to configure these devices manually. Because Virtual Machine Additions can only be installed on Windows client operating systems, Linux operating systems do not take advantage of the support features that this add-on brings.

Picture 3 of Virtual PC 2004 or VMware Workstation 4.5?

Surf the web from Mandrake virtual machine

VPC provides 2 network connection methods: Shared Networking with Network Address Translation and Local Only. In it, Shared Networking is a method suitable for ordinary users and relatively easy to configure. You can easily configure to connect to the Internet or LAN from the main client running Windows or Linux OS. If you use Shared Networking, you only need to connect to the Internet from the host PC and then open a browser on the guest OS and comfortably 'surf' the web.

VPC supports good cut-and-paste and drag-drop between servers and Windows clients, provided you have to install Virtual Machine Additions. To get these features, go to the PC menu of the Windows OS client and select 'Install or Update Virtual Machine Additions', then go to the client to begin the installation process. VPC 2004 does not support cut-and-paste and drag-drop between server and client running Linux operating systems. Using Shared Folders only works fine in Windows environments that are not possible between virtual machines running Linux operating systems and servers running Windows XP. You should also note, if you turn off (shut down) the OS on the client from the VPC menu, it is considered that you have unplugged the computer. Consequently, the next time the OS starts, the OS will have to check disk errors for a long time. In our opinion, you can select 'Action - Close - Save state' mode or turn off the OS from the right in the guest operating system.

You can grant or remove the right to use a CD drive or floppy drive for the guest OS on the virtual machine by clicking the 'CD' or 'floppy' menu. When the guest operating system uses a CD drive or floppy disk, the OS will not recognize these two drives and vice versa.

Picture 4 of Virtual PC 2004 or VMware Workstation 4.5?

Undo Disks of VPC

VPC provides an interesting feature, which is 'Undo Disks'. This feature works similar to 'System Restore' of Windows ME, XP. When 'Undo Disks' is enabled, a separate 'undo' file will be created to record any changes to the virtual hard disk, so that you can return to a safe location when the system Virtual problems.

You can access most of the features mentioned above on the main menu of VPC. Alternatively, you can use the VPC toolbar at the bottom of the program window. This toolbar shows the status of virtual hard drives, CD drives, floppy drives, shared folders or virtual LANs. This toolbar will be hidden if you set the full screen mode to the virtual machine.

In general, you cannot ask a virtual machine to run as fast as a real machine. In many cases, the speed on the virtual machine is only half the speed on the server. However, we have tried to run some applications on virtual machines VPC and found that they all work well, meeting the basic requirements. In our test, applications running on Windows 98 proved the fastest and most stable. And applications on virtual machines Vietkey Linux 3.0 run the slowest.

VMWare Workstation 4.5

VMW installation is very simple, and configuration does not require users to have a lot of experience. In general, you should follow VMW's suggestions.

By default, the size of the partition that VMW needs for each virtual machine is 4GB. You can also change the amount of RAM for the virtual machine to increase or decrease the operating system performance on the virtual machine. VMware has sold disk images of operating systems to install on virtual machines. If you have these disk images, just copy them to the virtual partitions you just created and can use them immediately. However, the way to install the OS on a virtual machine is still more common.

To get started, you should note some of the following shortcut keys (by default):

- **Ctrl + Alt + Enter:** run guest operating system in full screen or window mode.
- **Ctrl + Alt:** transfer control to the host operating system (while at the OS)

As with VPC, we install Windows 98, Vietkey Linux 3.0 and Mandrake Linux 9.0 on a Windows XP Professional server. The process of installing all three operating systems from the boot CD is smooth, without any problems.

Picture 5 of Virtual PC 2004 or VMware Workstation 4.5?

Sound card and video card in Mandrake

Unlike VPC, VMW provides a separate graphics driver. When you finish installing a guest operating system (such as Windows 98), you only have 640 x 480 resolution with 16 colors. The VMW will always display a message that you have not installed the graphics driver for the guest operating system. VMware calls this driver 'VMware Tools'. For Windows 98, after installing VMware Tools you will have 16 or more color bits and a resolution higher than 640 x 480. In the case of Vietkey Linux 3.0 and Mandrake Linux 9.0, the graphics capabilities are excellent. when you do not need to install VMware Tools to enhance graphics capabilities.

As for the audio hardware emulation, unlike VPC, VMW does not do this well for Windows 98. This OS does not recognize the sound card itself while the two Linux operating systems do this very well. We realize that VMW has been quite astute in providing its own graphics driver, independent of any specific hardware. However, with sound, it seems that this virtual machine software seems to favor Linux operating systems more.

While VPC does not yet support USB ports from clients, VMW supports USB port emulation. All three operating systems recognize and accept devices attached to virtual machines through this port.

Regarding the intranet, VMW provides up to 4 connection methods: 'Bridged Connection', 'Network Address Translation', 'Host Only' and 'Custom'. 'Bridged Connection' allows a virtual machine to directly connect to a LAN or Internet. 'Network Address Translation' allows virtual machines to connect to the network by sharing the server's IP address. 'Host Only' creates a private network in which the server is treated as a separate computer. With 'Custom', you can create a virtual network according to specific requirements. We use the 'Network Address Translation' method and realize that the network connection does not encounter any difficulties in both Windows and Linux environments.

VPC requires two program windows: one for managing virtual machines, one for each virtual machine. In contrast, VMW includes both of these windows as one. However, VPC provides a menu of VMW's simpler program window. Both software allow to perform all detailed configuration operations via the main menu, but you can also directly perform a number of settings through the icons in the bottom status bar.

Picture 6 of Virtual PC 2004 or VMware Workstation 4.5?

USB port support

Similar to VPC, cut-and-paste or drag-drop between server and client works very well in Windows environment but not in Linux environment. You can also use 'Shared Folder' to share files between the client and the server, but this feature is not supported in some guest operating systems (for example, Windows 98). Besides, using 'Shared Folder' also depends on the host operating system: you cannot share files without the permission of the OS. While VPC offers the option to allow you to grant or remove the right to use a CD drive or floppy drive for an OS on a virtual machine, VMW defaults to the client operating system to take control of these devices from the host OS. Of course, when the client operating system uses a CD drive or a floppy disk, the OS will not recognize these two drives and vice versa.

Just like at VPC, you should also note that if you turn off (shut down) the OS on the client from the VMW menu or icon, it is considered that you have turned off the computer's power. In our opinion, you can choose the 'Power - Suspend' mode (similar to Hibernate of Windows XP) or off from the right in the guest operating system.

In general, applications on VMW virtual machines run quite well, meeting the basic requirements of users. But just like with VPC, don't expect VMW virtual machines to have the speed to handle tasks as fast as servers.

Conclude

Although there are specific advantages and disadvantages, in general, both VPC and VMW perform quite well. In general, if you need a reliable virtual machine creation software and good support for Windows operating

systems, VPC is the number one choice. If you like speed, flexibility and full support of Linux, VMW deserves the first choice.

The above are the basic tests but not yet comprehensive about the two software for creating virtual machines of Microsoft Virtual PC 2004 and VMware Workstation 4.5 of VMware. Hopefully the conclusions we draw can help you somewhat in choosing a virtual machine creation software that fits your work requirements.

Nguyen Viet Khoa
Hanoi Polytechnic University

CONFIGURATION REQUIREMENTS

To install VMW and VPC, your PC needs to be equipped

Processor: Pentium III 733 MHz

RAM: 380 MB

Video card: NVIDIA GeForce 4MX 440 AGP 8X 128 MB

Hard drive: 40GB

OS: Windows XP Professional

You finished reading the article "**Virtual PC 2004 or VMware Workstation 4.5?**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.