



## Virtual PCs and Virtual Servers – Are Accountants Ready?

Randolph P. Johnston  
Executive Vice President, K2 Enterprises  
March 9, 2008  
California Society of CPAs

Virtualization of servers and desktops is not going to be an option in the near future, regardless of the size of organization. It will be a requirement. Virtualization of servers reduces maintenance costs, conserves energy, improves performance and allows much more rapid recovery from a disaster. Virtualizing desktops allow you to run older applications on operating systems that support them. For example, QuickBooks 2005 is not designed to be run on Vista, but will run in a virtual machine that is installed on Vista or on a Mac.

What is virtualization or a virtual machine? Virtual machine technologies enable one physical server to run one or more operating systems and related applications. A virtual machine uses software and selected hardware devices to create an emulated operating environment. Both servers and desktops can be virtualized. We can emulate an entire real machine by loading all the applications in a single disk file that is controlled by a virtual machine software application such as Virtual PC 2007, VMWare or Parallels. There is no limit to the number of virtual machines that can be run other than the physical machine limitations.

Why is virtualization needed? The pressing need that will force most organizations into using virtualization is the release of Microsoft Vista. This new operating system has many applications that are not compatible. The issue will be forced on many when they must replace a computer, and find that the only option they have is to buy the machine with the Windows Vista operating system installed. The next problem will be that some applications which are mission critical will not work. The cheapest solution we have found to date is to install the free Virtual PC 2007 from Microsoft and load your legal copy of Windows XP along with the needed supporting applications in their own virtual machine.

For example, this year I am running into a client per week that has some older application that they are still running. They can't upgrade their computers because the application won't run on a newer operating system. One situation involved an older version of Great Plains that would not run properly under Windows XP. By loading the older operating system and Great Plains in a virtual machine, a new machine could be purchased, installed and the older application could still run. In fact, it ran faster. This allowed the organization to do an orderly upgrade to Dynamics GP at their own pace. Many accounting and tax software products are still not Vista compatible. However, even assuming all current applications will eventually become compatible, what about the older applications like prior year tax products or legacy accounting systems? These can be run on a virtual machine instead saving an old piece of hardware in the corner to "occasionally" run the application.

Why is virtualization important?

1. Can run incompatible applications on Vista
2. Can run multiple desktop OS platforms and related applications

3. Can run older versions of applications (Tax, for example)
4. More up time and flexibility
5. Fewer boxes to purchase and maintain
6. Less IT Staff time needed
7. Less costly and /better business contingency planning
8. Can run demonstration software or test software without the danger of contaminating your system
9. Can save stable versions of the desktop and distribute

While virtualization is important, there may be some licensing issues. Many of you have purchased OEM (=pre-installed) licenses with your HP or Dell computers, and these licenses may not be transferred unless you have an Open License agreement with Microsoft. You have a limited license since it can only be used on the machine you purchased the license with. In other words, you don't have a full license that allows using the operating system on another machine including virtual machines.

So, who are the key players?

1. Desktop
  - a. Microsoft Virtual PC 2007 – free – this product was originally purchased from Connectix  
<http://www.microsoft.com/windows/products/winfamily/virtualpc/default.mspx>
  - b. VMWare Workstation - \$189 - <http://www.vmware.com/products/ws/>
  - c. Parallels – wildly popular on the Macintosh. This product supports Windows applications.
2. Server
  - a. VMWare ESX is clearly the server leader currently
  - b. Windows Server 2008 Hyper-V should be available in late 2008  
<http://www.microsoft.com/windowsserver2008/en/us/hyperv-install.aspx>
  - c. Microsoft Virtual Server 2005 R2  
<http://www.microsoft.com/windowsserversystem/virtualserver/default.mspx>
  - d. Xen on Linux (now ships preloaded in Enterprise Red Hat or SUSE)
  - e. Sun and IBM both have significant offerings as well

Last, but not least, there is a major technology shift happening with disk files called Virtual Appliances. A virtual appliance is a pre-built, pre-configured and ready-to-run software application packaged with the operating system inside a virtual machine. One year ago, VMWare had around 160 virtual appliances available, and today there are thousands. Check some of this out at [www.vmware.com/vmtn/appliances](http://www.vmware.com/vmtn/appliances). Virtual appliances are fundamentally changing the application stack and how it is packaged and distributed as ISVs develop self-contained and optimized application stacks that are easy to deploy, run on any hardware, and are more secure and reliable. Virtualization is definitely in your future.