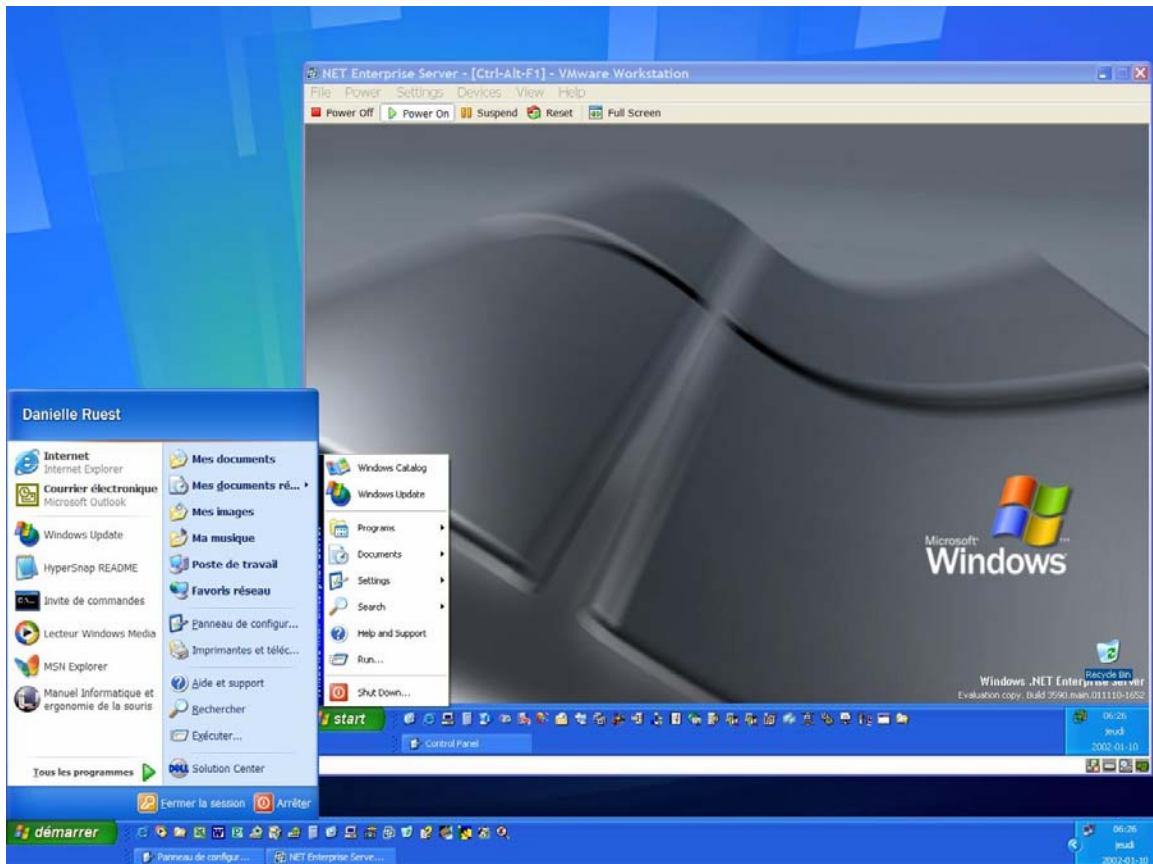


# Using Virtual Machines to support the Enterprise Developer

By Danielle Ruest and Nelson Ruest

Designing an enterprise development environment is a complex task. Developers need to have a certain amount of freedom on the machines they work with, but since these machines are enterprise systems, they must be controlled to a certain degree. The best way to do this is to use virtual environments.

virtual machines can then support the installation and operation of any number of operating systems, including all versions of Windows, DOS, Linux, Novell, etc... They can even communicate with the physical host just as if they were real machines in their own sense.



***A VMware virtual machine lets you operate another instance of an operating system within your physical workstation.***

Virtual Machine Software can create one or more virtual PCs or servers on a real PC or server. Everything depends on what is available on the real machine: hard disk space, processor capability and amount of RAM. These

The possibilities are almost limitless. VMware Corporation ([www.vmware.com](http://www.vmware.com)), one of the manufacturers of virtual machine software offers three (3) different products for the creation of virtual machines: VMware Workstation,

VMware GSX Server and VMware ESX Server. Each supports different machine configurations for different purposes. The two server editions support multiprocessing and allow the installation of multiple servers on a single physical machine. Imagine if you will, a physical server operating under Windows 2000 and supporting virtual servers operating Linux, Novell and even Windows .NET Server 2003! This scenario is not at all impossible with VMware technology.

But for the support of development requirements, it is VMware Workstation that is the ideal product. Version 3.2 now includes support for Windows XP and Windows .NET Server 2003. It supports the creation of as many virtual machines as you have space on the hard disk drive. Each machine takes up about 4 Gigabytes of space. Not all of these machines need to run at the same time, though. Each requires a minimum of 128 MB of RAM (256 MB or more is recommended for development). The base system also requires at least 256 MB of RAM to support VMware. A developer operating with 1 GB of RAM could actually have four machines running at once, first the physical machine, then three (maybe more...) virtual machines. Switching from one to the other is as simple as switching from one window to another. No more reboots required!

The virtual machine is in fact the ideal solution for local development support environments, especially environments that are leading edge. Organizations that choose to move to Visual Studio .NET Everett because they want to create applications for Windows .NET Server 2003 can profit from the use of virtual machines because they allow them to begin work immediately. In addition, administrators can even prepare “development” virtual machines — machines that include the installation of Visual Studio .NET Everett and that are configured to the organization’s specifications. Deploying these machines is as simple as copying the VMware files to the developers’ workstations.

VMware software does not only support the development environment. It can be used for several different situations — PC simulations for deployment testing, server simulation for consolidation purposes, application migrations, software demonstrations, training, legacy application support, you name it. The possibilities are endless.

A single license of VMware is required per physical machine, but a specific license is required for each operating system you install even if you consider it the same machine. For \$299 per PC, VMware Workstation 3 offers an ideal solution for the support of development environments.

***This article first appeared in the February 2003 issue of .NET Magazine.***