

# SoftGrid Sequencing with Microsoft Virtual PC

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This article describes using Softricity SoftGrid Sequencer in conjunction with Microsoft Virtual PC, rather than dedicate multiple hardware PCs, use VMWare, and/or Norton Ghost (or similar) product).

While neither Microsoft nor Softricity are likely to provide support what is described here, it may make a faster, and less expensive, solution to sequencing.

## About Microsoft Virtual PC

Microsoft VPC is along the lines of VMWare Workstation or GSX (not ESX) - providing the ability to launch a virtual operating system on top of another OS. Microsoft picked up the technology when they bought a company (Connexix) and has released it under the new name Virtual PC.

Here is a link to the VPC homepage:

<http://www.microsoft.com/windowsxp/virtualpc>

Virtual PC is software you add on top of an existing OS to allow you to run one or more virtual PCs with the same or different OS's. The virtual PC runs in a window and has it's own virtual hard-drive and IP address. Officially, VPC will run on top of only certain Microsoft Desktop OS's, however that doesn't mean it won't work on the others (it's just not supported). In fact, I have tested VPC running on Windows Server 2003. Other than a warning when you install that the OS isn't supported -- it works fine. There are limitations that Microsoft plans to address with a server version later on (more on that later).

While VPC can be used to set up virtual servers (for example, I set up a Exchange Server 2003 on Windows 2000 Virtual Server that was running on a host Server 2003 OS) it really isn't ideal (oh yeah, and MS doesn't support that). Running in this environment is slower, although I did not attempt to measure how much.

## About Softricity SoftGrid

Softricity SoftGrid virtualizes individual applications. If you are reading this, you no doubt know all about SoftGrid, but here is a link anyway:

<http://www.softricity.com>

The process of preparing an application, called sequencing, is always performed on a PC that contains the OS only -- no other applications installed. Typically we use something like Norton Ghost to backup the "virgin OS". We install the OS on a PC, install the SoftGrid Sequencer, then take a snapshot of the system. After running the sequencer to capture an applications we sequence, we restore the snapshot so we can sequence another application on the "virgin" system.

## Using SoftGrid Sequencer on VPC

In my test, I wanted to see if I could use the Virtual PC to sequence on.

I installed VPC to a Windows Server 2003 Terminal Server. After telling me it won't install, it did anyway. I created a Win2kPro VPC instance. I launch the VPC and then install the 2000 OS just as you would have on a real PC. I can shutdown and restart the server at any time (I think it is actually quicker to boot a VPC than a real PC). I can see the VPC from other PCs (it even has it's own virtual MAC address (using the last half of the real PCs MAC)).

The VPC shows up as a window on the screen not unlike a TS desktop. You can pick different resolutions, including full screen. Initially the mouse is a little funny with the windows. The mouse gets captured and won't leave the VPC window. After hunting the docs, we find that you hold the right ALT key to pull the mouse out of the window. The doc also told us that if we install the "VPC Extensions" onto the VPC target OS (Win2kPro in my case) instance, you can smoothly move the mouse between the VPC and the real PC without the right-alt. This worked well for me, however they caution some virtual apps may not like it.

Now my server was a dual Xeon processor with HyperThreading enabled - so there are four logical processors. The VPC instance is a process on the host OS. The real processing associated with the VPC instance is contained within a single thread on the host OS. This means that if I run some really bad software in the VPC instance that eats up 100% of the CPU in the VPC instance -- it consumes only 25% of the host server.

The performance of the VPC was OK considering it was limited to 25% of the CPU.

One nice thing is that the VPC instance (including it's file system) are easily moved to another PC (it's just a couple of files). So it becomes easy to replace the underlying hardware and be up and running in no time. Rather than booting and ghosting, I just back up the virtual hard drive (vhd) file in the host OS when the VPC is not running. The sequence is as follows:

1. Create your master VPC image including the sequencer.
2. Shut down the VPC Session.
3. Back up the VHD file.
4. Boot up the VPC Session.
5. Sequence an app.
6. Copy the sft/osds to the host server.
7. Shutdown the VPC Session.
8. Restore the VHD file (and go back to step 4)

VPC also has a "differencing" feature under the settings you could use. After you get to step 2, above, right click on the server in the host OS VPC control window and select the settings option. If you enable differencing, when you shut down a VPC Session, you are asked if you want to save the differences. I found that the VPC session ran much slower with this option enabled. While I uses less disk space (the VHD file is in the 2GB range) to use differencing, it slows things down enough to recommend using the file back-up method above.

A note on SoftGrid licensing. A Virtual PC OS will see itself as having a different MAC address than the underlying host OS. It looks as though the VPC will share this new MAC address across each VPC session. In my case, I see it using the last two octets of the actual hardware mac and over-writing the first three octets. If you add software to the virtual

server that depends upon the MAC address for key verification you need a different key than you would use on the host OS. This is the case for the SoftGrid Sequencer. So to run in this mode, you will need a Softricity license for the Virtual MAC address.

This makes it possible to completely sequence and test on a single physical platform. Just make multiple Virtual PCs on a single OS. One for the Sequencer, one for the Client. Either a third for the SoftGrid Server (or place it on the host OS). Boom - ***a complete sequencing station on one hardware platform*** (and no more ghosting)!

I wouldn't expect Softricity to support this combination officially. If you go this route (or the VMWare route) and have an issue with sequencing, you might just need to re-sequence on a "real" machine.

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