

**Virtual Desktops – Tweaking the Gold Image**

My first experience with a “Virtual Desktop” goes back to the days when I was trying to create a Windows 2000 Professional machine inside of the VMware Workstation 3.1 software I had installed on my desktop. At the time, I wasn’t too concerned about performance since my main goal was to just get it to boot and see all the cool things that could be done with having a virtualized OS running inside of another. What I soon found out was that getting it to just boot up without a blue screen is one thing, but having the same user and performance experience as a bare metal 2000 Professional install is quite another.

As an Administrator, I want to give my users the best desktop experience that I can give without sacrificing performance. Sometimes that is difficult to do, and some of the “eye candy” has to be given up to make the virtual desktop leaner and more efficient. While certain groups of users would rather have full Aero Glass previews and their picture slideshow wallpapers on their desktops, they will most likely be the first to start the Helpdesk calls with complaints about performance when it takes what seems like an eternity to open their PowerPoint presentation that is due to their boss in the next 10 minutes. That is why I personally believe that performance far out-weighs look and feel for most of my user base, and I tweak my Golden Images to increase their performance from an OS perspective as much as possible.

There are basically two instances in time that a Golden Image effectively utilizes the tweaks applied to it, at boot up with pre-installed changes, and via GPO. Notice that I said GPO, which obviously makes my intention of this article for Windows-based OS’s and not Linux. I do know some administrators that will use GPO-based policies to enforce all of their tweaks, but what that does is lose the ability to modify the OS before it gets to a login screen. You will find that some very effective tweaks do require that they be applied to the Master directly so that the settings are in place on boot. I believe the best method of management is to use a combination of the two.

Besides the installation of user software applications, there are things that can be done on the Golden Image itself to enhance performance. Most of these are related to hardware drivers and applications that are enabled on boot that are not necessary in a Virtual Desktop. Although some are obvious, and depending on your situation and solution your mileage may vary compared to mine, others will take some trial and error to ensure you haven’t disabled something that really needs to be there. Another caution here is that since hardware varies on which the Virtual Desktop itself is run, you may have the inclination to include a lot of different hardware drivers in your Master. This is not a good idea since this can increase your image size considerably and possibly the best solution in that scenario would be the creation of a new Master Image for each hardware type.

I have found many references around the web with suggestions on certain things to add to your Virtual Desktop Tweaking Toolbox, and I have added a few of my own based on our implementation of VDI to my toolbox. Keep in mind a few things when working with tweaking Goldens:

- Always have a backup of the current master in case anything goes wrong. I always make 2 and put one on separate storage, like an external drive. I know its more work, but it has saved my keester a few times when the Golden got corrupt. I use a Powershell script to keep the copy current.

- Always test your image changes with a “regular joe” ID (Your probably a local Admin, right?). A few times I got bit by this since the user did not have the permissions to do something that I had placed in the image, but I missed it since I was a local Admin when I tested and it worked for me.
- And lastly, always do your tests in TEST, not Production. What worked for one person may not work for you in your images (need I say more?).

Below are some links to some tweaking tips, and even though they may be targeted for a specific VDI vendor, they should work for most, if not all, types of images since they all share the same goal.

<http://virtualfeller.com/2010/06/29/not-optimizing-your-virtual-desktop-image/>

<http://www.vmguru.nl/wordpress/2010/07/how-to-optimize-guests-for-vmware-view/>

<http://support.citrix.com/article/CTX124239>

<http://community.citrix.com/display/ocb/2010/01/15/Optimizing+Windows+7+for+FlexCast+Delivery>

<http://www.citrixtools.net/en/Articles/articleType/ArticleView/articleId/43/XenDesktop-Tuning-Tips.aspx>

In any environment, there may be some other inherent factors that would hinder the performance of the desktop, such as latency, packet loss, and disk I/O. While we may not be able to solve some or all of those issues, we can try our best to deliver the leanest, most efficient image we can to the users. After all, Happy Users = Happy I.T., right?