

## Optimized XP Virtual Machine for VDI Template Checklist

This checklist is intended to optimize a Windows XP VM for VDI deployments and keep it as small as possible.

The configuration steps were taken from the VMWorld 2007 lab “Using VMware Virtual Desktop Infrastructure for Hosted Computing”. The Appendix of the lab materials .pdf was copied to create this table and most of the steps are copied as they appear in that document.

It is recommended that a VM that has been optimized by performing the steps in this checklist be used as a template or gold image for all other XP VMs.

	Configuration	Notes	Complete?
1.	<b>Build a Windows XP Professional VM</b>	You should connect to this VM via VC Console because some options won't be available through a terminal Services (RDP) session.	<input type="checkbox"/>
2.	<b>Virtual Machine Systems changes:</b>	Ensure that floppy drive (if present) is not connected at startup Ensure that cd-rom drive (if present) is not connected at startup	<input type="checkbox"/>
3.	<b>Windows XP Changes:</b>	Ensure SP2 + applicable updates are applied	<input type="checkbox"/>
4.	<b>Install VM Tools</b>	Sync time from host Disable Windows time update	<input type="checkbox"/>
5.	<b>If you want to enable 24 bit color you need to modify a local machine policy.</b>	<b>By default Windows XP sends 16 bit color over Terminal Services.</b>  local computer policy editor, go to Local Computer Policy Computer Configuration /Administrative Templates / Windows Components / Terminal Services Then click on the Limit maximum color depth policy. Enable, set to 24 bit, and click on OK. Restart your RDP session and you will be able to use 24 bit color	<input type="checkbox"/>
6.	<b>Disable COM1 &amp; COM2</b>	Right-click My Computer -> Select Manage Device Manager	<input type="checkbox"/>
7.	<b>Turn off all theme enhancements</b>	Right-click My Computer -> Select Properties Choose the Advanced Tab Under Performance Section Choose Settings Choose Adjust for Best Performance Optionally choose settings like font smoothing if desired	<input type="checkbox"/>
8.	<b>Disable all screensavers except Blank password protected</b>	Copy the scrnsvr.scr over the top of all the others (because windows has a habit of bringing them back if you delete them). Once you do this, you should enable the only screensaver that will show up which is the Blank/Password Protected.	<input type="checkbox"/>
9.	<b>Delete all background wallpapers</b>	Why waste RAM or disk space on wallpapers that will be covered by an application Anyway	<input type="checkbox"/>

	Configuration	Notes	Complete?
10.	<b>Ensure full hardware acceleration</b>	Control Panel -> Display -> Settings Tab -> Advanced Button Troubleshooting Tab -> Set acceleration to full (that way by default, but check to make sure it hasn't changed in some latest Microsoft Update)	<input type="checkbox"/>
11.	<b>Remove Windows Update folders</b>	Delete all the hidden update folders (this uses a lot of space and no one is going to uninstall any of those updates). Leave the one that looks like \$hf_mig\$.	<input type="checkbox"/>
12.	<b>Disable Indexing Services</b>	Indexing Services uses large amounts of RAM. It enables faster searches by scanning the indexed lists. However, indexing typically uses lots of CPU time and if the user doesn't search their computer often, indexing won't help them at all. If they do search frequently, indexing may not make the searches faster. Go to Start/Control Panel/Add Remove Windows Components Uncheck the Indexing services Disable it on the C: drive also – in My Computer right click the C:\ drive and select Properties. Uncheck the Allow indexing service .... Box at the bottom of the General tab	<input type="checkbox"/>
13.	<b>Disable Paging of the executive</b>	HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management DisablePagingExecutive=dword:00000001	<input type="checkbox"/>
14.	<b>Create and publish a GPO for folder redirection to the users' storage space on the SAN for the following:</b>	Application Data My Documents (and all sub-class special folders) My Desktop <a href="http://support.microsoft.com/default.aspx?scid=kb;EN-US;232692">http://support.microsoft.com/default.aspx?scid=kb;EN-US;232692</a>	<input type="checkbox"/>
15.	<b>Optimize the Paging File</b>	Right-click My Computer -> Select Properties Choose the Advanced Tab Under Performance Section Choose Settings Click Change. Select the Custom Size option and set the Initial Size and Maximum Size to 512 MB or the exact size of the configured RAM (whichever is greater).	<input type="checkbox"/>
16.	<b>Turn off unnecessary sounds (ie Startup and Shutdown wav's)</b>	Control Panel, double-click Sounds and Audio Devices and move to the sounds tab Disable unnecessary sounds (mail notification and warnings are probably the only ones you need)	<input type="checkbox"/>
17.	<b>Defragment Prefetch (faster booting)</b>	From DOS Prompt type defrag c: -b  Do NOT clean out the Prefetch directory however It is a bad idea to periodically clean out that folder as some tech sites suggest. For one thing, XP will just re-create that data anyways; secondly, it trims the files	<input type="checkbox"/>

	Configuration	Notes	Complete?
		anyways if there's ever more than 128 of them so that it doesn't needlessly consume space. So not only is deleting the directory totally unnecessary, but you're also putting a temporary dent in your PC's performance.	
18.	<b>Remove or minimize System restore points</b>	Right-click My Computer, select Properties and go to the System Restore tab.	<input type="checkbox"/>
19.	<b>Remove blinking ICONS from the systrey</b>	Remove the display of icons like the NIC that blink Alternatively you can hide all ICONS by Modifying HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer. In the right-hand pane create a new DWORD value called NoTrayItemsDisplay and set its value to 1.	<input type="checkbox"/>
20.	<b>Get Rid of Microsoft Messenger</b>	Edit C:\WINDOWS\INF\SYSOC.INF file Under the [Components] heading, you'll see a whole bunch of parameters for various Windows applets. Some of them contain the word hide. Those particular programs, which include Windows Messenger (msmsgs), Terminal Server, Pinball, and others, are installed on your XP system, but their entries are hidden from and Add/Remove dialog Remove the hide from the lines of the programs you wish to remove Msmsgs=msgrocm.dll,OcEntry,msmsgs.inf,hide,7 Save the file Go to Control Panel Add/Remove Programs Click on Windows Components button and you'll see Windows Messenger listed. Uncheck it and click Next	<input type="checkbox"/>
21.	<b>Turn off Disk Performance Counters</b>	In Windows XP Performance Monitor disk counters for physical disks are turned on by default Stop it by running: DISKPERF -N	<input type="checkbox"/>
22.	<b>Disable any unwanted services</b>	Autoruns from <a href="http://www.sysinternals.com">www.sysinternals.com</a> is good for this	<input type="checkbox"/>
23.	<b>Run Disk Cleanup</b>	Double Click My Computer Right Click C:, properties	<input type="checkbox"/>
24.	<b>Run Disk Defrag</b>	Double Click My Computer Right Click C:, properties	<input type="checkbox"/>
25.	<b>Run PageDefrag from sysinternals</b>	One of the limitations of the Windows NT/2000 defragmentation interface is that it is not possible to defragment files that are open for exclusive access. Thus, standard defragmentation programs can neither show you how fragmented your paging files or Registry hives are, nor defragment them. Paging and Registry file fragmentation can be one of the leading causes of performance degradation related to file fragmentation in a system. PageDefrag uses advanced techniques to provide you what	<input type="checkbox"/>

	Configuration	Notes	Complete?
		<p>commercial defragmenters cannot: the ability for you to see how fragmented your paging files and Registry hives are, and to defragment them. In addition, it defragments event log files and Windows 2000/XP hibernation files (where system memory is saved when you hibernate a laptop).</p> <p>PageDefrag works on Windows NT 4.0, Windows 2000, Windows XP, and Server 2003.</p> <p>Download from <a href="http://www.microsoft.com/technet/sysinternals/FileAndDisk/PageDefrag.msp">www.microsoft.com/technet/sysinternals/FileAndDisk/PageDefrag.msp</a></p>	
26.	<b>Save your work to this point as a new template</b>	Create a base install template without applications and then in Step 28 you will create a template with applications installed	<input type="checkbox"/>
27.	<b>Install Necessary Software</b>	Antivirus, Office, applications, etc.	<input type="checkbox"/>
28.	<b>Repeat steps 23 -26</b>	<p>Save new template with installed applications.</p> <p>If you have different applications for different departments then create templates for each department as needed.</p>	<input type="checkbox"/>