



Methodology in a Box™

For Citrix® Presentation Server 4.0

Running Microsoft® Windows® Server 2003

Tweaks Section

Version 4.0 Beta 4

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WARNING: The information found in this document was gathered from many different sources in the Server-Based Computing world. It is provided for informational purposes only. The authors assume no responsibility for its usage. Use common sense in applying these concepts and tips. Screen shots may vary from environment to environment. Please verify correctness and applicability in a test environment first and then deploy to your production environment(s). Throughout this document, you will be required to manually edit the registry of a Terminal Server or Windows 2000 Server. Use appropriate caution before editing the registry including having a backup of your system and registry. Using Registry Editor incorrectly can cause serious system-wide problems that may require you to reinstall Windows NT or Windows 2000 to correct. Microsoft cannot guarantee that any problems resulting from the use of Registry Editor can be solved. **Use the information found in this document at your own risk.**

Please do not Sauté!

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1. How to Deploy a .REG File to New and Existing Users

Many of the registry changes referred to in this document affect the HKEY_CURRENT_USER branch of the registry. As such they need to be applied to each user session. In an initial build, these settings can be imported into default user profile to ensure that all new users start with the desired settings. If will be deploying a registry change to existing users then you will need to deploy them through a script or via a Group Policy Object.

1.1. Initial Build/New Users

In order to do this, firstly compile the registry changes you want to make into a single file. In this file replace all instances **HKEY_CURRENT_USER** with **HKEY_USERS\defaultuser**.

For example:

```
Windows Registry Editor Version 5.00

[HKEY_CURRENT_USER\Software\Adobe\Acrobat
Reader\7.0\AVGeneral\cToolbars\cWebSearchView\cPositions\cInternal]
"bHidden"=dword:0000001

[HKEY_CURRENT_USER\Software\Adobe\Acrobat Reader\7.0\Updater]
"bShowAutoUpdateConfDialog"=dword:00000000
"bShowNotifDialog"=dword:00000000
"iUpdateFrequency"=dword:00000000
```

Is changed to:

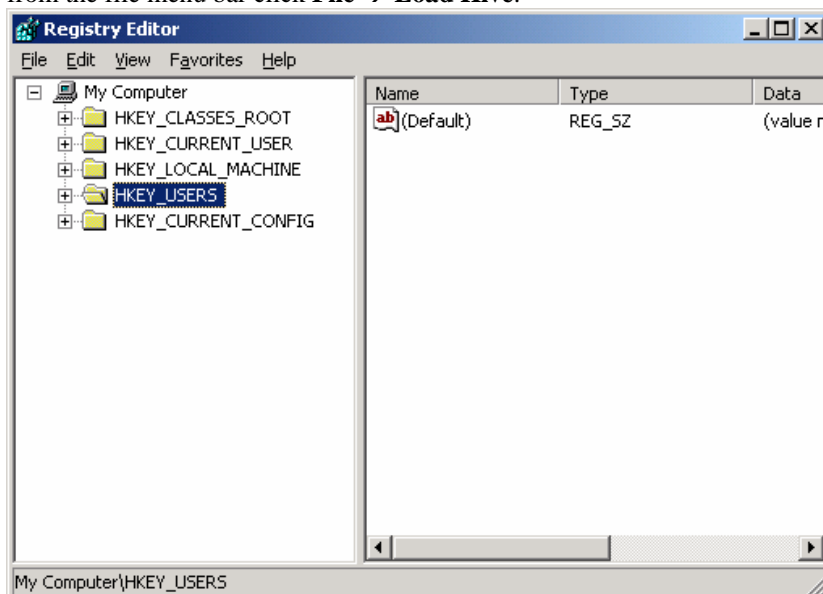
```
Windows Registry Editor Version 5.00

[HKEY_USERS\defaultuser\Software\Adobe\Acrobat
Reader\7.0\AVGeneral\cToolbars\cWebSearchView\cPositions\cInternal]
"bHidden"=dword:0000001

[HKEY_USERS\defaultuser\Software\Adobe\Acrobat Reader\7.0\Updater]

"bShowAutoUpdateConfDialog"=dword:00000000
"bShowNotifDialog"=dword:00000000
"iUpdateFrequency"=dword:00000000
```

Save this newly created file as a .reg file. Next run regedit and highlight **HKEY_USERS** as below and from the file menu bar click **File → Load Hive**.



Browse to **C:\documents and settings\default user** and select **NTUSER.DAT** (May be hidden). When prompted for a key name type **defaultuser**.

Run the customized .reg file and then don't forget to unload the default user hive by highlighting it and then go to the file menu bar and click **File → Unload Hive**

1.2. Existing Users

Users who are already on the system and have existing profiles will need these registry changes applying to their existing profiles, as they will no longer reference the default user hive (unless their profile is recreated of course). So any additional tweaks beyond the original base build can be applied through a script in the following manner.

After you have decided upon the registry tweaks that you will be implementing then you will want to create a login script to deploy them. After the reg file is created, you can use the following sample script to deploy the registry .reg files. This script can be inserted into each server's USRLOGON.CMD to ensure that it runs for all users who log on to the server. Please note this process will apply to all users who log on to the server (including administrative users). If this is not desired consider applying a script in another way such as this using Group Policy security filtering at the OU level.

```
Rem *****Implements registry settings *****  
REGEDIT -s <Path>\<Registry File Name>.REG  
REGEDIT -s <Path>\<Registry File Name>.REG  
REGEDIT -s <Path>\<Registry File Name>.REG  
REGEDIT -s <Path>\<Registry File Name>.REG  
REGEDIT -s <Path>\<Registry File Name>.REG
```

In order for this to work ensure that the Windows 2003 Group Policy setting User Configuration\Administrative Templates\System\“Prevent access to registry editing tools” is not set to disable the silent running of Regedit.

2. Tweaking Windows Server 2003 and Presentation Server 4.0

The following registry tweaks and system configurations apply to Microsoft Windows Server 2003 with Citrix MetaFrame Presentation Server 4. The goal of this section is to detail the basic tweaks needed to tune Windows for a Citrix and Terminal Services environment.

This section is broken down in to the following sections:

- Applications:
 - Adobe Acrobat
 - Internet Explorer
 - Java
 - Office 2003
 - Outlook Express
 - SAP GUI 6.40
- Disk
- Citrix MetaFrame Presentation Server
- Memory
- Microsoft Terminal Services
- Network
- Printing
- Security
- VMware
- Windows

Note: Many of the tweaks found in this document are configurable through Windows 2003 Group Policies and through Citrix Policies. Using a GPO and/or Citrix Policy could be considered a “best practice” due to the advantages of using policies for managing sets of servers instead of one server at a time. They also give you the ability to role back changes with very little effort.

When this document goes live we will also be releasing an updated “MIAB Tweaks ADM file”.

The registry entries listed below have been scripted in to .REG files for your convenience. If you received this document independently from the other material (doc templates, REG file zip) then you will need to download the latest version of this doc and all the registry files discussed below from

<http://www.dabcc.com/miab>.

IMPORTANT! This is just a draft document and we do NOT recommend you deploy these configurations in to your production environment without careful testing. Over the next few weeks we will fine tune this document to something that can be more trusted but for now, use at your own risk!

2. 1. Applications:

The following details tweaks and configurations for numerous popular applications. This is in no way a conclusive list and not all tweaks apply in all circumstances.

2. 1. 2 Adobe Acrobat 7

The following registry tweaks are specific to Adobe Acrobat 7.

Step	Description
	<p>Remove Yahoo Search Icon from the Toolbar</p> <p>The following registry tweak removes the Yahoo Search Icon from the file menu toolbar.</p> <p>HKEY_CURRENT_USER\Software\Adobe\Acrobat Value Name: bHidden Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Adobe\Acrobat Reader\7.0\AVGeneral\cToolbars\cWebSearchView\cPositions\cInternal] "bHidden"=dword:0000001</pre>
	<p>Remove the File Menu - Internet PrintMe, Update, and Purchase Options</p> <p>The following registry tweaks removes the Internet PrintMe, Update, Registration, and Purchase options from the File menu.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\FeatureLockdown Value Name: bEFIPrintMe Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: bPurchaseAcro Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: bUpdater Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: bRegisterProduct Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\FeatureLockdown] "bEFIPrintMe"=dword:00000000 "bPurchaseAcro"=dword:00000000 "bUpdater"=dword:00000000 "bRegisterProduct"=dword:00000000</pre>

Step	Description
	<p>Automatically Agree to the End-User License Agreement</p> <p>The following registry tweak configures Adobe Acrobat to suppress the end-user requirement to agree to the EULA the first time the application starts.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\AdobeViewer Value Name: "EULA" Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\AdobeViewer] "EULA"=dword:00000001</pre>
	<p>Remove Advertisements</p> <p>The following registry tweak allows you to remove the advertisements in the top right hand corner of Acrobat Reader.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\FeatureLockdown Value Name: " bShowAdsAllow " Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\FeatureLockdown] "bShowAdsAllow"=dword:00000000</pre>
	<p>Disable Application Updates from Updates</p> <p>The following registry tweaks prevent users from being presented to install application updates.</p> <p>HKEY_CURRENT_USER\Software\Adobe\Acrobat Reader\7.0\Updater Value Name: bShowAutoUpdateConfDialog Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: bShowNotifDialog Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: iUpdateFrequency Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Adobe\Acrobat Reader\7.0\Updater] "bShowAutoUpdateConfDialog"=dword:00000000 "bShowNotifDialog"=dword:00000000 "iUpdateFrequency"=dword:00000000</pre>

Step	Description
	<p>Disable Acrobat 7.0 Startup splash screen</p> <p>The following registry tweak allows you to disable the Adobe Acrobat 7.0 splash screen.</p> <p>HKEY_CURRENT_USER\Software\Adobe\Acrobat Reader\7.0\Originals Value Name: bDisplayedSplash Data Type: DWORD Value Data: 0 = Disable Splash Screen, 1 = Enable Splash Screen</p> <p><i>Recommended .reg file text:</i></p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Adobe\Acrobat Reader\7.0\Originals] "bDisplayedSplash"=dword:00000000</pre>
	<p>Remove the “File\Create PDF Online” File Menu Item</p> <p>The following registry tweak allows you to remove the “File\Create PDF Online” File Menu item.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\FeatureLockdown Value Name: bCreatePDFOnline Data Type: DWORD Value Data: 0 = Remove the “File\Create PDF Online” item, 1 = Enable the “File\Create PDF Online Item”</p> <p><i>Recommended .reg file text:</i></p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Adobe\Acrobat Reader\7.0\FeatureLockdown] "bCreatePDFOnline"=dword:00000000</pre>

2. 1. 3 Internet Explorer

The following registry tweaks are specific to Microsoft Internet Explorer 5 and above

Step	Description
	<p>Disable Caching of (SSL) Secured Web Pages</p> <p>The following registry tweak controls whether SSL web pages are cached to the temporary Internet cache folder.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings Value Name: DisableCachingOfSSLPages Data Type: DWORD Value Data: 0 = Enabled, 1 = Disabled Cache</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings] "DisableCachingOfSSLPages"=dword:00000000</pre>
	<p>Set the Internet Explorer Window Title Text</p> <p>The following registry tweak sets the windows page title text.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main Value Name: "Window Title" Data Type: REG_SZ Value Data: "Your text here"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main] "Window Title"="Microsoft Internet Explorer provided by <Your Company Name Here>"</pre>
	<p>Disable Web Page Screen Flicker</p> <p>The following registry tweak forces off screen composition within Microsoft Internet Explorer 5 and above. This tweak will prevent against screen flicker when you view a web page that contains animated content.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main Value Name: "Force Offscreen Composition" Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main] "Force Offscreen Composition"=dword:00000001</pre>

Step	Description
	<p data-bbox="345 268 1024 300">Prevent WISP from Loading Upon Application Startup</p> <p data-bbox="345 321 1446 485">The following registry tweak allows you to prevent Acrobat's WISP service from launching upon application startup. WISP.exe started when adobe acrobat reader 7 is run. WISP is used for Abode Acrobat alternate user input. However, when you close the adobe acrobat reader 7 instance, WISP is still loaded as a process in the users environment. This can cause issues on log off and adds potentially unnecessary memory overhead for the user's session.</p> <p data-bbox="345 506 992 537">To Remove WISP from loading apply the following reg file:</p> <pre data-bbox="345 579 1463 1913"> Windows Registry Editor Version 5.00 [-HKEY_CLASSES_ROOT\AppID\{7F429620-16D1-471E-A81A-114992148034}] [-HKEY_CLASSES_ROOT\AppID\wisptis.EXE] [-HKEY_CLASSES_ROOT\CLSID\{04A1E553-FE36-4FDE-865E-344194E69424}] [-HKEY_CLASSES_ROOT\CLSID\{13DE4A42-8D21-4C8E-BF9C-8F69CB068FCA}] [-HKEY_CLASSES_ROOT\CLSID\{242025BB-8546-48B6-B9B0-F4406C54ACFC}] [-HKEY_CLASSES_ROOT\CLSID\{3336B8BF-45AF-429F-85CB-8C435FBF21E4}] [-HKEY_CLASSES_ROOT\CLSID\{3EE60F5C-9BAD-4CD8-8E21-AD2D001D06EB}] [-HKEY_CLASSES_ROOT\CLSID\{43B07326-AAE0-4B62-A83D-5FD768B7353C}] [-HKEY_CLASSES_ROOT\AppID\{7F429620-16D1-471E-A81A-114992148034}] [-HKEY_CLASSES_ROOT\AppID\wisptis.EXE] [-HKEY_CLASSES_ROOT\CLSID\{04A1E553-FE36-4FDE-865E-344194E69424}] [-HKEY_CLASSES_ROOT\CLSID\{13DE4A42-8D21-4C8E-BF9C-8F69CB068FCA}] [-HKEY_CLASSES_ROOT\CLSID\{242025BB-8546-48B6-B9B0-F4406C54ACFC}] [-HKEY_CLASSES_ROOT\CLSID\{3336B8BF-45AF-429F-85CB-8C435FBF21E4}] [-HKEY_CLASSES_ROOT\CLSID\{3EE60F5C-9BAD-4CD8-8E21-AD2D001D06EB}] [-HKEY_CLASSES_ROOT\CLSID\{43B07326-AAE0-4B62-A83D-5FD768B7353C}] [-HKEY_CLASSES_ROOT\CLSID\{43FB1553-AD74-4EE8-88E4-3E6DAAC915DB}] [-HKEY_CLASSES_ROOT\CLSID\{524B13ED-2E57-40B8-B801-5FA35122EB5C}] [-HKEY_CLASSES_ROOT\CLSID\{632A2D3D-86AF-411A-8654-7511B51B3D5F}] [-HKEY_CLASSES_ROOT\CLSID\{65D00646-CDE3-4A88-9163-6769F0F1A97D}] [-HKEY_CLASSES_ROOT\CLSID\{6E4FCB12-510A-4D40-9304-1DA10AE9147C}] [-HKEY_CLASSES_ROOT\CLSID\{786CDB70-1628-44A0-853C-5D340A499137}] [-HKEY_CLASSES_ROOT\CLSID\{836FA1B6-1190-4005-B434-7ED921BE2026}] [-HKEY_CLASSES_ROOT\CLSID\{8770D941-A63A-4671-A375-2855A18EBA73}] [-HKEY_CLASSES_ROOT\CLSID\{8854F6A0-4683-4AE7-9191-752FE64612C3}] [-HKEY_CLASSES_ROOT\CLSID\{937C1A34-151D-4610-9CA6-A8CC9BDB5D83}] [-HKEY_CLASSES_ROOT\CLSID\{9C1CC6E4-D7EB-4EEB-9091-15A7C8791ED9}] [-HKEY_CLASSES_ROOT\CLSID\{9DE85094-F71F-44F1-8471-15A2FA76FCF3}] [-HKEY_CLASSES_ROOT\CLSID\{9FD4E808-F6E6-4E65-98D3-AA39054C1255}] [-HKEY_CLASSES_ROOT\CLSID\{A5558507-9B96-46BA-94ED-982E684A9A6B}] [-HKEY_CLASSES_ROOT\CLSID\{A5B020FD-E04B-4E67-B65A-E7DEED25B2CF}] [-HKEY_CLASSES_ROOT\CLSID\{AAC46A37-9229-4FC0-8CCE-4497569BF4D1}] [-HKEY_CLASSES_ROOT\CLSID\{C52FF1FD-EB6C-42CF-9140-83DEFECA7E29}] [-HKEY_CLASSES_ROOT\CLSID\{D8BF32A2-05A5-44C3-B3AA-5E80AC7D2576}] [-HKEY_CLASSES_ROOT\CLSID\{DE815B00-9460-4F6E-9471-892ED2275EA5}] [-HKEY_CLASSES_ROOT\CLSID\{E3D5D93C-1663-4A78-A1A7-22375DFEBAEE}] [-HKEY_CLASSES_ROOT\CLSID\{E5CA59F5-57C4-4DD8-9BD6-1DEEEDD27AF4}] [-HKEY_CLASSES_ROOT\CLSID\{E9A6AB1B-0C9C-44AC-966E-560C2771D1E8}] [-HKEY_CLASSES_ROOT\CLSID\{EFB4A0CB-A01F-451C-B6B7-56F02F77D76F}] [-HKEY_CLASSES_ROOT\CLSID\{F0291081-E87C-4E07-97DA-A0A03761E586}] [-HKEY_CLASSES_ROOT\CLSID\{43FB1553-AD74-4EE8-88E4-3E6DAAC915DB}] [-HKEY_CLASSES_ROOT\CLSID\{524B13ED-2E57-40B8-B801-5FA35122EB5C}] [-HKEY_CLASSES_ROOT\CLSID\{632A2D3D-86AF-411A-8654-7511B51B3D5F}] [-HKEY_CLASSES_ROOT\CLSID\{65D00646-CDE3-4A88-9163-6769F0F1A97D}] [-HKEY_CLASSES_ROOT\CLSID\{6E4FCB12-510A-4D40-9304-1DA10AE9147C}] [-HKEY_CLASSES_ROOT\CLSID\{786CDB70-1628-44A0-853C-5D340A499137}] [-HKEY_CLASSES_ROOT\CLSID\{836FA1B6-1190-4005-B434-7ED921BE2026}] [-HKEY_CLASSES_ROOT\CLSID\{8770D941-A63A-4671-A375-2855A18EBA73}] [-HKEY_CLASSES_ROOT\CLSID\{8854F6A0-4683-4AE7-9191-752FE64612C3}] [-HKEY_CLASSES_ROOT\CLSID\{937C1A34-151D-4610-9CA6-A8CC9BDB5D83}] </pre>

```

[-HKEY_CLASSES_ROOT\CLSID\{9C1CC6E4-D7EB-4EEB-9091-15A7C8791ED9}]
[-HKEY_CLASSES_ROOT\CLSID\{9DE85094-F71F-44F1-8471-15A2FA76FCF3}]
[-HKEY_CLASSES_ROOT\CLSID\{9FD4E808-F6E6-4E65-98D3-AA39054C1255}]
[-HKEY_CLASSES_ROOT\CLSID\{A5558507-9B96-46BA-94ED-982E684A9A6B}]
[-HKEY_CLASSES_ROOT\CLSID\{A5B020FD-E04B-4E67-B65A-E7DEED25B2CF}]
[-HKEY_CLASSES_ROOT\CLSID\{AAC46A37-9229-4FC0-8CCE-4497569BF4D1}]
[-HKEY_CLASSES_ROOT\CLSID\{C52FF1FD-EB6C-42CF-9140-83DEFECA7E29}]
[-HKEY_CLASSES_ROOT\CLSID\{D8BF32A2-05A5-44C3-B3AA-5E80AC7D2576}]
[-HKEY_CLASSES_ROOT\CLSID\{DE815B00-9460-4F6E-9471-892ED2275EA5}]
[-HKEY_CLASSES_ROOT\CLSID\{E3D5D93C-1663-4A78-A1A7-22375DFEBAEE}]
[-HKEY_CLASSES_ROOT\CLSID\{E5CA59F5-57C4-4DD8-9BD6-1DEEEDD27AF4}]
[-HKEY_CLASSES_ROOT\CLSID\{E9A6AB1B-0C9C-44AC-966E-560C2771D1E8}]
[-HKEY_CLASSES_ROOT\CLSID\{EFB4A0CB-A01F-451C-B6B7-56F02F77D76F}]
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[-HKEY_CLASSES_ROOT\TpcCom.ClassicW]
[-HKEY_CLASSES_ROOT\TpcCom.ClassicW.1]
[-HKEY_CLASSES_ROOT\TpcCom.DrawAttrs]
[-HKEY_CLASSES_ROOT\TpcCom.DrawAttrs.1]
[-HKEY_CLASSES_ROOT\TpcCom.DrawAttrsXP]
[-HKEY_CLASSES_ROOT\TpcCom.DrawAttrsXP.1]
[-HKEY_CLASSES_ROOT\TpcCom.GenericRecognizer]
[-HKEY_CLASSES_ROOT\TpcCom.GenericRecognizer.1]
[-HKEY_CLASSES_ROOT\TpcCom.InkObject]
[-HKEY_CLASSES_ROOT\TpcCom.InkObject.1]
[-HKEY_CLASSES_ROOT\TpcCom.InkObjectXP]
[-HKEY_CLASSES_ROOT\TpcCom.InkObjectXP.1]
[-HKEY_CLASSES_ROOT\TpcCom.InkSettings.1]
[-HKEY_CLASSES_ROOT\TpcCom.Lattice.1]
[-HKEY_CLASSES_ROOT\TpcCom.RecoManager]
[-HKEY_CLASSES_ROOT\TpcCom.RecoManager.1]
[-HKEY_CLASSES_ROOT\TpcCom.TabletManager]
[-HKEY_CLASSES_ROOT\TpcCom.TabletManager.1]
[-HKEY_CLASSES_ROOT\TpcCom.UserDictionary]
[-HKEY_CLASSES_ROOT\TpcCom.UserDictionary.1]
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[-HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData\S-1-5-18\Products\7040110900063D11C8EF10054038389C\Features\WISPFFiles]
[-HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData\S-1-5-18\Products\7040110900063D11C8EF10054038389C\Features\WISPHidden]

```

2. 1. 4 Java

The following registry tweaks are specific to Sun Java JRE

Step	Description
	<p>Turn off Java Automatically Update</p> <p>The following registry tweak turns off the automatic update feature in the Sun Java Runtime Environment.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Update\Policy Value Name: "EnableJavaUpdate" Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Update\Policy] "EnableJavaUpdate"=dword:00000000</pre>
	<p>Disable Java Automatic Updates Application from Running upon Login</p> <p>The following registry tweak removes the SunJavaUpdateSched program from running when a user logs on to the Terminal Server.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run Value Name: "SunJavaUpdateSched " Data Type: : REG_SZ Value Data: Delete the key</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run] "SunJavaUpdateSched"=-</pre>
	<p>Hide Java System Tray Icon</p> <p>The following registry tweak hides the Java System Tray Icon.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Plug-in\1.5.0_06 Value Name: "HideSystemTrayIcon" Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Plug-in\1.5.0_06] "HideSystemTrayIcon"=dword:00000001</pre> <p>Note: The above registry setting is dependant upon the version of Java have installed on the server. In the above case it is version 1.5.0_06.</p>

2.1.5 Office 2003

The following registry tweaks are specific to Microsoft Office 2003

Step	Description
	<p>Disable 'Customer Experience Improvement Program' in Office 2003</p> <p>The following registry tweak disables Microsoft Office 2003 from being prompted to participate in the Customer Experience Improvement Program.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Office\Common Value Name: QMEnable Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Office\Common] "QMEnable"=dword:00000000</pre>
	<p>Turn off Speech and Handwriting Recognition Features</p> <p>The following registry tweak disables the Office Speed and Handwriting recognition features. These features are launched through the Ctfmon.exe file. By default, the Office features and components that require the Ctfmon.exe file are turned off during installation in a Terminal Server environment. Although these features can be enabled through a custom installation, Microsoft recommends that CTFMON remain disabled in a Terminal Server environment because of potential performance issues.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run Value Name: ctfmon.exe Value Type: DWORD Value Data: delete the key</p> <p>HKEY_CURRENT_USER\Software\Microsoft\CTF Value Name: Disable Thread Input Manager Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>HKEY_CURRENT_USER\Software\Microsoft\CTF\MSUTB Value Name: ShowDeskBand Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run] "ctfmon.exe"=- [HKEY_CURRENT_USER\Software\Microsoft\CTF] "Disable Thread Input Manager"=dword:00000001 [HKEY_CURRENT_USER\Software\Microsoft\CTF\MSUTB] "ShowDeskBand"=dword:00000000</pre> <p>For more information please visit Microsoft support article: How to turn off the speech recognition and the handwriting recognition features in Office 2003</p>

Step	Description
	<p data-bbox="347 268 1013 298">Disable Outlook 2003 'Welcome to Outlook' Message</p> <p data-bbox="347 315 1461 373">The following registry tweak disables Outlook 2003 from creating a “Welcome to Outlook” message the first time a user logs in.</p> <p data-bbox="347 415 1068 520">HKEY_CURRENT_USER\Software\Microsoft\Office\11.0\Outlook\Setup Value Name: CreateWelcome Value Type: DWORD Value Data: FFFFFFFF</p> <p data-bbox="347 562 656 592"><i>Recommended .reg file text:</i></p> <pre data-bbox="347 592 1468 684">Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Office\11.0\Outlook\Setup] "CreateWelcome"=dword:FFFFFFFF</pre>

2. 1. 6 SAP GUI 6.40

The following registry tweaks are specific to SAP GUI version 6.40.

Step	Description
	<p>Configure the SAPWorkdir</p> <p>The following registry tweak allows you to configure the SAPWorkdir. The SAPWorkdir is the SAP GUI for Windows Temp Directory. All temp files and history files are stored within the SAPWorkdir. It is not possible to separate the content of the SAPWorkdir. For example, you cannot save the SAP GUI for Windows History at one location and the Temp files at another.</p> <p>It is recommended to centralize the SAPWorkdir for each user. It should be located on the user's home drive on a centralized fileshare. This prevents uploading and downloading during logon and logoff. Also, having only one SAPWorkdir per user is a great benefit in a Citrix farm with more than one server.</p> <p>HKEY_LOCAL_MACHINE\\Software\SAP\SAP Shared Value Name: SAPworkdir Value Type: REG_EXPAND_SZ Value Data: This key has to be user-independent (For example, %userhome%\sapworkdir or h:\sapworkdir dependent on your infrastructure) to ensure multi-user compatibility. SAP stores temporary files and the history in this folder.</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\\Software\SAP\SAP Shared] "SAPworkdir"="%userhome%\sapworkdir"</pre>
	<p>Disable SAP Auto Updates</p> <p>The following registry tweak allows you to disable SAP GUI auto updates. By default, SAP GUI will try to connect to the update server each time it is started. And if updates are available, they will be automatically installed on the environment. If the user has no administrative rights this could have impacts on the performance.</p> <p>To disable SAP auto updates you will need to delete the following registry key:</p> <p>HKEY_LOCAL_MACHINE\Software\SAP\SAPSetup\SAPstart\AutoUpdate</p>
	<p>Disable the SAP GUI for Windows Splash Screen</p> <p>The following registry tweak disables the SAP GUI for Windows splash screen.</p> <p>HKEY_LOCAL_MACHINE\Software\SAP\General\Appearance Value Name: SplashOff Value Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\SAP\General\Appearance] "SplashOff"=dword:00000000</pre>

Step	Description
	<p>Disable SAP GUI Animation</p> <p>The following registry tweak disables the waiting time animation in Enjoy mode.</p> <p>HKEY_LOCAL_MACHINE\Software\SAP\General\Appearance Value Name: Animation Value Type: REG_SZ Value Data: "Off"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\SAP\General\Appearance] "Animation"="Off"</pre>
	<p>Close SAPLogon when the last SAP connection is closed.</p> <p>The following registry tweak allows you to close the SAPLogon when once the last SAP connection is closed.</p> <p>HKEY_LOCAL_MACHINE\Software\SAP\SAPLogon Value Name: Autoclose Value Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\SAP\SAPLogon] "Autoclose"=dword:00000001</pre>
	<p>Optimizing SAP for Citrix Password Manager</p> <p>The following registry tweak will allow you to configure SAP to display the proper Windows title bar name.</p> <p>As of Patch 2 for SAP GUI 6.40 for Windows, you can display the additional windows title by setting the "ShowAdditionalTitleInFo" registry key. This is necessary to allow Citrix Password Manager to distinguish between different SAP back ends.</p> <p>HKEY_LOCAL_MACHINE\Software\SAP\SAPGUI Front\SAP Frontend Server\Administration Value Name: ShowAdditionalTitleInFo Value Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\SAP\SAPGUI Front\SAP Frontend Server\Administration] "ShowAdditionalTitleInFo"=dword:00000001</pre>

Note: For more information on implementing SAP GUI 6.40 on a Citrix Presentation Server please refer to the following Citrix white paper:

<http://support.citrix.com/servlet/KbServlet/download/9620-102-14774/SAP%20GUI%206.40%20for%20Windows%20WP.pdf>

2.2. Disk Subsystem

The following details tweaks and configurations for the Windows Disk Subsystem. This is in no way a conclusive list and not all tweaks apply in all circumstances.

Step	Description
	<p>Disabling File Locking</p> <p>The following registry tweak specifies whether the ‘lock-and-read’ and ‘write-and-unlock’ performance enhancements are enabled. These features improve performance when an application locks data and then immediately reads the data, or writes data and then immediately unlocks it. It is known that this causes problems with some database applications, with their own locking mechanisms. For example, MS Access and/or JET database.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters Value Name: UseLockReadUnlock Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters] "UseLockReadUnlock"=dword:00000001</pre>
	<p>Tuning the File System - Preventing File Access Stamp Updates</p> <p>The following registry tweak specifies whether NTFS updates the last-accessed timestamp of a file when that file is opened. Because updating the last-accessed timestamp requires writing data to the disk it might be faster if this type of update is disabled. However, some applications may require that files have an accurate last-accessed timestamp.</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\FileSystem Value Name: NtfsDisableLastAccessUpdate Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\FileSystem] "NtfsDisableLastAccessUpdate"=dword:00000001</pre>

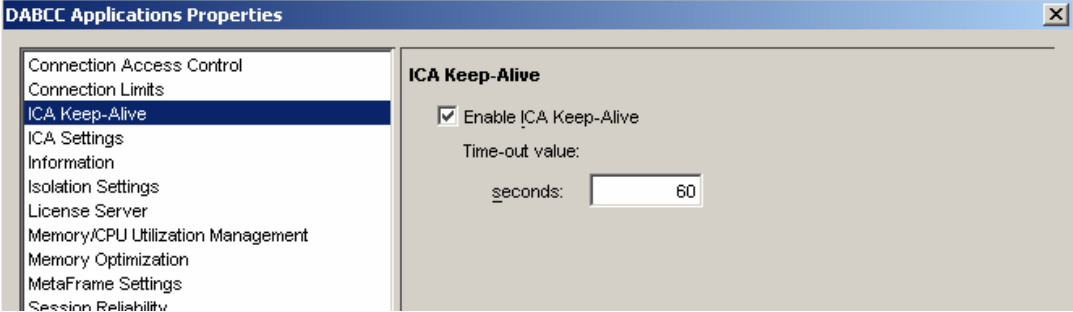
Step	Description
	<p data-bbox="347 268 597 300">Disable Lazy Writes</p> <p data-bbox="347 317 1453 407">The following registry tweaks allows you to disable lazy writes. Lazy writes occur when data is cached instead of immediately written to disk, which is the default. If data is being sent across the network or the server has a caching controller card, disabling lazy writes improves performance.</p> <p data-bbox="347 438 1260 470">HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters</p> <p data-bbox="347 470 553 491">Data Type: DWORD</p> <p data-bbox="347 491 610 512">Value Name: IRPStackSize</p> <p data-bbox="347 512 440 533">Value: 15</p> <p data-bbox="347 575 1308 596">HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Service\LanmanWorkStation\Parameters</p> <p data-bbox="347 596 553 617">Data Type: DWORD</p> <p data-bbox="347 617 656 638">Value Name: UtilizeNTCaching</p> <p data-bbox="347 638 431 659">Value: 0</p> <p data-bbox="347 711 651 743"><i>Recommended .reg file text:</i></p> <div data-bbox="347 743 1469 911" style="border: 1px solid black; padding: 5px;"><pre data-bbox="363 743 1406 890">Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters] "IRPStackSize"=dword:0000000f [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Service\LanmanWorkStation\Parameters] "UtilizeNTCaching"=dword:00000000</pre></div>

2.3. Citrix MetaFrame Presentation Server - ICA

The following details tweaks and configurations for Citrix MetaFrame Presentation Server. This is in no way a conclusive list and not all tweaks apply in all circumstances.

Step	Description
	<p>Disable Citrix Client Audio Mapping</p> <p>The following registry tweak will disable Citrix Client Audio Mapping.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp Value Name: fDisableCam Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp] "fDisableCam"=dword:00000001</pre>
	<p>Disable Citrix Client COM Port Mapping</p> <p>The following registry tweak allows you to disable the Citrix Client COM Port Mapping virtual channel.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp Value Name: fDisableCcm Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp] "fDisableCcm"=dword:00000001</pre>
	<p>Set User Interface and Environment Related Items, Per User</p> <p>The following registry tweak allows you to configure the user interface and environment settings on a per user basis. This includes configurations for such items as, wallpaper, animation effects, and screen savers.</p> <p>HKEY_CURRENT_USER\Control Panel\Desktop</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Control Panel\Desktop] "CursorBlinkRate"="1200" "DragFullWindows"="0" "WaitToKillAppTimeout"="20000" "AutoEndTasks"="1" "MenuShowDelay"="10" "SmoothScroll"=dword:00000000</pre>

Step	Description
	<p>Optimize the User Interface for a Citrix ICA Connection</p> <p>The following registry tweak allows you to configure the user interface and environment settings on a per Citrix Server basis. This includes configurations for such items as, wallpaper, animation effects, and screen savers.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp\UserOverride\Control Panel\Desktop HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp\UserOverride\Control Panel\Desktop\WindowMetrics</p> <p>Note: - This tweak only affects users who have not already created their Citrix Server profile.</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp\UserOverride\Control Panel\Desktop] "AutoEndTasks"="1" "MenuShowDelay"="10" "CursorBlinkRate"="-1" "DragFullWindows"="0" "WaitToKillAppTimeout" = "20000" "SmoothScroll" = dword:00000000 "Wallpaper" = "(none)" [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\ICA-tcp\UserOverride\Control Panel\Desktop\WindowMetrics] "MinAnimate"="0"</pre>
	<p>Killing Processes On logoff</p> <p>The following registry tweak addresses processes that do not close down properly when a user logs out of a seamless application:</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Citrix\wfshell\TWI Value Name: DllName Data Type: Value Data: "seamls20.dll"</p> <p>Value Name: NotifyEvent Data Type: Value Data: "WfshellTwiNotify"</p> <p>Value Name: LogoffCheckSysModules Data Type: Value Data: "ssoshell.exe,ssobho.exe,ssomho.exe,acrodist.exe,acrotray.exe"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Citrix\wfshell\TWI] "DllName"="seamls20.dll" "NotifyEvent"="WfshellTwiNotify" "LogoffCheckSysModules"="ssoshell.exe,ssobho.exe,ssomho.exe,acrodist.exe,acrotray.exe"</pre>

Step	Description
	<p>Enable ICA Keep-Alives on Citrix MetaFrame Presentation Servers</p> <p>The following tweak allows you to enabled ICA Keep-Alives. When users are disconnected from an ICA session due to a physical or other network issue their connection may still appear as active. If they then try to reconnect they will not be able to reconnect to their existing session and will be logged into a new session.</p> <p>When ICA Keep-Alives are enabled the Citrix server will send packets to the client to determine if the connection is still open. If the client device does not respond then the session is placed in to disconnect mode.</p> <p>To enable ICA Keep-Alives you will need to right click the Farm node in the Citrix Presentation Server Management Console and click Properties → click the ICA Keep-Alive node and then click to enable the Enable ICA Keep-Alive checkbox.</p> <p>The Time-out value text box allows you to specify the interval in which the ICA Keep-Alive packages are sent to the client. If the client device does not respond within the Time-out value the session is set to disconnected mode. The time-out value can be set between 1 and 3600 seconds.</p>  <p>Important: When launching a published application with Session Reliability, ICA KeepAlive does not function. With Session Reliability, after an ICA session is disconnected on the client side, the session might be recognized as in “active” status longer than the Sessions to keep active setting indicates.</p>
	<p>Enable ICA Keep-Alives on Servers Running Secure Gateway for MetaFrame</p> <p>If you will be implementing Citrix Secure Gateway for MetaFrame servers then you will be required to enabled ICA keep-Alives on the servers in order to gain the benefits of the of ICA Keep-Alives, as stated above.</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Citrix Value Name: IcaEnableKeepAlive Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: IcaKeepAliveInterval Value Type: DWORD Value Data: 1 – 3600 (decimal)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Citrix] "IcaEnableKeepAlive"=dword:00000001 "IcaKeepAliveInterval"=dword:0000003c</pre>

Step	Description
	<p data-bbox="347 268 922 298">Configure Program Neighborhood Agent URL</p> <p data-bbox="347 317 1419 375">The following registry tweak will allow you to configure the Citrix Program Neighborhood Agent to point to a predefined URL.</p> <p data-bbox="347 407 1125 436">HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\Program Neighborhood Agent</p> <p data-bbox="347 436 602 466">Value Name: Config URL</p> <p data-bbox="347 466 561 495">Value Type: REG_SZ</p> <p data-bbox="347 495 1276 525">Value Data: <url of the Web Interface Server running the Program Neighborhood Agent Portal></p> <p data-bbox="347 543 654 573"><i>Recommended .reg file text:</i></p> <pre data-bbox="347 573 1463 667">Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\Program Neighborhood Agent] "Config URL"="http://webserver.local/Citrix/PNAgent/config.xml</pre>

2.4. Memory Tweaks

The following details tweaks and configurations for the Windows Memory subsystem. This is in no way a conclusive list and not all tweaks apply in all circumstances.

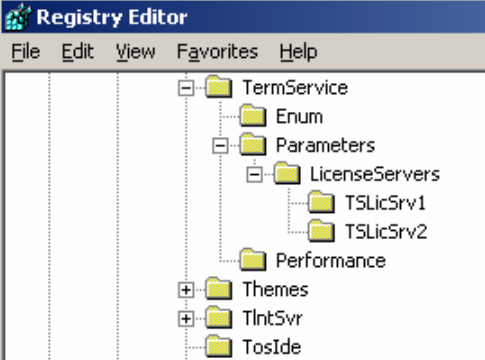
Step	Description
	<p>Improving Windows Kernel Performance</p> <p>The following registry tweak specifies whether kernel-mode drivers and kernel-mode system code can be paged to disk when not in use. Even if you have enough RAM available, Windows will still “page” important operating system components to the pagefile. By enabling the DisablePagingExecutive registry key you will prevent Windows from paging this type of data.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management Value Name: DisablePagingExecutive Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management] "DisablePagingExecutive"=dword:00000001</pre>
	<p>Clear Page File on System Shutdown</p> <p>The following registry tweak specifies whether inactive pages in the paging file are filled with zeros when the system stops. This is a Windows Server 2003 security feature that prevents the pages from being read by another process.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management Value Name: ClearPageFileAtShutdown Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management] "ClearPageFileAtShutdown"=dword:00000001</pre> <p>Note: Implementing this tweak could cause an increase in the time it takes to shutdown the server. If you are in a secure environment I recommend this tweak, if not then beware it will take more time to shutdown the server.</p>

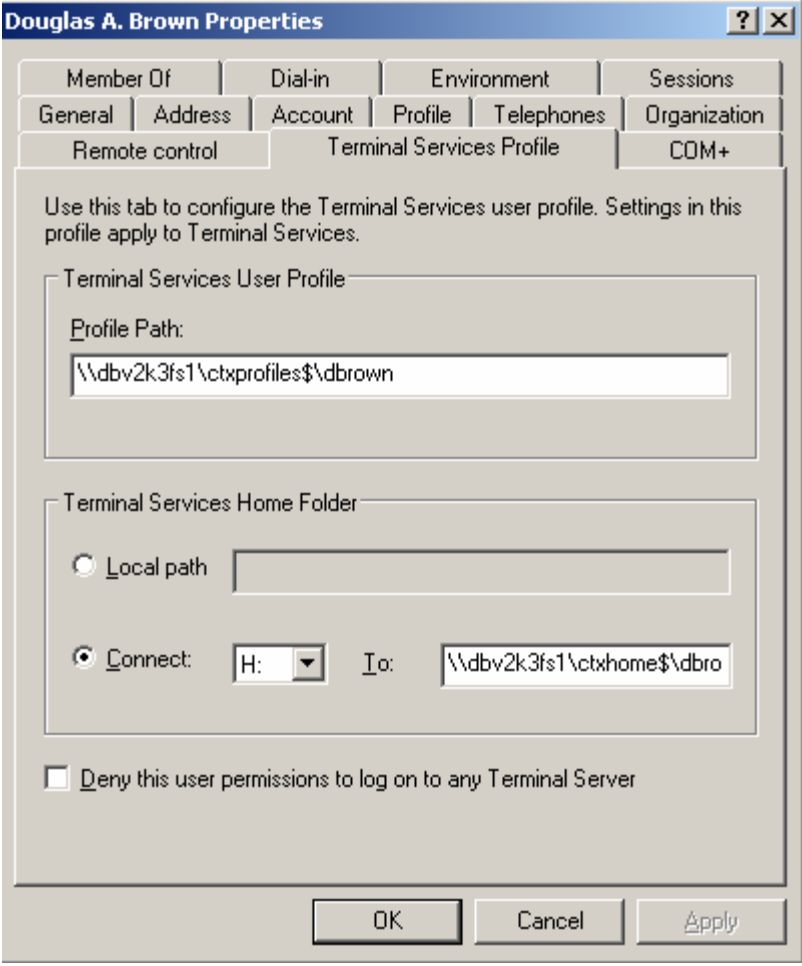
Step	Description
	<p data-bbox="345 268 813 296">Increase the Network Request Buffer</p> <p data-bbox="345 317 1458 436">The following registry tweak can allow you to gain additional performance by modifying the network request buffer size on the Terminal Server. The <code>SizReqBuf</code> value determines how much data is buffered at one time to send to a client. Increasing this value to 65,536 bytes from the default of 4,356 bytes significantly improves LAN Manager file writes.</p> <p data-bbox="345 470 1463 678">The minimum setting is 1024. Small buffers use less memory, and large buffers can improve performance. The exact value that works best in a particular environment depends on the specific configuration of that environment. For an optional value, try 4410 (hexadecimal); this has been shown to work well in a fairly standard Ethernet environment. By default, this setting is 4356 bytes on computers. On servers that have more than 512 MB of memory, this value is increased to 16 KB. A receive buffer that is larger can improve performance on query directory and similar commands, but at the price of more memory per work item.</p> <p data-bbox="345 714 1442 890">Increasing the <code>SizReqBuf</code> value can increase performance significantly in a high-latency environment. However, note that increasing the <code>SizReqBuf</code> value also increases the non-paged pool memory that is used by the LanManServer service. If you increase the <code>SizReqBuf</code> value, monitor non-paged pool to make sure that the change does not affect the performance of the file server. Increasing the <code>SizReqBuf</code> value also proportionately increases the risk that a malicious user might exhaust non-paged pool on the file server.</p> <p data-bbox="345 921 1260 949">HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters</p> <p data-bbox="345 951 586 978">Value Name: <code>SizReqBuf</code></p> <p data-bbox="345 980 553 1008">Data Type: DWORD</p> <p data-bbox="345 1010 586 1037">Value Data: 512 – 65535</p> <p data-bbox="345 1060 1097 1087">For more information please visit: http://support.microsoft.com/?kbid=320829</p> <p data-bbox="345 1115 654 1142"><i>Recommended .reg file text:</i></p> <div data-bbox="345 1144 1463 1241" style="border: 1px solid black; padding: 5px;"> <pre data-bbox="362 1146 1354 1218">Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters] "SizReqBuf"=dword:00003904</pre> </div>

2.5. Microsoft Windows Terminal Server - RDP

The following details tweaks and configurations for Microsoft Terminal Services RDP connections. This is in no way a conclusive list and not all tweaks apply in all circumstances.

Step	Description
	<p>Optimize the User Interface for a Terminal Server RDP Connection</p> <p>The following registry tweak allows you configure user interface and environment settings on a per Terminal Server only basis. Configurations for such items as, wallpaper, animation effects, and screen savers. This tweak only affects users who have not already created their Terminal Server profile.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\RDP-tcp\UserOverride\Control Panel\Desktop HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\RDP-tcp\UserOverride\Control Panel\Desktop\WindowMetrics</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\RDP-tcp\UserOverride\Control Panel\Desktop] "AutoEndTasks"="1" "MenuShowDelay"="10" "CursorBlinkRate"="1200" "DragFullWindows"="0" "WaitToKillAppTimeout" = "20000" "SmoothScroll" = dword:00000000 "Wallpaper" = "(none)" [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\WinStations\RDP-tcp\UserOverride\Control Panel\Desktop\WindowMetrics] "MinAnimate"="0"</pre>
	<p>Change the Listening Port for an RDP Connection</p> <p>The following tweak allows you to change the port used by the RDP protocol.</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\TerminalServer\WinStations\RDP-Tcp\PortNumber Value Name: PortNumber Value Type: DWORD Value Data: 1-5000 (decimal)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\TerminalServer\WinStations\RDP-Tcp\PortNumber] "PortNumber" = dword: 0000D3D</pre>

Step	Description
	<p data-bbox="347 268 1049 296">Hardcode a Preferred Terminal Services License Server</p> <p data-bbox="347 317 1425 344">The following registry tweak allows you to hardcode the preferred Terminal Services License Server.</p> <ol data-bbox="347 380 1433 621" style="list-style-type: none"><li data-bbox="347 380 1433 432">1. Browse to the following registry key: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TermService\Parameters<li data-bbox="347 457 1433 510">2. Click Edit from the File Menu bar → click New → click Key → enter “LicenseServers” as the name of the new key.<li data-bbox="347 535 1433 621">3. Click the newly created LicenseServers key and click Edit from the File Menu bar → click New → click Key → enter the NetBIOS name, or the fully qualified domain name (FQDN), or the IP Address of the license server that you want to use.  <ol data-bbox="347 989 850 1016" style="list-style-type: none"><li data-bbox="347 989 850 1016">4. Repeat step 3 for any additional license servers. <p data-bbox="347 1045 1373 1098">For more information please refer to: http://support.microsoft.com/default.aspx?scid=kb%3Ben-us%3B279561</p>

Step	Description
	<p data-bbox="347 268 1263 298">Configure the User Terminal Server Profile, Drive, and Home Folder Path</p> <p data-bbox="347 321 1461 415">The following Visual Basic Script allows you to configure the Terminal Services Profile configuration settings, including the Terminal Services User Profile, Terminal Services Home Folder, and Drive Letter to on all users in an Windows Server 2003 Active Directory domain.</p> <div data-bbox="347 436 1144 1396">  </div> <pre data-bbox="347 1428 1307 1753"> Const Enabled = 1 Const Disabled = 0 Set objUser = GetObject("LDAP://cn=user,ou=test,dc=citrix,dc=com") objUser.TerminalServicesProfilePath = "" objUser.TerminalServicesHomeDirectory = "" objUser.TerminalServicesHomeDrive = "" objUser.AllowLogon = Enabled objUser.SetInfo </pre>

2.6. Network Tweaks

The following details tweaks and configurations for the Windows Network subsystem. This is in no way a conclusive list and not all tweaks apply in all circumstances.

Step	Description
	<p>Set Mapped Network Drives as Non-Persistent by default</p> <p>The following registry tweak specifies if a network drive will be recreated each time the user logs on. By default, network drives within Windows are persistent. This tweak allows you to make the default of all newly created network drivers as non-persistent, thus the next time the user logs on the network drives are not connected.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Windows NT\CurrentVersion\Network\Persistent Connections Value Name: SaveConnections Value Type: REG_SZ Value Data: "no"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows NT\CurrentVersion\Network\Persistent Connections] "SaveConnections"="no"</pre>
	<p>Disable Retaining Recently Accessed Shares in My Network Places</p> <p>The following registry tweak specifies whether Windows will retain recently accessed shares to the My Network Places folder.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer Value Name: NoRecentDocsNetHood Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer] "NoRecentDocsNetHood"=dword:00000001</pre>

Step	Description
	<p>Improving Connectivity over Inconsistent WAN Links</p> <p>The following registry tweak allows you to improve connectivity over inconstant WAN links and prevent sessions from being disconnected for no real reason. If the quality of a WAN link dramatically decreases after a user connects to a Terminal Server, i.e. your using a Cable modem and additional users logon, the connection can be dropped.</p> <p>The TcpMaxDataRetransmissions entry specifies how many times TCP retransmits an unacknowledged data segment on an existing connection. TCP retransmits data segments until they are acknowledged or until this value expires, at which time the connection is dropped.</p> <p>TCP/IP adjusts the frequency of retransmissions over time. TCP establishes an initial retransmission interval by measuring the round trip time on the connection. The interval doubles with each successive retransmission on a connection, and it is reset to the initial value when responses resume.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters Value Name: TcpMaxDataRetransmissions Data Type: DWORD Value Data: 10 (decimal)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters] "TcpMaxDataRetransmissions"=dword:0000000a</pre>
	<p>Enable TCP Keep-Alives</p> <p>The following registry tweak allows you to configure TCP KeepAlives. They work just like ICA Keep-Alives do and are required to be implemented along side ICA Keep-Alives on both Citrix servers and Secure Gateway server.</p> <p>KeepAliveTime specifies how often TCP sends keep-alive transmissions. TCP sends keep-alive transmissions to verify that an idle connection is still active.</p> <p>KeepAliveInterval Specifies how often TCP repeats keep-alive transmissions when no response is received. TCP sends keep-alive transmissions to verify that idle connections are still active. This prevents TCP from inadvertently disconnecting active lines.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters Value Name: KeepAliveTime Data Type: DWORD Value Data: 1-16777215 (decimal in milliseconds and 1,000 milliseconds = 1 second)</p> <p>Value Name: KeepAliveInterval Value Type: DWORD Value Data: 1-16777215 (decimal in milliseconds and 1,000 milliseconds = 1 second)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters] "KeepAliveTime"=dword:6DDD00 "KeepAliveInterval"=dword:000003e8</pre>

Step	Description
	<p>Prevent Windows from ‘Hanging’ when Users Logs On or Off</p> <p>The following configuration prevents Windows from ‘hanging’ when a client logs on or logs off. The Terminal server together with the connected Terminal Services client computers may stop responding or may pause for several seconds.</p> <p>To address this issue you must turn on the ‘Enable advanced performance’ feature for each hard disk that has write caching enabled and that has its write cache protected by battery backup.</p> <p>From the console desktop right click My Computer → and then click Manage → click Device Manager → click to expand Disk drives → right-click the disk drive that you want to configure, and then click Properties → click the Policies tab → If the Enable write caching on the disk check box is selected, click to select the Enable advanced performance check box → Click OK.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Lanmanserver\Parameters Name: MaxWorkItems Data Type: DWORD Value data: 8196 (decimal)</p> <p>Name: MaxMpxCt Data Type: DWORD Value data: 2048 (decimal)</p> <p>Name: MaxRawWorkItems Data Type: DWORD Value data: 512 (decimal)</p> <p>Name: MaxFreeConnections Data Type: DWORD Value data: 100 (decimal)</p> <p>Name: MinFreeConnections Data Type: DWORD Value data: 32 (decimal)</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Lanmanworkstation\Parameters Name: MaxCmds Data Type: DWORD Value data: 2048 (decimal)</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Session Manager\Configuration Manager Name: RegistryLazyFlushInterval Data Type: DWORD Value data: 60 (decimal)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Lanmanserver\Parameters] "MaxWorkItems"=dword:00002004 "MaxMpxCt"=dword:00000800 "MaxRawWorkItems"=dword:00000200 "MaxFreeConnections"=dword:00000064 "MinFreeConnections"=dword:00000020 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Lanmanworkstation\Parameters] "MaxCmds"=dword:00000800 [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Session Manager\Configuration Manager] "RegistryLazyFlushInterval"=dword:0000003c</pre> <p>Important! You will want to add the above settings to any file servers users connect too.</p> <p>For more information please visit: http://support.microsoft.com/?kbid=324446</p>

2.7. Printing Tweaks

The following details tweaks and configurations for the Windows Printing subsystem. This is in no way a conclusive list and not all tweaks apply in all circumstances.

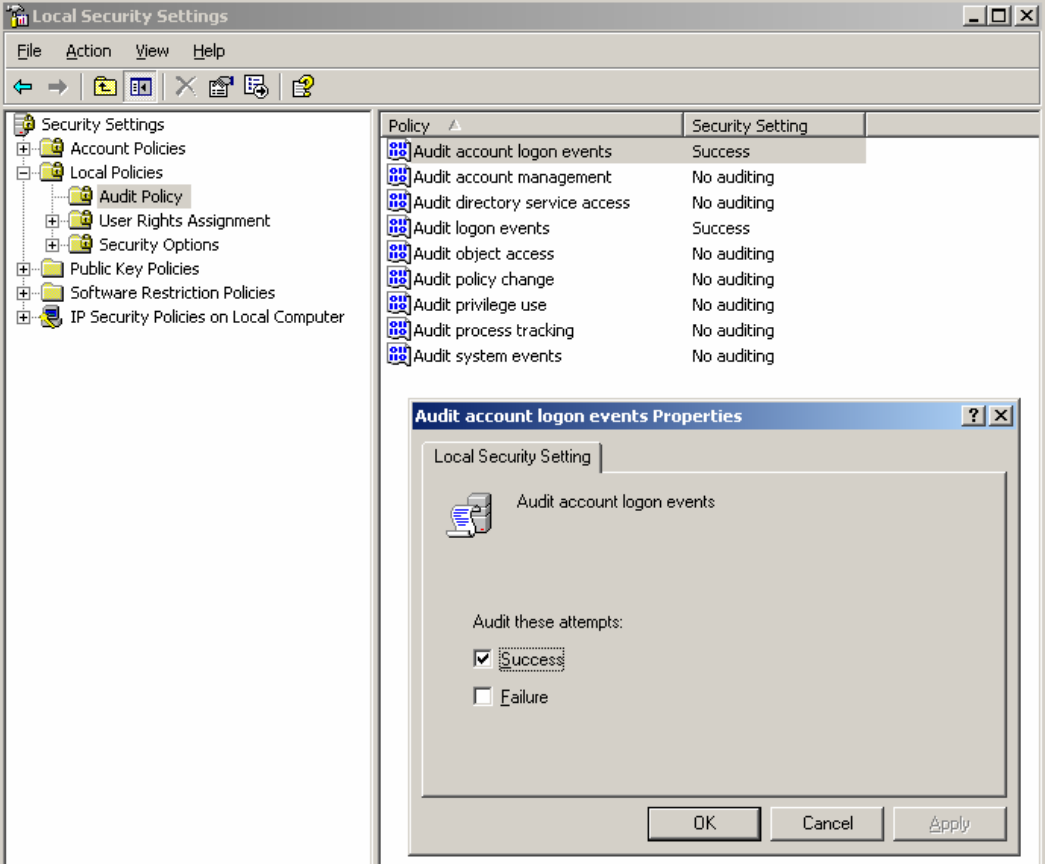
Step	Description
	<p>Changing the Default Spool Directory</p> <p>The following registry tweak will allow you to move the Print Spooler Directory to a directory and disk that contains the freest space. It is also recommended to move the directory to another partition to offload some disk activity from the primary OS drive.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Printers Value Name: DefaultSpoolDirectory Data Type: REG_SZ Value Data: "<Path to printer spool directory"></p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Printers] "DefaultSpoolDirectory"="Path to printer spool directory"</pre>
	<p>Disable System Beep While Printing Jobs</p> <p>The following registry tweak will disable the server from ‘beeping’ every few seconds when a remote job error occurs on a print server.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print Value Name: BeepEnabled Data Type: DWORD Value Data: 0 = The computer does not beep each time a print job is retried. 1 = The computer beeps each time the job is retried.</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print] "BeepEnabled"=dword:00000000</pre>
	<p>Disable Print Spooler Notification PopUp from being Displayed on the Server Console</p> <p>The following registry tweak will disable the print spooler from notifying the end-user that their print job has been completed.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Providers Value Name: NetPopup Data Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Providers] "NetPopup"=dword:00000000</pre>

Step	Description
	<p>Disable Spooler errors from being displayed on the server console</p> <p>The following registry tweak suppresses spooler error messages from being displayed on the server console.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Spooler Value Name: ErrorControl Data Type: DWORD Value Data: 0 = Display all error messages, 1 to suppress system error messages, 2 to suppress all errors</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Spooler] "ErrorControl"=dword:00000002</pre>
	<p>Set Citrix Session Printers to be Retained after Logoff</p> <p>The following registry tweak is worth setting if using “session printers” in a Citrix policy. Without this, all policy created printers are removed when the user logs out. If one of these printers is set as default it will not keep the setting. It also helps with performance as printers do not have to be created at each logon.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\Print Value Name: DefaultPrnFlags Data Type: DWORD Value Data: 00800000</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\Print] "DefaultPrnFlags"=dword:00800000</pre>
	<p>Disable End-User from Being able to Add or Delete Printers</p> <p>The following registry tweak prevents end-users from adding new printers and/or deleting their existing ones.</p> <p>HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer Value Name: NoAddPrinter Data Type: DWORD Value Data: Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: NoDeletePrinter Data Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer] "NoAddPrinter"=dword:00000001 "NoDeletePrinter"=dword:00800001</pre>

Step	Description
	<p data-bbox="347 233 846 264">Disable Print Job Logging In Event Log</p> <p data-bbox="347 281 1463 401">The following registry tweak suppresses the logging of print jobs in the system event log. Normally Windows logs every print job processed by a server in that machine's application event log. Since for the most part these logs fall into the category of "data no one will ever look at," you can configure the spooler service to not make these log entries in the first place.</p> <p data-bbox="347 434 1463 522">To suppress print job event log entries, add a new REG_DWORD value named HKLM\SYSTEM\CurrentControlSet\Control\Print\Providers\EventLog and give it a value of 0. As with all the other printing tweaks, this change won't take effect until you stop and restart the Spooler service.</p> <p data-bbox="347 577 1203 606">HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Providers</p> <p data-bbox="347 611 586 640">Value Name: EventLog</p> <p data-bbox="347 642 553 669">Data Type: DWORD</p> <p data-bbox="347 672 862 699">Value Data: 0 = Disable Logging 1 = Enable Logging</p> <p data-bbox="347 724 656 753"><i>Recommended .reg file text:</i></p> <div data-bbox="347 751 1463 846" style="border: 1px solid black; padding: 5px;"><pre data-bbox="362 751 1240 825">Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Providers] "EventLog"=dword:00000000</pre></div>

2. 8. Security Tweaks

The following details tweaks and configurations to secure your Windows Terminal Services server. This is in no way a conclusive list and not all tweaks apply in all circumstances.

Step	Description
	<p>Enable Auditing in Local Security Policy</p> <p>The following setting configures security auditing in order to allow you to verify successful and unsuccessful logins and system events.</p> <p>Click the Start button → click Settings → click Control Panel → click Administrative Tools → click the Local Security Policy applet → click to expand the Local Policies node → click the Audit Policies folder → Select the Success/Failure events you want to audit.</p> <ul style="list-style-type: none"> • Audit Account Logon Events: Success and Failure • Audit Logon Events: Success and Failure • Audit System Events: Failure  <p>The screenshot shows the 'Local Security Settings' console window. The left pane shows the tree view with 'Local Policies' expanded to 'Audit Policy'. The right pane shows a list of policies with their current settings. The 'Audit account logon events' policy is highlighted, and its properties dialog is open. In the dialog, under 'Audit these attempts', the 'Success' checkbox is checked, and the 'Failure' checkbox is unchecked.</p>

Step	Description
	<p>Clear the Last User's Name that Logged on to Windows from the Login Box</p> <p>The following registry tweak clears the last person's name that logged into the server farm, from the username field of the Microsoft Client.</p> <p>HKEY_LOCAL_MACHINE/SOFTWARE/Microsoft/Windows/CurrentVersion/policies/system Value Name: DontDisplayLastUserName Data Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\system] "DontDisplayLastUserName"=dword:0000001</pre>
	<p>Restrict Users Access to the Console's Floppy and CD-ROM Drives</p> <p>The following registry tweak restricts end-user access to the console's Floppy and CD-ROM drives.</p> <p>HKEY_LOCAL_MACHINE\Software\Microsoft\ WindowsNT\CurrentVersion\Winlogon Value Name: AllocateFloppies Data Type: REG_SZ Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Value Name: AllocateCDRoms Data Type: REG_SZ Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\Microsoft\ WindowsNT\CurrentVersion\Winlogon] "AllocateFloppies"="1" "AllocateCDRoms"="1"</pre>
	<p>Display Legal Notice before Login</p> <p>The following registry tweak displays a legal notice popup dialog box to all users before they log in.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon Value Name: LegalNoticeCaption Data Type: REG_SZ Value Data: "Notice Text"</p> <p>Value Name: LegalNoticeText Data Type: REG_SZ Value Data: "Caption Text:"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon] "LegalNoticeCaption"="Warning:" "LegalNoticeText"="Access to this computer system and associated network, computer resources, or data is restricted to those authorized by <YOUR COMPANY>. This computer and related networks, resources or data may only be used for business purposes of <YOUR COMPANY>. and its customers. Use by unauthorized individual or for an unauthorized purpose is a violation of Federal and/or state law. Violators will be prosecuted."</pre>

2.9. Windows Desktop and Windows Subsystem Tweaks

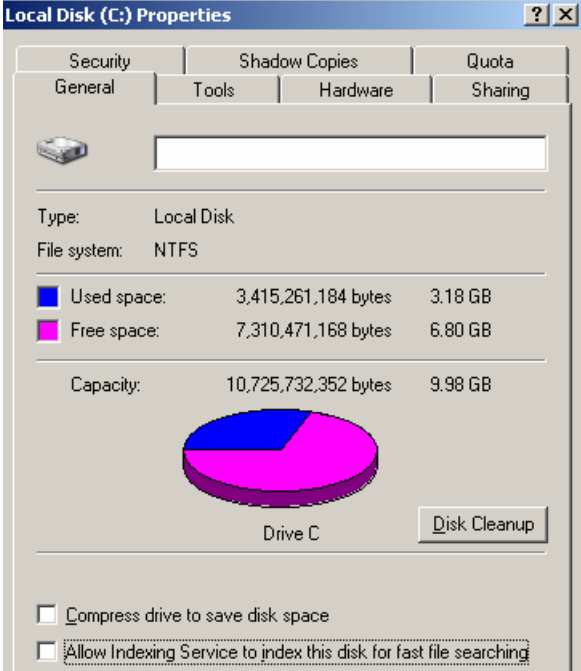
The following details tweaks and configurations for the Windows Desktop and miscellaneous Windows subsystems. This is in no way a conclusive list and not all tweaks apply in all circumstances.

Step	Description
	<p data-bbox="347 384 1029 409">Configure the Server to Recover from a System Crash</p> <p data-bbox="347 432 1382 489">The following registry tweak allows you to specify what happens when the system locks, fails, or terminates abnormally. It consists of the following five sub keys.</p> <ul data-bbox="347 527 1463 1533" style="list-style-type: none"> <li data-bbox="347 527 1463 667"> <p data-bbox="347 527 1305 552">• AutoReboot specifies whether the system restarts automatically after it fails or locks.</p> <p data-bbox="394 554 1175 579">HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\CrashControl</p> <p data-bbox="394 581 646 606">Value Name: AutoReboot</p> <p data-bbox="394 609 597 634">Data Type: DWORD</p> <p data-bbox="394 636 1065 661">Value Data: 0= Do not restart automatically, 1= Restart automatically.</p> <li data-bbox="347 699 1463 898"> <p data-bbox="347 699 1463 785">• CrashDumpEnabled specifies whether Windows Server 2003 writes the contents of the system memory to a log file when the system stops unexpectedly. The contents of this log file can be useful in determining why the system stopped.</p> <p data-bbox="394 787 724 812">Value Name: CrashDumpEnabled</p> <p data-bbox="394 814 597 840">Data Type: DWORD</p> <p data-bbox="394 842 1451 898">Value Data: 0= Debugging information is not written to a file, 1= Complete crash dump is written to a file, 2= Kernel memory dump is written to a file, 3= Small memory dump is written to a file.</p> <li data-bbox="347 930 1463 1098"> <p data-bbox="347 930 1425 987">• LogEvent specifies whether the system writes an error to the System Log in Event Viewer when Windows Server 2003 terminates abnormally.</p> <p data-bbox="394 989 623 1014">Value Name: LogEvent</p> <p data-bbox="394 1016 597 1041">Data Type: DWORD</p> <p data-bbox="394 1043 1451 1098">Value Data: 0 = No events are logged when the system terminates abnormally, 1 = The system writes an error message to the System Log when the system terminates abnormally.</p> <li data-bbox="347 1129 1463 1329"> <p data-bbox="347 1129 1451 1186">• Overwrite specifies whether the system writes over the old recovery file or creates a new recovery file each time the system stops abnormally.</p> <p data-bbox="394 1188 623 1213">Value Name: Overwrite</p> <p data-bbox="394 1215 597 1241">Data Type: DWORD</p> <p data-bbox="394 1243 1451 1329">Value Data: 0 = The system creates a new recovery file for each abnormal stop. This value preserves a record of previous abnormal stops to aid your investigation into the cause of the stops, 1 = The system overwrites the existing recovery file. This value prevents the system from accumulating unused recovery files.</p> <li data-bbox="347 1360 1463 1533"> <p data-bbox="347 1360 1463 1417">• SendAlert specifies whether the system alerts administrators of the computer when the system stops unexpectedly.</p> <p data-bbox="394 1419 623 1444">Value Name: SendAlert</p> <p data-bbox="394 1446 597 1472">Data Type: DWORD</p> <p data-bbox="394 1474 1378 1533">Value Data: 0 = The system does not alert administrators when the system stops, 1 = The system alerts administrators when the system stops.</p> <p data-bbox="347 1564 656 1589">Recommended .reg file text:</p> <pre data-bbox="347 1591 1463 1822">Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\CrashControl] "AutoReboot"=dword:00000001 "CrashDumpEnabled"=dword:00000002 "LogEvent"=dword:00000001 "Overwrite"=dword:00000001 "SendAlert"=dword:00000001 "NMIcrashDump"=dword:00000001</pre>

Step	Description
	<p>Set the Default Path to the Windows source files</p> <p>The following registry tweak sets the default location where the OS can find the Windows source files.</p> <p>HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Setup Value Name: SourcePath Data Type: REG_SZ Value Data: "full path to source files" - for example "D:\I386"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Setup] "SourcePath"="<full path to source files"</pre>
	<p>Disable Dr Watson</p> <p>The following registry tweak disables Dr. Watson. It is used to help detect, decode and log errors that are encountered while windows or windows programs are running. In a Terminal Server environment it might be recommend disabling this logging.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\AeDebug Value Name: AeDebug Data Type: REG_SZ Value Data: "Debugger"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\AeDebug] "Debugger"=""</pre>
	<p>Disable Media Sensing</p> <p>The following registry tweak controls the Windows "Media Sensing" feature. You may use this feature to detect whether your network media is in a "link state." If there is no link, it disables the interface. This may not be a desirable result on a multi-user server.</p> <p>Note If you disable the "Media Sensing" feature, you may experience problems. For example, if you have a computer that has two network adapters and you disable the "Media Sensing" feature, if one network adapter does not work, it is unbound. Additionally, if a default gateway is configured, associated routes are removed so that all traffic goes through the other network adapter.</p> <p>For more information please visit: http://support.microsoft.com/kb/q239924/</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters Value Name: DisableDHCPMediaSense Data Type: DWORD -Boolean Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters] "DisableDHCPMediaSense"=dword:00000001</pre>


Step	Description
	<p>Disabling CD-ROM Autorun Feature</p> <p>The following registry tweak allows you to disable the CDROM autorun feature. By default, Windows Server 2003 examines inserted CD-ROMs and runs the autorun program.</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\CDRom Value Name: Autorun Value Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\CDRom] "Autorun"=dword:00000001</pre>
	<p>Increase the Size of the Icon Cache</p> <p>The following registry tweak allows you to increase the size of the Windows Icon Cache. If your Terminal Server has a large amount of applications installed then you might run out of space for Windows to cache the icons. If this occurs it is possible that some icons will be displayed incorrectly.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer Value Name: Max Cached Icons Value Type Type: REG_SZ Value Data: The number of icons you wish to cache - maximum 2000 (2000=2MB)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer] "Max Cached Icons"="4096"</pre>
	<p>Speedup Application Load Times</p> <p>The following registry tweak has the ability to speed up application load times by pre-loading commonly used files. This does require additional memory so it might not be a good tip for memory staved systems.</p> <p>HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Session Manager\Memory Management\PrefetchParameters Data Name: EnablePrefetcher Data Type: DWORD Value Data: 0 = disabled, 1 = application launch prefetching, 2 = boot prefetching, 3 = application and boot prefetching</p> <p>Note: To clear the prefetcher cache you will need to delete any files located in the \Windows\Prefetch directory.</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SessionManager\Memory Management\PrefetchParameters] "EnablePrefetcher"="3"</pre>

Step	Description
	<p>Set Windows Desktop to use the Classic Start Menu</p> <p>The following registry tweak configures Windows to use the classic Start Menu.</p> <p>HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer Value Name: NoSimpleStartMenu Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer] "NoSimpleStartMenu"=DWORD:00000001</pre>
	<p>Disable Roaming Profile Cache</p> <p>The following registry tweak configures Windows to delete the local user profile when they log off. This helps save disk space as it prevents hundreds of profiles from being cached on each Terminal Server. .</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon Value Name: DeleteRoamingCache Data Type:DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon] "DeleteRoamingCache"=dword:00000001</pre>
	<p>Disable Automatic Network Shortcut Resolution</p> <p>The following registry tweak resolves the potential issue where a shortcut points to the incorrect location. The issue is that Windows Explorer stores not only a drive indicator (N:\Dir\App.exe) but a UNC (\\server\share\app.exe) indicator in each shortcut file. If your copied shortcuts seem to point to their original location instead of to the drive letter shown then fix is for you.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\Explorer Value Name: LinkResolveIgnoreLinkInfo Data Type: DWORD Value Data: Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\Explorer] "LinkResolveIgnoreLinkInfo"=dword:00000001</pre>

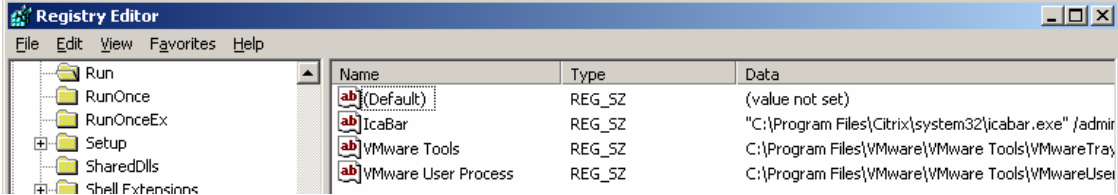
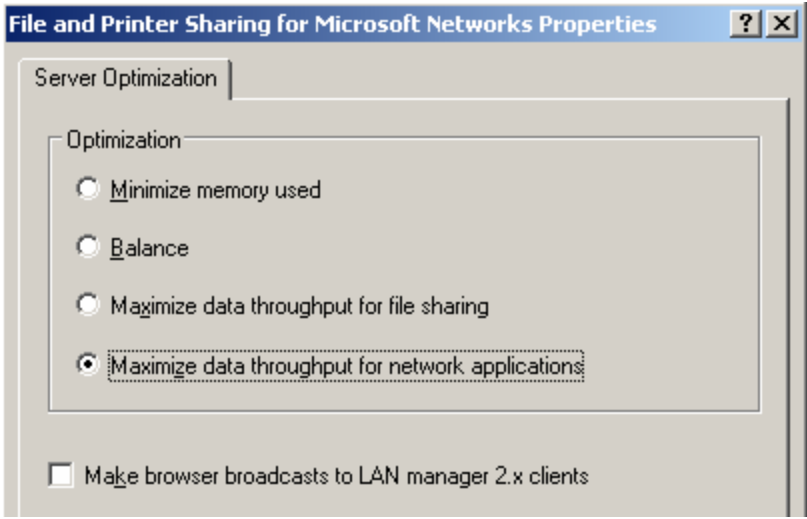
Step	Description
	<p>Remove the Popup Tooltips for the Minimize, Maximize and Close Buttons</p> <p>The following registry tweak removes the tooltips popup from being shown when a users hovers their mouse over the top right Minimize, Maximize and Close buttons.</p> <p>HKEY_CURRENT_USER\Control Panel\Desktop Value Name: MinMaxClose Value Type: REG_SZ Value Data: Value: 0</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Control Panel\Desktop] "MinMaxClose"="0"</pre>
	<p>Disable the File Indexing Service</p> <p>The following tweak will allow you to turn off Windows file indexing. To make searching your hard drive faster Server 2003 keeps a record of all the files on the hard drive. The downside to this is it will slow down normal file commands such as open, close.</p> <ol style="list-style-type: none"> 1. From My Computer right click on the hard drive you wish to disable indexing on and click Properties. 2. At the bottom of the drives properties windows click to uncheck the Allow Indexing Service to index this disk for fast file searching checkbox and click OK.  <p>The screenshot shows the 'Local Disk (C:) Properties' dialog box with the 'General' tab selected. It displays disk statistics for Drive C: (NTFS): Type: Local Disk File system: NTFS Used space: 3,415,261,184 bytes (3.18 GB) Free space: 7,310,471,168 bytes (6.80 GB) Capacity: 10,725,732,352 bytes (9.98 GB)</p> <p>A pie chart below the statistics shows the disk usage. At the bottom, the checkbox for 'Allow Indexing Service to index this disk for fast file searching' is unchecked.</p> <ol style="list-style-type: none"> 3. Click OK to apply the change to all folders and subfolders. 4. Repeat the above steps for each drive.

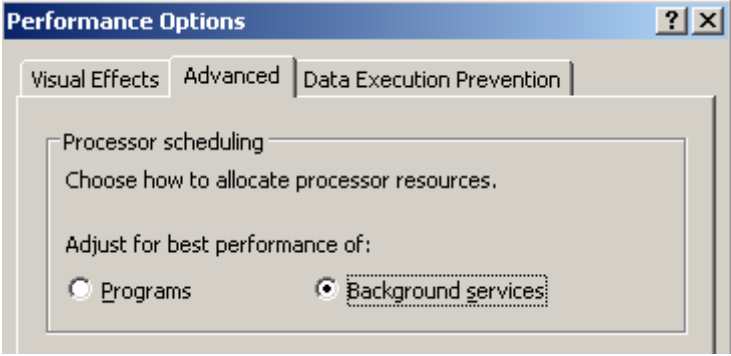
Step	Description
	<p>Configure Windows to Unload Unused DLLs from Memory</p> <p>The following registry tweak allows you to unload DLLs that are not being used. Windows Explorer can cache DLL files in memory for a length of time after they have finished being used. This results in giant amounts of memory being taken up by DLL files that are not even in use.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer Value Name: AlwaysUnloadDLL Value Type: REG_SZ Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer] "AlwaysUnloadDLL"="1"</pre>
	<p>Disable The Notification Area Balloon Tips</p> <p>The following registry tweak allows you to disable the notification area balloon tips from appearing in a user session.</p> <p>Value Name: EnableBalloonTips Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced] "EnableBalloonTips"=dword:00000000</pre>
	<p>Disable Balloon Tips on Start Menu Items</p> <p>The following registry tweak disabled Windows from presenting you with a start menu balloon tip when you hover the cursor over the Start menu, a Start menu item, or over a notification area icon.</p> <p>HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer Value Name: NoSMBalloonTip Value Type: DWORD Value Data: 0 = Disabled, 1 = Enabled</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer] "NoSMBalloonTip"=DWORD:00000001</pre>

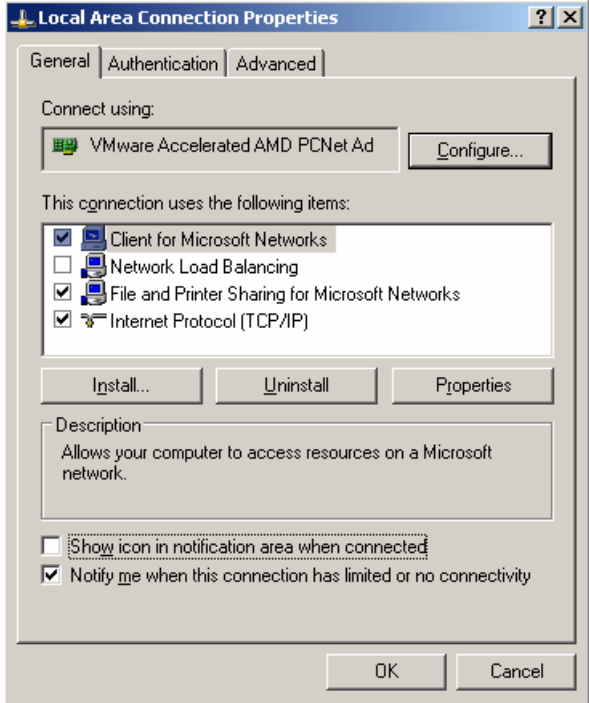
Step	Description
.	<p>Disable Console System Popup Messages</p> <p>The following registry tweak suppresses system error messages from appearing on the system console. This is extremely important in a Terminal Server environment as there is not always someone click to accept and close the error messages.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Windows Value Name: ErrorMode Data Type: DWORD Value Data: 0 = All messages are visible, 1 = Only system messages are invisible, 2 = All messages are invisible.</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Windows] "ErrorMode"=dword:00000002</pre>
	<p>Set Event Log to Retention and Maximum Log Size</p> <p>The following registry tweak allows you to configure if the Event Log's retention method and log size. The same value name, data type, and value data is used for all three events logs.</p> <p>HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Application HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Security HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\System Value Name: MaxSize Data Type: DWORD Value Data: 0x10000-0xFFFF0000 (bytes, in 64 KB increments) (64 KB-4 GB)</p> <p>Value Name: Retention Data Type: DWORD Value Data: 0 = Overwrite as needed, 4294967295 = Do not overwrite, The number of days you wish to retain events for, multiplied by 86400 (the number of seconds in one day)</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Application] "MaxSize"=dword:00200000 "Retention"=dword:00000000 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\Security] "MaxSize"=dword:00200000 "Retention"=dword:00000000 [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\EventLog\System] "MaxSize"=dword:00200000 "Retention"=dword:00000000</pre> <p>Note: On Windows 2000 the Evtlogs had a standard size of only 512 KB and didn't overwrite as needed, in that case you had to tweak the settings in order to have Eventlogs that really logged something. As a Terminal Server generates a lot of events you need a bigger Eventlog to look back a couple of days.</p> <p>As per Windows 2003 the Eventlogs have a standard setting of 16 MB and are set to overwrite as needed, in most cases there is no need to change these settings.</p> <p>You can do a lot in Eventlog management, but the most important thing is to prevent the Eventlog from being overcrowded by Printevents, that will be in a different group in this forum.</p>

Step	Description
	<p>Set the Name of the My Computer Icon to the Current User and Machine Name</p> <p>The following registry tweak sets the text of the “My Computer” desktop icon to read, “<username> on <computer name>” This comes in helpful when deploying Terminal Server / Citrix desktop and can be a very useful tool if the user contacts the help desk.</p>  <p>HKEY_CLASSES_ROOT\CLSID\{20D04FE0-3AEA-1069-A2D8-08002B30309D}</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CLASSES_ROOT\CLSID\{20D04FE0-3AEA-1069-A2D8-08002B30309D}] @="My Computer" "InfoTip"="Displays the files and folders on your computer" "LocalizedString"=hex(2):25,00,55,00,53,00,45,00,52,00,4e,00,41,00,4d,00,45,00,\ 25,00,20,00,6f,00,6e,00,20,00,25,00,43,00,4f,00,4d,00,50,00,55,00,54,00,45,\ 00,52,00,4e,00,41,00,4d,00,45,00,25,00,00,00</pre>
	<p>Disable Caching Recent Documents</p> <p>The following registry tweak disables Windows from caching the recently accessed documents. Even if the Documents folder has been removed from the Start menu, this process still occurs if not disabled.</p> <p>HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer Value Name: NoRecentDocsHistory Value Type: DWORD Value Data: 0 = Enable history, 1 = Disable history</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer] "NoRecentDocsHistory"=dword:00000001</pre> <p>Note: This registry key can be set per user and/or per server. To configure it per-user please use the HKEY_Current_User key. To configure per server please use the HKEY_Local_Machine key.</p>

Step	Description
	<p>Enable Windows Classic Style Search</p> <p>The following registry tweaks allows you to enable the classic style Windows Search box.</p> <p>KEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\CabinetState Value Name: Use Search Asst Value Type: REG_SZ Value Data: "no"</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\CabinetState] "Use Search Asst"="no"</pre>
	<p>Password Expire Warning</p> <p>The following registry tweak specifies how long before a password expires that the system prompts the user to change the password.</p> <p>When using a FAT client, logging on to a Citrix session, it can be handy to decrease the Password Expire Warning notice on the Citrix Server. Otherwise users logging on get a expire notice twice.</p> <p>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon Value Name: passwordexpirywarning Value Type: DWORD Value Data: 0x0-0xFFFFFFFF days</p> <p>Recommended .reg file text:</p> <pre>Windows Registry Editor Version 5.00 [HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon] "passwordexpirywarning"=dword:00000005</pre>

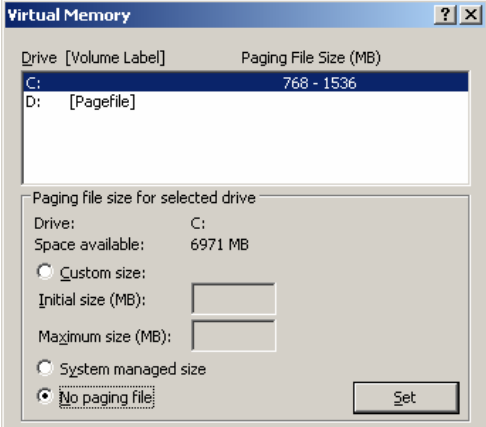
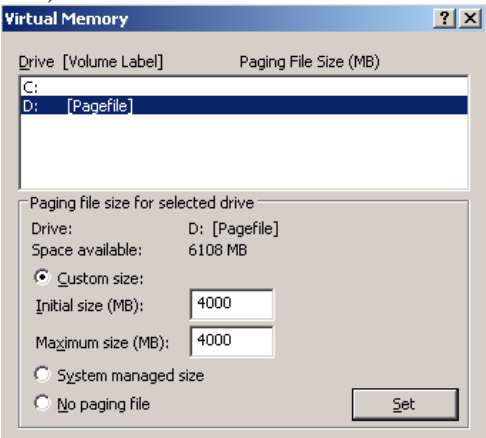
Step	Description
	<p>Remove Unnecessary Applications From Running in each Session</p> <p>The following allows you to remove unnecessary applications from being executed each time a user logs in. Through the process of installing Windows, Citrix and applications you will find that you tend to collect a fair amount of applications that execute upon a user login. Such applications as the Adobe Acrobat Helper, Antivirus agents, the Citrix ICA Bar and many more. It is recommended to remove the applications that are just not needed. There is no science to this as every system is different but here are just a few examples:</p> <p>Examples: ICABAR.EXE (MetaFrame administrator toolbar) NWTRAY.EXE (Netware tray application)</p> <p>HKEY_LOCAL_MACHINE \Software\Microsoft\Windows\Current Version\Run</p> 
	<p>Optimize the File System Cache</p> <p>For servers with less than 2GB of physical memory installed it is recommend to configure the file system cache to optimize itself for network related applications. This setting is better for application servers and those with internal memory management features.</p> <p>Click the Start button → click Settings → click Control Panel → click Network and Dial-Up Connections → click Local Area Network → click the Properties button → double click File and Printer Sharing for Microsoft Networks → click to select the Maximize Throughput for Network Applications radio button and click OK to save the setting and finish.</p> 

Step	Description
	<p>Optimize Processor Scheduling for a Equal CPU Timeslice</p> <p>The following configuration allows you to configure how long individual threads are allowed to execute on the CPU before a context switch occurs and a new thread is processed. By default, Windows is optimized for foreground application. This allows the server applications to gain more of the CPU's time. In a Terminal Server world this is not recommend as we want all applications to share the CPU equally.</p> <p>Click Start → click Settings → click Control Panel → click the System applet → click the Advanced tab → click the Settings button in the Performance section → click the Advanced tab → then click the Background services radio button found in the "Processor Scheduling" section.</p> 
.	<p>Disable OS2 and POSIX Subsystems</p> <p>The following registry tweak allows you to disable the OS2 and Posix subsystems. If you do not have a need for these, disabling them can free up an incremental amount of server resources. Be sure you aren't using any OS2 or POSIX apps before proceeding since they won't run To disable these subsystems, remove the following keys under</p> <p>Delete the following registry entry.</p> <p>HKEY_LOCAL_MACHINE \System\CurrentControlSet\Control\Session Manager\Subsystems]</p> <p>Value Name:Posix Data Type: REG_EXPAND_SZ Value Data: %SystemRoot%\system32\psxss.exe</p>

Step	Description
	<p data-bbox="345 268 1185 298">Reduce ICA Traffic by Disabling the Windows Network Status Icon</p> <p data-bbox="345 317 1466 495">In Windows 2003 Server there is an available option to show the network icon in the system tray. When this option is selected, a network icon is displayed in the system tray within the session, and this network icon blinks each time network traffic occurs. Because the network icon blinks for each update, an infinite feedback loop occurs. When the network icon in the system tray blinks, it causes the ICA session to update, and because the ICA session is being updated, network traffic occurs which causes the network icon to blink, thus causing the infinite loop.</p> <p data-bbox="345 531 1409 588">Click the Start button → click Settings → click Control Panel → click the Network Connections applet → right click the Local Area Connection icon and click Properties . .</p>  <p>The screenshot shows the 'Local Area Connection Properties' dialog box with the 'General' tab selected. The 'Connect using:' section shows 'VMware Accelerated AMD PCNet Ad' with a 'Configure...' button. Below, 'This connection uses the following items:' lists several services: 'Client for Microsoft Networks' (checked), 'Network Load Balancing' (unchecked), 'File and Printer Sharing for Microsoft Networks' (checked), and 'Internet Protocol (TCP/IP)' (checked). At the bottom, the 'Show icon in notification area when connected' checkbox is unchecked, and 'Notify me when this connection has limited or no connectivity' is checked. Buttons for 'Install..', 'Uninstall', 'Properties', 'OK', and 'Cancel' are visible.</p>

Step	Description																																				
	<p data-bbox="345 268 857 300">Disable Unnecessary Windows Services</p> <p data-bbox="345 317 1450 375">It is recommended to disable any unnecessary Windows Services. The following table details Windows Services that you may wish to modify:</p> <table border="1" data-bbox="345 405 1385 1392"> <thead> <tr> <th data-bbox="345 405 1097 436">Windows Service Name</th> <th data-bbox="1097 405 1385 436">Recommend Setting</th> </tr> </thead> <tbody> <tr> <td data-bbox="345 436 1097 489">Application Management</td> <td data-bbox="1097 436 1385 489">Manual</td> </tr> <tr> <td data-bbox="345 489 1097 541">Alerter</td> <td data-bbox="1097 489 1385 541">Disabled</td> </tr> <tr> <td data-bbox="345 541 1097 594">Computer Browser</td> <td data-bbox="1097 541 1385 594">Disabled</td> </tr> <tr> <td data-bbox="345 594 1097 646">Distributed file system</td> <td data-bbox="1097 594 1385 646">Disabled</td> </tr> <tr> <td data-bbox="345 646 1097 699">Distributed link tracking client</td> <td data-bbox="1097 646 1385 699">Disabled</td> </tr> <tr> <td data-bbox="345 699 1097 751">Distributed transaction coordinator</td> <td data-bbox="1097 699 1385 751">Disabled</td> </tr> <tr> <td data-bbox="345 751 1097 804">Error Reporting Service</td> <td data-bbox="1097 751 1385 804">Disabled</td> </tr> <tr> <td data-bbox="345 804 1097 856">Fax Service</td> <td data-bbox="1097 804 1385 856">Manual</td> </tr> <tr> <td data-bbox="345 856 1097 909">File Replication</td> <td data-bbox="1097 856 1385 909">Manual</td> </tr> <tr> <td data-bbox="345 909 1097 961">Help and Support</td> <td data-bbox="1097 909 1385 961">Disabled</td> </tr> <tr> <td data-bbox="345 961 1097 1014">HTTP SSL</td> <td data-bbox="1097 961 1385 1014">Disabled</td> </tr> <tr> <td data-bbox="345 1014 1097 1066">License Logging</td> <td data-bbox="1097 1014 1385 1066">Manual</td> </tr> <tr> <td data-bbox="345 1066 1097 1119">Messenger</td> <td data-bbox="1097 1066 1385 1119">Disabled</td> </tr> <tr> <td data-bbox="345 1119 1097 1171">Portable Media Serial Number Service</td> <td data-bbox="1097 1119 1385 1171">Manual</td> </tr> <tr> <td data-bbox="345 1171 1097 1224">Shell Hardware Detection</td> <td data-bbox="1097 1171 1385 1224">Disabled</td> </tr> <tr> <td data-bbox="345 1224 1097 1276">Windows Audio</td> <td data-bbox="1097 1224 1385 1276">Disabled</td> </tr> <tr> <td data-bbox="345 1276 1097 1329">Wireless Configuration</td> <td data-bbox="1097 1276 1385 1329">Disabled</td> </tr> </tbody> </table>	Windows Service Name	Recommend Setting	Application Management	Manual	Alerter	Disabled	Computer Browser	Disabled	Distributed file system	Disabled	Distributed link tracking client	Disabled	Distributed transaction coordinator	Disabled	Error Reporting Service	Disabled	Fax Service	Manual	File Replication	Manual	Help and Support	Disabled	HTTP SSL	Disabled	License Logging	Manual	Messenger	Disabled	Portable Media Serial Number Service	Manual	Shell Hardware Detection	Disabled	Windows Audio	Disabled	Wireless Configuration	Disabled
Windows Service Name	Recommend Setting																																				
Application Management	Manual																																				
Alerter	Disabled																																				
Computer Browser	Disabled																																				
Distributed file system	Disabled																																				
Distributed link tracking client	Disabled																																				
Distributed transaction coordinator	Disabled																																				
Error Reporting Service	Disabled																																				
Fax Service	Manual																																				
File Replication	Manual																																				
Help and Support	Disabled																																				
HTTP SSL	Disabled																																				
License Logging	Manual																																				
Messenger	Disabled																																				
Portable Media Serial Number Service	Manual																																				
Shell Hardware Detection	Disabled																																				
Windows Audio	Disabled																																				
Wireless Configuration	Disabled																																				
	<p data-bbox="345 1461 841 1493">Implement any Citrix Security Bulletins</p> <p data-bbox="345 1509 1463 1568">It is recommended to verify all Citrix Security Bulletins. A complete list of Citrix Security Bulletins can be found at: http://support.citrix.com/latestsecurityall!execute.jspa.</p>																																				

Step	Description
	<p>Rename the 'Local Administrator' Account</p> <p>It is recommended to rename the local administrator account as this is the first place a hacker starts when attempting to break into a server.</p> <p>It is also important to prevent people from using this account for auditing purposes as if everyone was using the same administrator account then you loose the ability for admin accountability.</p>
	<p>Install Any Remaining Microsoft Critical Updates via Windows Update</p> <p>For security and stability reasons you will want to verify the system is at the latest Microsoft Windows service pack and Hotfix levels. This can be done through numerous methods. The following are just a few tools to ease in this process.</p> <p>Microsoft Windows Update Services http://www.microsoft.com/windowsserversystem/updateservices/default.msp</p> <p>Microsoft Windows Update http://update.microsoft.com</p> <p>RES Wisdom http://www.realenterprisesolutions.com</p> <p>Microsoft Systems Management Services (SMS) http://www.microsoft.com/smsserver/default.msp</p>
	<p>Defrag System Hard Drives</p> <p>Run disk defragmentation software on all server drives. Defragmentation is a process that eliminates fragmentation in file systems. It does this by physically reorganizing the contents of the disk in order to store the pieces of each file in order while creating more continuous free space for future files. This is extremely important as once you finish installing Microsoft Windows, Citrix MetaFrame Presentation Server and the applications you system will become very fragmented, thus slowing down file read and write access. Due to the very dynamic aspect of a Terminal Server, disk defragmentation should be run as often as possible.</p> <p>Note: Before you defrag the server's hard drives you will want to empty the Recycle Bin to clear up free space so it can be properly organized during the defragmentation process.</p> <p>Example Script: The following script defrags all hard drives on a server. I recommend adding it to the server and running it through a "Scheduled Task".</p> <pre data-bbox="347 1514 1468 1835"> 'defrag.vbs Defrags all hard disks - This can be run as a Scheduled Task Set WshShell = WScript.CreateObject("WScript.Shell") Dim fso, d, dc Set fso = CreateObject("Scripting.FileSystemObject") Set dc = fso.Drives For Each d in dc If d.DriveType = 2 Then Return = WshShell.Run("defrag " & d & " -f", 1, TRUE) End If Next Set WshShell = Nothing </pre>

Step	Description
	<p data-bbox="347 268 1057 298">Configure the Server Pagefile for Optimum Performance</p> <p data-bbox="347 317 1133 346">The following defines how to tune the pagefile for optimum performance.</p> <ol data-bbox="347 380 1446 590" style="list-style-type: none"> <li data-bbox="347 380 1446 470">1. Click the Start button → click Settings → click Control Panel → double click the System applet → click on the Advanced tab → click the Settings button in the Performance box → click the Advanced tab → and click the Change button. <li data-bbox="347 499 1446 590">2. Click to select the drive hosting the current page file and then clear the Initial size and Maximum size text boxes → click to select the No Paging File radio button → Click the Set button and then reboot the server when prompted.  <ol data-bbox="347 1052 1446 1377" style="list-style-type: none"> <li data-bbox="347 1052 1446 1142">3. Once the server has been rebooted, ignore any error messages and defrag the system as documented above. This will create a volume with enough continuous space to prevent against a fragmented pagefile. <li data-bbox="347 1171 1446 1289">4. Return to the Virtual Memory window and select the drive you wish to create the pagefile on. If you have multiple physical drives then you will want to select the drive that is the least busy and/or fastest. If you only have disks configured as RAID 1, then you will want to place the Pagefile on it as it will be the fastest drive. <li data-bbox="347 1318 1446 1377">5. Set the PAGEFILE to 2.5 times the total amount of physical RAM installed on the server (4095 MB max) and click Set.  <p data-bbox="347 1850 1133 1879">Click OK to save the new page file and reboot the server when prompted.</p>

Step	Description
	<p data-bbox="347 270 1166 302">Remove Unwanted Applications Shortcuts from Programs Group</p> <p data-bbox="347 317 1425 380">You will now want to clean up the Programs Group by removing any unwanted application shortcuts. For example, Outlook Express, Address Book, and many more.</p> <p data-bbox="347 411 748 438">Remove any unwanted shortcut from:</p> <ul data-bbox="396 443 1268 537" style="list-style-type: none"><li data-bbox="396 443 1073 470">• C:\Documents and Settings\All Users\Start Menu\Programs<li data-bbox="396 474 1110 501">• C:\Documents and Settings\Default User\Start Menu\Programs<li data-bbox="396 506 1268 533">• C:\Documents and Settings\Default User.<i>domain_name</i>\Start Menu\Programs
	<p data-bbox="347 594 1040 625">Cleanup Any Miscellaneous Event Log Error Messages</p> <p data-bbox="347 640 1463 737">We are now on the last step of installing and configuring Microsoft Windows Server 2003 with Citrix Presentation Server 4.0. This being the case it is recommended to verify and clean up any miscellaneous Event Log error messages that might be logged.</p>