



## Windows Tuning Guide for vSpace®

Configuration Recommendations for Windows

### Introduction

NComputing products are designed to extend standard desktop PCs and lower the average cost of computing in almost any environment. However, the default configurations on many systems are not optimized for this sort of multi-user environment. This document is designed to help you streamline your host PC and operating system to bring about the best performance and compatibility possible. It contains a variety of minor tweaks and advanced configurations that will help you get the most out of your NComputing deployment.

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## Windows Tuning

These configurations are designed to optimize the Windows operating system itself. They are broken down into Compatibility Tweaks and Performance Tweaks.

### Compatibility

#### Windows User Profiles

Both local and domain user accounts can be accessed through an NComputing terminal, as is the case with a standalone PC. These are standard Windows accounts and are created and managed through Windows in the same way you would any other user account. User accounts accessed through an NComputing terminal will retain their folder access settings, drive mapping, and group policies. It should be noted, however, that users on NComputing Virtual Desktop Devices are treated as Remote users for the purpose of some settings and policies.

#### Remote Logon Policy

By default, Windows only allows Terminal Services (TS) or Remote Desktop Services (RDS) logins for Administrators and Remote Desktop Users. To allow access for other users or user groups, please open the Group Policy Editor (Run > "gpedit.msc") and navigate to [Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment]. Under this category, double-click the policy object named "Allow log on through Terminal Services" or "Allow log on through Remote Desktop Services", and add the desired user or user group. To enable all users with local logon rights, add "Everyone" to this policy.

#### Data Execution Prevention

To help ensure NComputing's services are able to run properly, Data Execution Prevention (DEP) should be set to "Essential Windows programs and services only". To make this configuration, right-click My Computer and go to Properties > Advanced (tab) > Performance Settings > Data Execution Prevention (tab).

#### Enable XP Themes

1. Go to Start > Run > "services.msc" > OK. Change the "Themes" service to "Automatic" and click "Start"
2. Go to Start > Run > "gpedit.msc" > OK. Expand [User Configuration > Administrative Templates > Control Panel > Display > Desktop Themes]. Change "Load a specific visual style file or force Windows Classic" to "Enabled" and point it toward "%windir%\Resources\Themes\Luna\luna.msstyles".
3. Click Apply

#### Remove IE Enhanced Security Module

1. Start > control panel > add remove programs
2. Select "Add/Remove Windows Components"
3. Uncheck "Internet Explorer enhanced security configuration"
4. Continue and complete the uninstallation.

### Disable CD-ROM Autoplay (At the Administrator's discretion)

Setting the following registry value will prevent the CD-ROM auto-play prompt from appearing on all terminals.

1. Start>Run>Regedit>HKLM>System>CurrentControlSet>Services>CdRom
2. Set Autorun DWORD value to 0

### Disable "First Run" Page in Internet Explorer

To prevent all users from needing to go through the process of Internet Explorer's custom set up you can instead set the following registry values:

1. Launch the Group Policy Editor (Start > Run > "gpedit.msc")
2. Navigate to [Computer Configuration > Administrative Templates > Windows Components > Internet Explorer]
3. Double-click "Prevent performance of First Run Customize Settings"
4. Set the value to "Enabled"
5. Once enabled, you must make one of two choices from the available drop-down menu:
  - a. Skip Customize Settings, and go directly to the user's home page.
  - b. Skip Customize Settings, and go directly to the "Welcome to Internet Explorer" Web page.
6. A restart may be necessary for this configuration to take effect.

**Note:** If you disable or do not configure this policy setting, each user will go through the regular "First Run" process when launching Internet Explorer.

### Disable Recursive Explorer Events

1. Start > Run > Regedit > HKLM > Software > Microsoft > Windows > CurrentVersion > Policies\explorer
2. Edit > New > DWORD Value "NoRemoteChangeNotify" set value to 1
3. Edit > New > DWORD Value NoRemoteRecursiveEvents set value to 1

### Disable Winlogon Timeout (At the Administrator's discretion)

By default, a terminal that is connected to a host but not logged in will disconnect after a certain period of time. This is to prevent too many idle sessions from sitting at the Windows login screen for extended periods of time, using up available sessions. However, in certain configurations (such as when a terminal has been configured to "auto-connect" to a host or hosts) this can be detrimental. To disable this function, make the following registry change.

Start>Run>regedit>HKU>.Default>Control Panel>Desktop>ScreenSaveTimeOut – change value to 100

## **Disable Screensaver Password (At the Administrator's discretion)**

By default in most Active Directory environments, a user's session would be "locked" after going to a screensaver. This can be disabled in a system's local policy if desired.

1. Click Start > Run
2. Type in gpedit.msc and Click OK.
3. Expand User Configuration > Administrative Templates > Control Panel.
4. Click the Display container.
5. In the Details pan, double click Password protect the screen saver.
6. Click Disabled.
7. Click OK.

## **Performance**

### **Windows Performance Options**

The speed and responsiveness of your vSpace host can be easily optimized within Windows. Disabling certain visual effects will remove graphical overhead, and by configuring the operating system to favor application processes over services, applications become more visually responsive, improving the overall user experience. To make these configurations, right-click My Computer and go to Properties > Advanced (tab) > Performance Settings. From here:

- Visual Effects – To reduce graphical overhead, uncheck any unneeded visual effects in this list. To remove all effects, simply click "Adjust for best performance". It is important to note that this will also disable the Windows Themes, and return to a Windows Classic appearance.
- Processor Scheduling – Located under the "Advanced" tab, improve user experience by setting this to "Programs"
- Virtual Memory – System performance can be greatly affected by the size and management of virtual memory, called the "Paging File". This should be set to "System Managed" except by advanced users.

### **Disable Excess Processes**

To further streamline your host computer, it may be desirable to disable certain start-up programs and background services, which will use up system resources. Go to Start > Run > "msconfig" > OK to launch the System Configuration tool. Under the Services and Startup tabs, uncheck any service or program that is not needed during start-up.

### **Force Off-Screen Compositing**

Certain elements of Internet Explorer's rendering behavior are inefficient in a multi-user or terminal services environment, and can be disabled to improve performance. These steps will disable one such element, called "Off-Screen Compositing":

1. Open Notepad and copy-paste the following into a new text file:

```
CLASS USER
CATEGORY !!AdditionalSettings
  CATEGORY !!InternetExplorer
    POLICY !!ForceOffscreenComposition
      KEYNAME "Software\Microsoft\Internet Explorer\Main"
      PART !!ForceOffscreenComposition_Help TEXT END PART
      VALUENAME "Force Offscreen Composition"
      VALUEON NUMERIC 1
      VALUEOFF NUMERIC 0
    END POLICY ; !!ForceOffscreenComposition
  END CATEGORY ; !!InternetExplorer
END CATEGORY ; !!AdditionalSettings
[strings]
AdditionalSettings=Additional Settings
InternetExplorer=Internet Explorer
ForceOffscreenComposition=Force Offscreen Composition
ForceOffscreenComposition_Help=Force Offscreen Composition
```

2. Save the text document with an ".adm" extension, and a filename of your choice. (for example, "offscreen.adm")
3. Start the Group Policy Editor (Start > Run > "gpedit.msc")
4. Under "User Configuration", highlight Administrative Templates
5. Go to View > Filtering and uncheck "Only show policy settings that can be fully managed", then click "OK"
6. Right-click Administrative Templates and click "Add/Remove Templates". Click "Add" and point to the text file you just created. Click "Close" to apply the Template.
7. Navigate to Administrative Templates > Additional Settings and click "Internet Explorer" to view the new policy, called "Force Offscreen Composition".
8. Double-click this policy and change the value to "Enabled".

## SMB Traffic Optimization

To reduce excess SMB (Server Message Block) traffic and improve overall file server performance, it is recommended that certain changes be made to the registry as part of the general OS configuration process. Microsoft has created a write-up on these recommendations and their associated registry locations:

<http://blogs.technet.com/b/askperf/archive/2007/09/21/windows-explorer-and-smb-traffic.aspx>

To save time with these configurations, you can copy the provided registry data into a text editor, save it as "smbtweaks.reg", and double-click it. This will run all of the registry changes automatically, rather than requiring a time-consuming manual configuration.

## NComputing Tweaks

### vSpace Installation

1. Download NComputing VSpace software from [www.ncomputing.com/downloads](http://www.ncomputing.com/downloads)
2. Install the software according to recommended procedure (see User Guide at [www.ncomputing.com/documentation](http://www.ncomputing.com/documentation))

### vSpace Registration

NComputing products must be registered before use. Please see the User Guide for more information on this process ([www.ncomputing.com/documentation](http://www.ncomputing.com/documentation))

### L-Series Firmware Updates

Firmware updates are recommended for any new L300 products prior to deployment. Please see the User Guide or search our online Knowledgebase for more information: [www.ncomputing.com/support](http://www.ncomputing.com/support).

### L300 Firmware Password

The L300 device can be protected from tampering by setting a firmware password. This setting can be found in Device Setup, under the “Password” tab.

### Server Roll-over Configuration

To reduce downtime in case of a server failure, multiple host pcs may be defined for a single L300 device. If the first host is unresponsive, the L300 device will move to the next host in its list and attempt to connect. This process repeats until a functional host pc is located. For information on configuring this feature, please see the L300 User Guide at [www.ncomputing.com/documentation](http://www.ncomputing.com/documentation).

### Assorted Console Tweaks

Within the vSpace Console, there are several settings that can be used to optimize your product experience. These are listed below:

- Video Compression – If you’re experiencing performance issues due to the network bandwidth needs of your L300 devices, you may limit multimedia stream quality. To configure this, open the vSpace Console and navigate to Software Settings (local) > Information & Settings > System Settings. The JPEG Compression Ratio is a percentage rating of quality. 95% means maximum video quality, at highest bandwidth. 5% is minimum video quality, with a respectively lower bandwidth requirement. It is important to note that by decreasing video quality, the CPU assisted compression will cause an increase in processor usage during video streaming events. In situations where your network is robust enough to handle higher quality video, you may see performance improvements by setting the video quality at maximum. The ideal setting for your environment should be determined through your own benchmarking.
- Background Activation – To automate the deployment process of new L300 devices, this setting allows the vSpace software to automatically register new devices as they are connected. It can be enabled under System Settings in the vSpace Console.

- Clean-Up Disconnected Sessions – vSpace has an automatic feature which will end any “orphaned” sessions after a predetermined interval. The default setting cleans up sessions after 5 minutes of being disconnected from any L-series device. This interval can be increased or decreased to suit the needs of the environment. Setting it to “0” will disable it, and orphaned sessions will remain logged in until the server is rebooted.

## Auto Login on the Host

In order for the USB drivers to be pushed through and work properly you will need to have someone with admin privileges logged into the host PC. Below are the steps to accomplish with this.

1. Open up the vSpace Console.
2. Expand Software Settings > Information & Settings and click on System Settings
3. Double click on the setting “Autologon on Host Station”
4. In the new window that opens Check the Box that says “Enable Autologon Mode on Main Station.”
5. Type in the information for the user name and password. If you are using a Domain admin make sure to use the fully qualified domain user name. Example: testdomain\user
6. Click OK

## Exclude A Program From Hardware Acceleration

If a program displays frequent “blue box” flickering, it may be desirable to disable video streaming for that application. To do so, simply add the application’s executable to the following registry key:

[HKEY Local Machine > System > CurrentControlSet > Control > Multiuser > ExcludeVideoPlayerNameList]

Each program in the list must be separated by a semicolon. For example, “explorer.exe;firefox.exe”

## Summary

These configurations can help create an efficient and stable vSpace Host, and consequently deliver the best possible user experience to each connected L-series device. For more information on recommended tips, tricks, and configurations, check out our searchable online Knowledgebase at [www.ncomputing.com/knowledgebase](http://www.ncomputing.com/knowledgebase).