



# **WINDOWS<sup>®</sup> XP<sup>®</sup> & VISTA<sup>®</sup> AUDIO TIPS & OPTIMIZATIONS**

**Improve the performance of your computer with Line 6 GearBox<sup>®</sup>,  
TonePort<sup>®</sup>, POD<sup>®</sup>xt, POD<sup>®</sup> X3, and audio recording software**

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# DIGITAL AUDIO AND YOUR COMPUTER

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Modern Windows® PC's are now quite powerful and more than capable of being used for sophisticated multitrack recording and audio editing. However, most are not typically configured for optimal performance for the specific demands of digital audio. The following list of tips is offered as suggested optimizations you might try on your Windows® XP® or Vista® system to possibly improve the performance with your Line 6 TonePort®, POD®xt, POD® X3, GearBox® software, GearBox® Plug-In, as well as with other audio applications.

It is important to note that many of the default Windows settings do offer some advantages, conveniences, and even security improvements for the general use of your computer. You should evaluate the trade-off of the security and conveniences some of these services offer to your non-audio computing work before you go disabling all of them. It is a good idea to always back up your system and data before changing system settings. It is also wise to keep a written list of all settings you've changed and know how to reset them back in case you encounter decreased performance issues.

**Note - PC configurations can differ widely. The following tips are offered as suggestions only and Line 6 cannot be held responsible for problems caused to your system by applying settings changes. Please seek the assistance of a qualified service technician if you are not familiar with these Windows operating system settings.**

## Digital Audio Demands

A few basic understandings are helpful as you start working with digital audio hardware and software and what demands they make on your computer system. Here are a few helpful insights...

### CPU Usage

This refers to the processing power that your computer uses to do lots of very complex math for such things as applying all those cool effects, and amp models to your sound. Once you start running other applications & Plug-Ins along with GearBox, this starts using more CPU cycles. It is best to run only the applications and processes you need to get the most out of your computer's finite amount of CPU resources. And of course, the faster processor your computer has, the better. The newer Dual-Core and Quad-Core processors offer even better performance than earlier processors since they are indeed like having multiple CPUs all sharing the processing load!

### Hard Disk Access

This is the "input/output" speed at which audio data can be written to your hard disk during recording, and read from your hard disk during playback. This will directly affect how many tracks you can record/play back in a Multitrack software project, for example. Recording digital audio also uses a great deal of hard disk space, so it is a good idea to have lots of free Gigabytes available. The speed of your hard disk itself is important here. It is best to have a hard disk with a 7200 RPM speed or higher. Also, newer PC's support the Serial ATA (SATA) interface for internal hard disks - if yours does then you should purchase a SATA type hard disk rather than IDE since SATA is a bit faster. A common practice among folks using their computer for audio work is to add a second hard disk and use it strictly for storing and recording audio files to, while the original drive is used primarily as your "C" drive where Windows and all applications are installed.

Note that often laptops come standard with a 5400 RPM speed internal hard disk, which may not be quite up to the task of more than simple multitrack audio recording projects. It is possible to purchase an external hard disk, such as one with a USB 2 or Firewire interface, that is 7200 RPM or faster to use as a secondary audio disk. External hard disk drives are also handy for back-ups as well (you are backing up your data, aren't you?)

## RAM

(Random Access Memory) Many modern applications use lots of this type of memory, so the more RAM you have, the better, up to the 3.2 GB maximum that Windows XP & Vista support. If you are running a Multitrack recording application, effects plug-ins and soft-synths along with GearBox, then RAM will be used up quickly (but remember that it will not reduce these applications' additional needs for CPU processing). One of the most cost-effective upgrades you can do for your computer is to add more RAM. Be sure to check your PC or motherboard documentation to see specifically what type of RAM it takes, and the capacity of RAM it will hold before you order the wrong type and have to face the dreaded chore of trying to return opened electronics parts!

## Hardware Conflicts

It is best to avoid connecting unnecessary hardware devices when working with audio on your PC. Since TonePort, PODxt and POD X3 devices connect to your USB port, you especially want to avoid any devices sharing the same USB bus. It can require advanced technical skills to track down device conflicts, and this is beyond the scope of this document – consult a technician for assistance if needed. But you can often avoid conflicts by simply not installing or disabling unneeded devices. For example, adding devices such as document scanners, Bluetooth adapters, printers, a USB coffee warmer, etc. can all raise the chances of conflicting with your audio device. Strive to keep your audio PC lean and mean, at least while running your audio applications.

## Cables

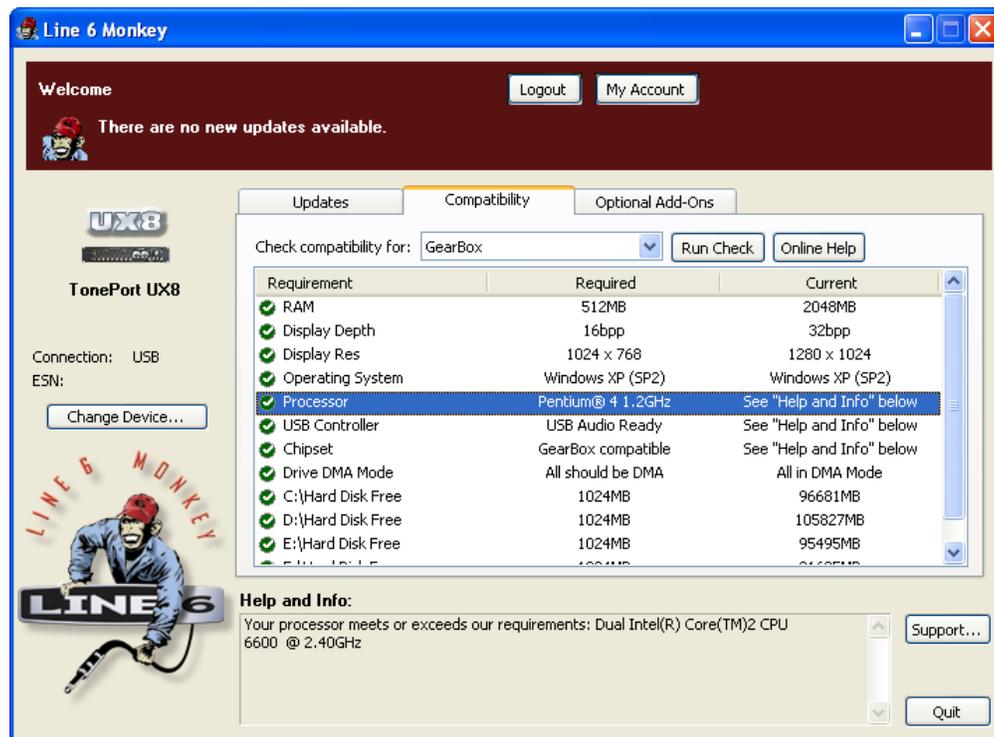
Note that digital connections, such as the S/PDIF outputs on TonePort UX2, UX8, KB37, PODxt Pro and POD X3, require the use of a special 75-ohm coaxial cable to effectively transmit digital signals without loss or interference. Be sure to get this cable type for any digital connections to/from your Line 6 hardware. For all analog audio connections, get yourself some good quality shielded instrument cables. Cheap cables often do not hold up well and can be a source of noise and tone loss if not well constructed. It is a good idea to invest in a few good quality cables and keep them away from cats and drummers. Before spending an entire day trying to figure out why you aren't getting a signal through your setup, check your cables!

With the above understandings, you can already see one common rule of thumb – *more* processing, speed and memory *is better!* But you do not necessarily need to go upgrade your PC right now. If your computer meets the recommended requirements then it is likely just fine to get going with your Line 6 hardware and GearBox needs. To squeeze more out of your current system, take a look at the following sections for plenty of tips and tweaks!

# LINE 6 MONKEY COMPATIBILITY CHECK

Line 6 Monkey is the free updating software utility that is installed on your Windows® XP® or Vista® computer automatically when you install GearBox, and works with all Line 6 TonePort®, POD®xt and POD® X3 devices. But checking for updates isn't the only trick Monkey knows! You can launch Line 6 Monkey and go to the **Compatibility** tab to let it sniff out the details of your system and provide you with a report. You can actually download and install [Line 6 Monkey](#) for free, even if you do not yet own any Line 6 hardware, and run the compatibility test to see if your computer meets the minimum requirements for GearBox.

To run the compatibility test, launch Line 6 Monkey, go to the **Compatibility** tab and click the **Run** button. A scan of your system will run and a list of components and their status will be displayed:



*Line 6 Monkey's Compatibility tab - Results of a successful compatibility test*

Upon completion of the compatibility test, the list of components shows whether each meets or fails to meet the minimum and recommended requirements for GearBox. Click on one of the components in the list and reference the details in the lower pane. This also provides you with a nice utility to see all those geeky details about your computer, such as the speed and type of your CPU, how much RAM you have, or (yawn) the chipset type of your USB Controller. You'll of course want to look into any components that do not meet the minimum, and upgrade them if necessary to successfully use GearBox. Meeting these requirements is also likely necessary to get the most out of any recording software on your system with your Line 6 hardware.

# WINDOWS® XP® OPTIMIZATIONS

To follow is a number of settings changes that have been proven to optimize Windows® XP® specifically for better performance of audio software. It is worth mentioning once again... it is a really good idea to **do a complete backup of your system and data before making any of these system changes** so that you can restore your system to its previous state if any problems are encountered!

## Making System Tweaks in Windows XP

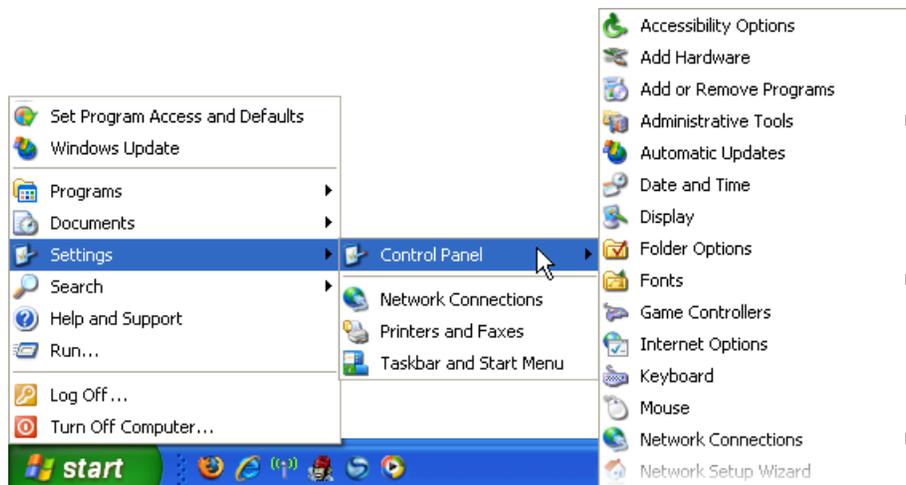
First a bit of information about accessing system settings in Windows...

### Switch to the Classic Start Menu Mode

Within this document, instructions are provided assuming you have Windows XP set to use the **Classic Start Menu** mode, which remains the preference of most computer geeks everywhere. To switch to this mode, right-click on the Windows **Start** button and choose **Properties > Start Menu tab > Classic Start Menu** option. While you are here, click on the **Customize** button, and then check the box for **Expand Control Panel**. Click OK to close both dialogs.

### The Windows Control Panel

Many of the following settings are accessed in the **Windows Control Panel**, which you intelligently just chose in the previous step to display as “Expanded” as a convenient sub-menu. Click on the **Start** button and choose **Settings** to get to the expanded Control Panel sub-menu as needed:

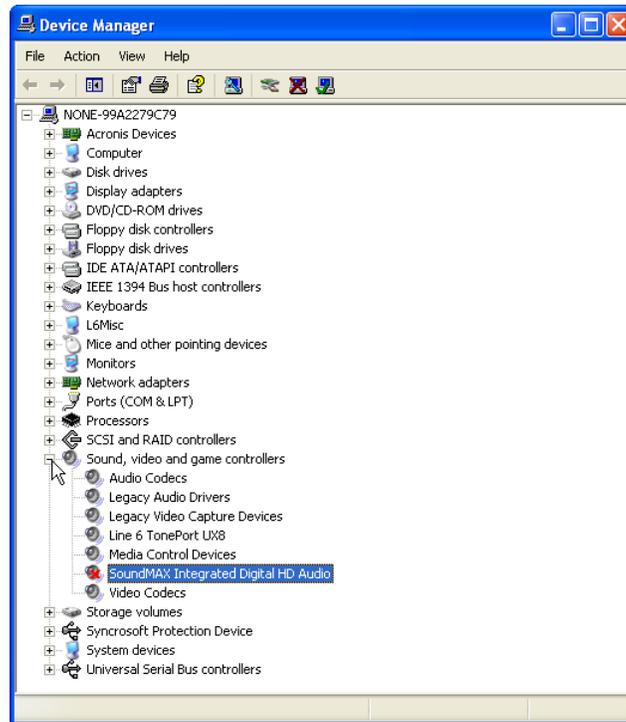


*Accessing the Windows Control Panel Menu*

## Disable Your Onboard or Add-in Sound Card

When using Line 6 TonePort, PODxt or POD X3 hardware as your sound card device for recording and playback in audio applications, you may not need to have any other sound card enabled. In some cases you may even encounter a hardware conflict with some “onboard” and/or add-in sound cards such as SoundBlaster Live! or OEM cards. The best solution is to simply disable any unnecessary, additional sound card within **Windows Device Manager**.

Go to **Control Panel > System > Hardware tab > Device Manager button**. Click the + symbol to the left of **Sound, video and game controllers** to expand it. Now right-click on your onboard sound card device, SoundBlaster Live!, or other sound card device that is not in use, and choose **Disable**. Click **Yes** when it prompts you if you really want to disable the device. The device will then appear in the list with a red “X” to show it is disabled. You can come back to Device Manager any time, right click on the disabled device and choose **Enable** to enable it again.



*Windows Device Manager - OEM Sound Card (a SoundMax device) has been disabled*

Note that if you disable another sound card, Windows will often then automatically assign your connected Line 6 USB device as the Windows “default device” for all sound playback. This means that many audio applications such as Windows Media Player and iTunes, or games will route their sound to your Line 6 device, which may or may not be what you want for playing CDs, DVDs or games. The audio capabilities of TonePort, PODxt and POD X3 are likely much higher quality than your on-board or add-on sound card, but Line 6 devices do not support some features such as MIDI playback, 5.1 surround output, or accelerated 3D audio for games. If you need these features, then it is best to set a sound card that does for the Windows default playback device, or specifically for the applications with these requirements. You can, however, avoid Windows system sounds playing through your Line 6 device independently of the Windows default playback device assignment – see the next section.

## Turn Off Windows System Sounds

These little dings and beeps can be handy alerts, but not very pleasant to hear blaring at high volume, especially if they are assigned to play through your TonePort as the default Windows playback device. To turn them off, go to **Control Panel > Sounds and Audio Devices > Sounds tab**. Choose **No Sounds** as the Sound Scheme. Click **OK** to exit the dialog. You can always come back here and turn the sounds back on if you really miss them.



*The Sounds and Audio Devices Properties dialog - setting the No Sound scheme*

## Disable Error Reporting

Eliminate those pesky pop-up warnings by disabling this error reporting feature. Go to **Control Panel > System > Advanced Tab > Error Reporting** and then click the **Disable Error Reporting** button. Keep the checkbox checked for the **But notify me if critical errors occur** option.

## Disable the Remote Assistance Option

Some technical support systems may ask you to keep this service active, but if this is not the case for you, then you can disable it. Go to **Control Panel > System > Remote Tab** and uncheck the option for **Allow Remote Assistance invitations to be sent from this computer**.

## Turn Automatic Updates Off

Windows updates are actually highly recommended by Microsoft, and indeed many are for security enhancements and offer critical fixes. But you may prefer to set the **Automatic Updates** feature off and check manually at the Windows Update web site for your updates to avoid this service kicking in while you are tending to audio processes. Go to **Control Panel > System > Automatic Updates tab**, and select **Turn Off Automatic Updates**. If you do choose to turn this option off, then be sure to check manually on the Microsoft Windows Update site for critical updates on a regular basis.

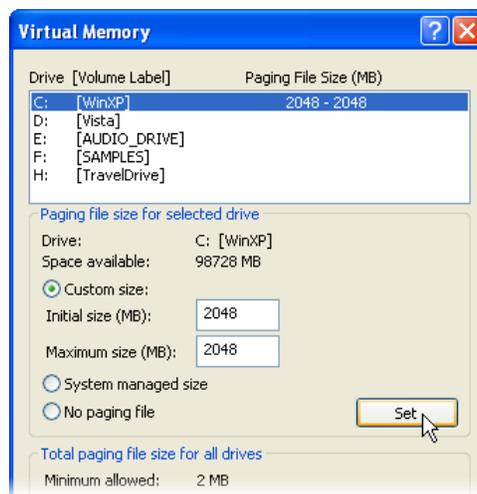
## Processor Scheduling

Some audio applications recommend setting the **Processor Scheduling** setting to “**Background Services**” rather than the XP default of “**Programs**”. Others claim it can be detrimental to processing, so evaluate its advantages on your system. Go to **Control Panel > System > Advanced Tab > Performance Settings > Advanced Tab**, and set the Processor Scheduling to **Background Services**.

## Set Virtual Memory to a Fixed Size

Windows uses a section of your hard drive as a “paging file” for storing and retrieving immediate data when your RAM is filled. It can help to make this file a fixed size rather than let Windows dynamically resize it. Note that you’ll need to restart your computer after changing these settings. To make this change, go to **Control Panel > System > Advanced tab > Performance Settings button**. Select the **Advanced tab** and then click the **Change** button within the **Virtual Memory** section. Choose the **Custom size** option and you can then type in new minimum and maximum values.

It is typically recommended to use a value that is 1.5 to 2 times the amount of your PC’s total RAM and enter this same value in to BOTH fields so that it maintains a fixed file size. Click the **Set** button, and then OK to close the dialog. Click OK for the alert and restart your computer for the changes to take effect.



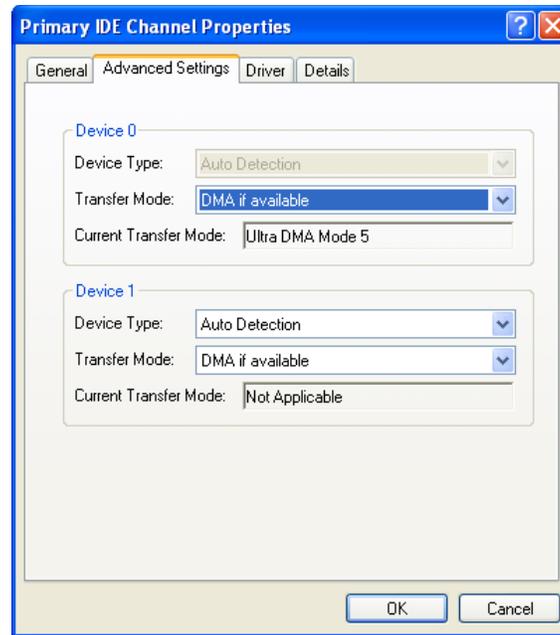
*The Virtual Memory dialog - Custom paging file created on the C drive*

## Enable DMA Mode for All IDE Hard Disk Drives

Note - This tip is only for IDE type hard disks. The latest PCs often now come with Serial ATA (SATA) interface controllers and hard disks for which this Device Manager setting change is not applicable.

Check to make sure the transfer mode for your IDE hard disk drive(s) is set to the **DMA** mode, otherwise the disk access speed will be poor. Note that the Line 6 Monkey utility will check for this and warn you within the Compatibility tab window if any hard disk is not set to DMA mode (see the previous [Line 6 Monkey Compatibility Test](#) chapter for details).

Go to **Control Panel > System > Hardware tab > Device Manager button**. Expand the entry labeled **IDE ATA/ATAPI controllers**. Right click on the **Primary IDE Channel** item and select **Properties** and go to the **Advanced Settings tab**. Check that the **Transfer Mode** options are set to **DMA if available** for all channels. Repeat this for all IDE channel items beneath IDE ATA/ATAPI controllers.



Checking the IDE Transfer Mode

## Disable the Indexing Service

Unless you are using the Windows **Search** function very often to find files on your computer, then this service is yet another you might consider disabling. This service basically runs through and catalogs items on your hard disks and makes the Windows Search function more efficient, but it can cause some random “slow-downs” and high CPU usage when it kicks in. If you are using your PC mostly for audio work and keep your projects well organized, then you’ll likely know where most things are all the time anyway! To disable this service, go to the **Control Panel** and select **Administrator Tools** and then **Services**. In the **Name** column of the **Services** dialog, find and double-click on the one titled **Indexing Service** to launch its **Properties**. In the **Startup type** drop-down, choose **Disabled**. Click **OK** when done.

You can of course come back to the **Services** at any time and set this back to **Manual** if you want to allow the **Indexing Service** to be re-activated again.

## Exit All Unnecessary Applications

This follows common sense – to free up more resources you should of course avoid running other programs as much as possible when running GearBox. But many Windows programs and utilities are often set to launch automatically when you start your system and you may not even know it. One way to look for these is in the **Windows Taskbar**, but first you may need to change a setting to see them all:

Right click on the **Start** button and select the **Taskbar** tab. Uncheck the **Hide inactive icons** checkbox. You will now likely see several little icons on the Taskbar, at the lower right of your screen, next to your clock. Most utility applications that start with Windows will display a little icon here. You should know what it is you are accessing before shutting one of these off – usually hovering over the icon for a moment will show a tooltip informing you what utility it is. If it is one you do not need, often you can right click on the icon and choose **Exit**. The utility will again start next time you reboot

your machine. Or, for more advanced Windows XP users, you can try using the **System Configuration Utility** (see next tip).

## Disable Startup Programs with the System Configuration Utility

It is not recommended you use this utility unless you are familiar with the Windows XP operating system – seek the help of a technician if needed. To access the **System Configuration Utility**, go to **Start > Run** and type in **msconfig**, and then go to the **Startup** tab. All checked items here are set to start running when you boot your Windows. If some of these are not necessary, you can uncheck them. Note that some of these will likely be important security utilities, such as Anti-Virus software, which you probably never want to surf the Internet without. You will need to restart your computer for changes in this dialog to take effect.

**Tip** - Sometimes the name or path displayed for each Startup item isn't very telling as to what the application actually is. You can often find out, as well as obtain some details that can help you decide if you should uncheck it or not, by doing a Google Internet search using the .exe filename.

## Internet and Network Connections

You'll likely want your PC to be able to connect to the Internet or perhaps a network, but some users find that having a connection active while using audio applications causes glitches or drop-outs, especially if using a wireless connection or USB wireless network card. One thing you can try is to disconnect from the Internet/network while using your audio applications if you find that it is causing some interference. Likewise, during the times that you are not connected, you should not need to have Internet/Networking utilities running, such as Windows Firewall, Anti-Virus and Anti-Spyware, networking utilities, etc. It is not recommended that you exit these services while connected to the Internet, since they are necessary security measures.

## Disable Windows System Restore

This can be a helpful system tool to have running, since it regularly makes backups of important Windows system files and drivers, and allows you to switch to the backed-up version in case of problems. But this service comes at some costs - the use of a significant amount of disk space, CPU usage and the disk access it needs when it kicks in. If you see no problems with it active, then leave it on. But if you need to solve audio problems and want to try turning it off, then you can access it in **Control Panel > System > System Restore Tab**. You can choose **Turn off system restore for all partitions** to completely disable it. Or, if you have more than one hard disk partition, one compromise is to keep active for only your C: partition, and disable all other partitions. Click on the **OK** button and restart your computer for the setting to take effect.

## Display & Power Settings

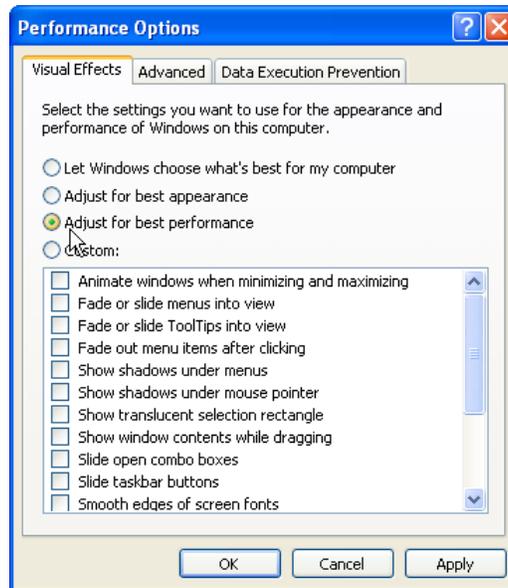
The following items are all accessed within the **Windows Control Panel**:

### Turn off the Screen Saver

You likely do not want a screen saver kicking in during the middle of your perfect take when recording. To turn this off, go to **Control Panel > Display** and select the **Screen Saver** tab and choose **None** for the **Screen Saver** option.

## Turn Off Visual Effects

By default, WinXP has numerous **Visual Effects** active. These do make the interface look pretty, but also utilize resources. You can toggle many of these on/off individually, or one easy tweak is just to turn all off within the Performance Options dialog. Go to the **Control Panel > System > Advanced tab > Settings button**, and then choose the **Visual Effects tab** in the **Performance Options** dialog. Select the **Adjust for best performance** option. Optionally, you can check only the individual display options here to turn them on if you think some are sufficiently visually stimulating to not do without. Click the **OK** button when done.



*The Visual Effects settings - “Best performance” option selected*

## Remove Background Picture

Having a high resolution photo or rotating slide show will use some resources – setting this to a plain, boring color will be a little less demanding, and maybe keep you focused on your music instead! To change this, go to **Control Panel > Display > Desktop Tab**, and for the background picture select **None**.

## Turn Off Power Schemes

There is probably no reason for your audio PC components to ever need to power down when the system is plugged in (although if you have a laptop, then this can conserve the battery). To avoid this from happening, go to **Control Panel > Power Options**, and in the **Power Schemes tab**, set each of the following items to **Never** within the Plugged In column; **Monitor**, **Hard Discs**, and **System Standby**.

## Turn Off Hibernation

There is likely no need for your audio PC to ever automatically go to “sleep” on you, and this ties up a significant amount of hard disk space. To disable this feature, go to **Control Panel > Power Options**, and in the **Hibernation tab**, uncheck the option for **Enable Hibernation**.

## Maintenance Tasks

There are several recommended routine maintenance tasks you should perform to keep your system in top form for audio work...

### Backup Your Data

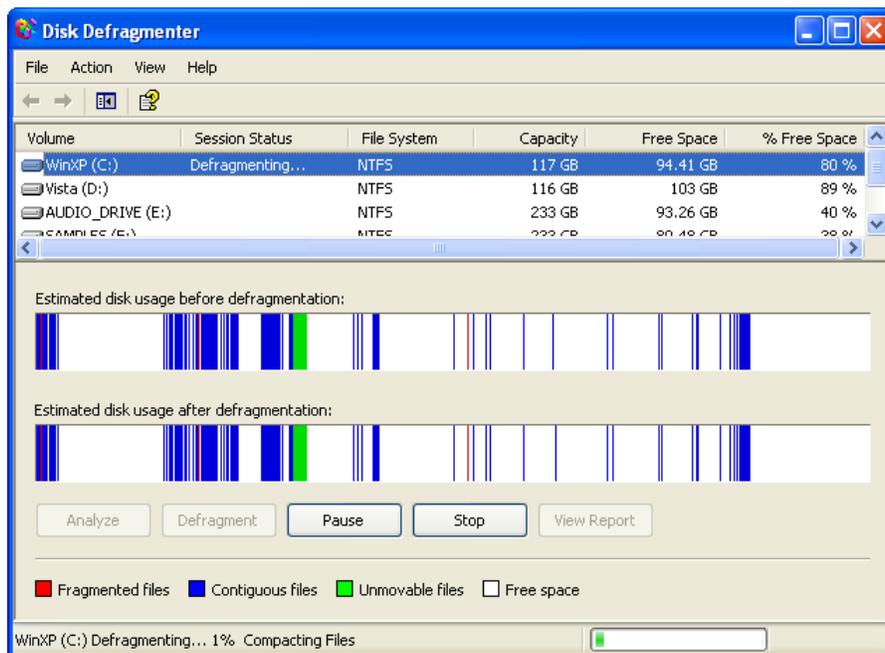
Yes, you have heard it before, but it is easy to keep putting off the chore of backing up all that audio data. Invest in a DVD burner or external hard drive backup system if you can afford it. Losing audio data can be costly and extremely negative to the creative process. There are also “drive imaging” software applications you can buy that will allow you to back up your entire computer’s contents – data, programs and all – and completely restore your computer back to the last backed-up state in minutes in case of failure.

### Clean Up

Your PC accumulates lots of little temporary files and trash over time, so it’s a good thing to clean house once in a while. Go to **Start > Programs > Accessories > System Tools** and choose the **Disk Cleanup** utility for this. This can be run individually for each hard disk partition.

### Defragment Your Hard Disks

An important practice to follow for audio is to regularly run a defragmenting application on all your hard drive partitions, especially your audio partition, to allow more streamlined disk access. Many 3rd party companies produce defragmenting applications, but Windows XP already includes **Disk Defragmenter**, which works pretty well (albeit a bit slower than 3rd party ones you can buy). To run Disk Defragmenter, go to **Start > Programs > System Tools**. If you first click the **Analyze** button, it will tell you if your disk needs to be defragmented.



Windows Disk Defragmenter

# WINDOWS® VISTA® OPTIMIZATIONS

To follow are a number of settings changes for optimizing Windows® Vista® specifically for improved performance with audio software. It is worth mentioning once again... it is a really good idea to **do a complete backup of your system and data before making any of these system changes** so that you can restore your system to its previous state if any problems are encountered!

## Making System Tweaks in Vista

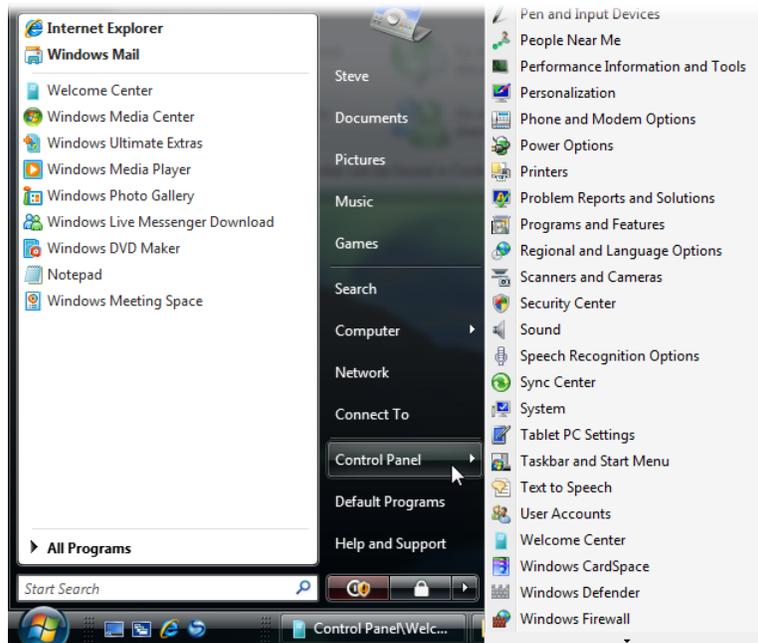
First a bit of information about accessing system settings in Windows Vista...

### Administrator Privileges

To be able to access many of the system settings, you'll need to be logged in to Vista with a user account that has full Administrator permissions. Please check your Windows Help if you need to learn about User Accounts and permissions.

### The Windows Control Panel

Many of the following settings we'll be covering here are accessed in the **Windows Control Panel**. You can access the **Control Panel** by clicking the Windows **Start button** - you'll see that you can click on Control Panel here to display the menu of all Control Panel items.



*Accessing the Windows Control Panel menu from the Start button*

### User Account Control

The new **User Account Control (UAC)** feature in Vista is what keeps prompting you for permission to do configure system settings and access some areas and programs. UAC is a security measure, but it can also be really annoying when trying to do system tweaks, such as many of the ones listed in this

document. Keep in mind, Microsoft implemented UAC to prevent tampering with important settings, and you could expose some security vulnerabilities disabling it, but if you prefer to disable it you can do so. It is also possible to enable UAC again, should you just want to disable it temporarily. Note that you will have to reboot for this setting change to take effect.

Go to **Control Panel > Administrative Tools** and select the **System Configuration** utility from the list of tools. Select the **Continue** button in the prompt (ironically, this prompt asking you to continue is launched by the UAC service!) In the **System Configuration** dialog, select the **Tools** tab. Scroll down and find the **Disable UAC** item - select it and then click the **Launch** button to execute the command to disable it. If you are left with an open black-background command dialog, close it when the command completes. Select **OK** in the System Config dialog to exit when done. Restart your computer for the change to take effect.

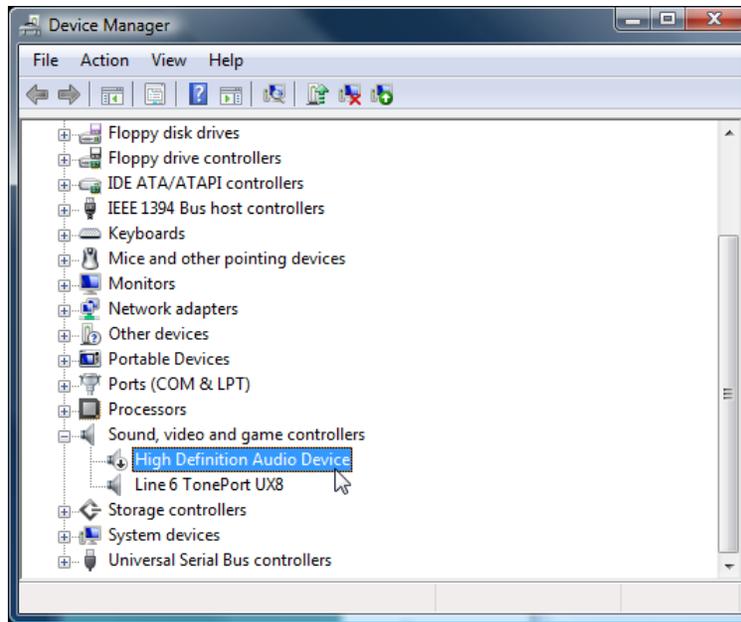
## Performance Information and Tools

The following instructions in this document take you to various settings dialogs in Vista to make the necessary tweaks. But one handy dialog where you can alternatively get to lots of Vista settings is the **Performance Information and Tools**, which you can select from the **Control Panel** menu. As its name suggests, this dialog also displays performance ratings for your system, as well as some tips and info on how to improve overall performance.

## Disable Your Onboard or Add-in Sound Card

When using Line 6 USB hardware as your sound card device for recording and playback in GearBox and other audio applications, you may not need to have another sound card enabled. In some cases you may even encounter a hardware conflict with some “onboard” and/or add-in sound cards such as SoundBlaster Live! or OEM cards. The best solution is to simply disable any unnecessary, additional sound card within **Windows Device Manager**.

Go to **Control Panel > Device Manager**. Click the **+** symbol to the left of **Sound** to expand it. This should show your Line 6 USB device (if connected) as well as any other audio device currently available on your computer. Now right-click on your onboard sound card device (often listed here as High Definition Audio Device or other generic name), SoundBlaster Live!, or other sound card device that is not in use, and choose **Disable**. Click **Yes** when it prompts you if you really want to disable the device. The device will then appear in the list with a little downward arrow icon to show it is disabled. You can come back to Device Manager any time, right click on the disabled device and choose **Enable** to enable it again.

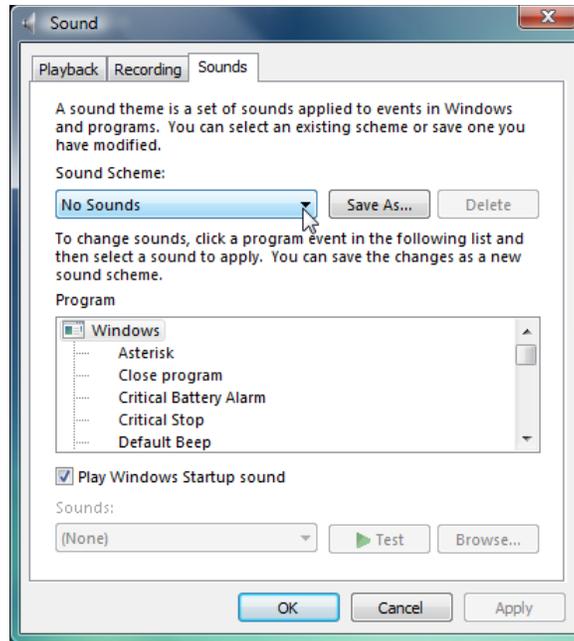


*Windows Device Manager - Onboard sound card disabled*

Note that if you disable another sound card, Windows will often then automatically assign your connected device as the Windows “default device” for all sound playback. This means that many audio applications such as Windows Media Player and iTunes, or games will route their sound to your Line 6 device, which may or may not be what you want for playing CDs, DVDs or games. The audio capabilities of TonePort, PODxt and POD X3 are likely much higher quality than your on-board or add-on sound card, but Line 6 devices do not support some features such as MIDI playback, 5.1 surround output, or accelerated 3D audio for games. If you need these features, then it is best to set a sound card that does for the Windows default playback device, or specifically for the applications with these requirements. You can, however, avoid Windows system sounds playing through your Line 6 device independently of the Windows default playback device assignment – see the next section.

## Turn Off Windows System Sounds

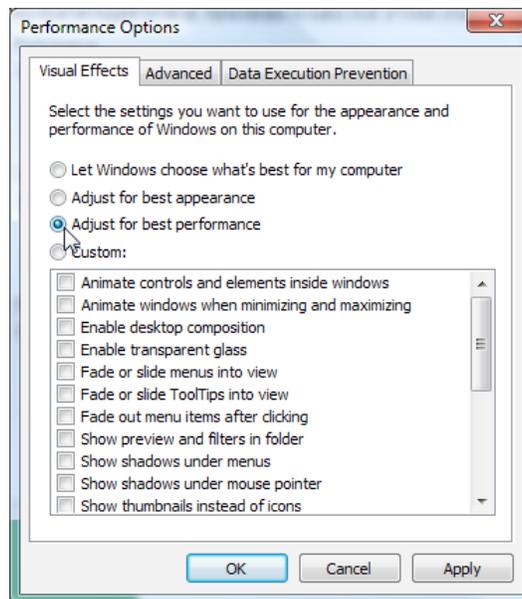
These little dings and beeps can be handy alerts, but not very pleasant to hear blaring at high volume, especially if they are assigned to play through your TonePort as the default Windows playback device. To turn them off, go to **Control Panel > Sound > Sounds tab**. Choose **No Sounds** as the **Sound Scheme**. You can also uncheck the **Play Windows Startup sound** if you want to also disable it. Click **OK** to exit the dialog. You can always come back here and turn the sounds back on if you really miss them.



*The Sound dialog - setting the Scheme to No Sounds*

## Turn Off Visual Effects

By default, Vista has numerous **Visual Effects** active. These do make the interface look pretty, but also utilize resources. You can toggle many of these on/off individually, or one easy tweak is just to turn all off. Go to **Control Panel > System** and choose **Advanced system settings** from the **Tasks** list. In the **Advanced** tab, click on the top-most **Settings** button within the **Performance** section. In the **Visual Effects** tab, select the **Adjust for best performance** option to turn off all Visual Effects. Alternatively, you can keep only the individual Visual Effects checked that you want if you prefer to have things look a bit prettier. Click the **OK** button to exit.



*The Visual Effects settings*

## Disable the Remote Assistance Option

Some technical support systems may ask you to keep this service active, but if this is not the case for you, then you can disable it. Go to **Control Panel > System** and choose **Remote settings** from the Tasks list. In the **Remote tab**, uncheck the option for **Allow Remote Assistance invitations to be sent from this computer**. In the lower portion of the dialog, you can also choose **Don't allow connections to this computer**.

## Turn Automatic Updates Off

Windows updates are actually highly recommended by Microsoft, and indeed many are for security enhancements and offer critical fixes. But you may prefer to set the Automatic Updates feature off and check manually at the Windows Update web site for your updates to avoid this service kicking in while you are tending to audio processes. Go to **Control Panel > Windows Update** and choose **Change settings** from the Tasks list. Select **Never check for updates** to turn this feature off. If you do choose to turn this option off, then be sure to check manually on the Microsoft Windows Update site for critical updates on a regular basis.

Note - Another option to consider is to simply disconnect from the Internet altogether when doing audio recording work - this way you can leave Automatic Updates on the recommended "automatic" setting and not need to worry about it trying to download or install updates while you are doing critical audio work.

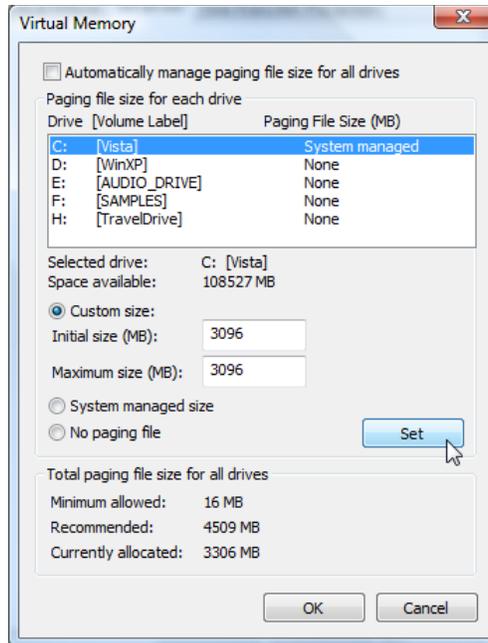
## Processor Scheduling

Some audio applications recommend setting the **Processor Scheduling** setting to "**Background Services**" rather than the Vista default of "**Programs**". Others claim it can be detrimental to processing, so evaluate its advantages on your system. Go to **Control Panel > System** and choose **Advanced system settings** from the Tasks list. In the **Advanced Tab**, click the **Settings button** in the **Performance** section. In the **Performance Options** dialog's **Advanced tab**, set the **Processor Scheduling** to **Background Services**.

## Set Virtual Memory to a Fixed Size

Windows uses a section of your hard drive as a "paging file" for storing and retrieving immediate data when your RAM is filled. It can help to make this file a fixed size rather than let Windows dynamically resize it. Note that changing this setting will require you to restart your computer. To make this change, go to **Control Panel > System** and choose **Advanced system settings** from the Tasks list. In the **Advanced Tab**, click the **Settings button** in the **Performance** section. In the **Performance Options** dialog's **Advanced tab**, click the **Change** button within the **Virtual Memory** section. Uncheck the **Automatically manage paging file size for all drives** option, then choose **Custom size**. You can then type in new **Initial size** and **Maximum size** values.

It is typically recommended to use a value that is 1.5 to 2 times the amount of your PC's total RAM and enter this same value in to BOTH fields so that it maintains a fixed file size. Click the **Set** button, and then **OK** to close the dialog. Restart your computer when prompted for the changes to take effect.



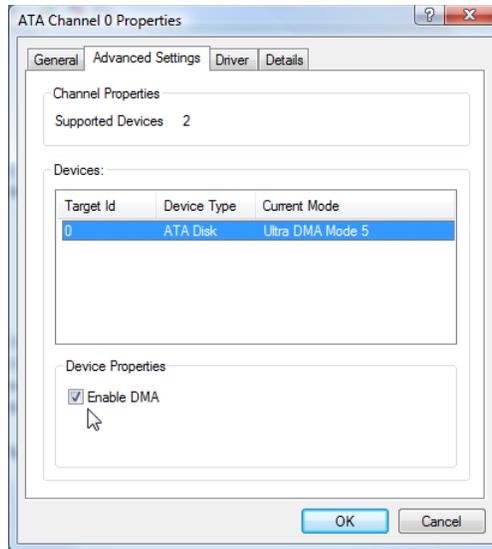
*The Virtual Memory dialog - A Custom paging file created on the C drive*

## Enable DMA Mode for All IDE Hard Disk Drives

Note - This tip is only for IDE type hard disks. The latest PCs often now come with Serial ATA (SATA) interface controllers and hard disks for which this Device Manager setting change is not applicable.

Check to make sure the transfer mode for your IDE hard disk drive(s) is set to the **DMA** mode, otherwise the disk access speed will be poor. Note that the Line 6 Monkey utility will check for this and warn you within the Compatibility tab window if any hard disk is not set to DMA mode (see the previous [Line 6 Monkey Compatibility Test](#) chapter for details).

Go to **Control Panel > Device Manager**. Expand the entry labeled **IDE ATA/ATAPI controllers**. Right click on the first **ATA Channel** item in the sub-list and select **Properties** from the context menu. In the **ATA Channel 0 Properties** dialog, go to the **Advanced Settings** tab. Make sure the **Enable DMA** box is checked. Click **OK** when done. Now repeat the above steps by right-clicking on each **ATA Channel 0** and each **ATA Channel 1** item within the **IDE ATA /ATAPI controllers** sub-list to make sure all are set to DMA mode. You may need to restart your computer if you change any DMA settings for them to take effect.

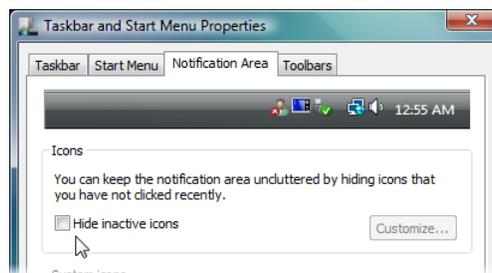


*Checking the IDE Transfer Mode - DMA is enabled*

## Exit all Unnecessary Applications

This follows common sense – to free up more resources you should of course avoid running other programs as much as possible when running GearBox. But many Windows programs are often set to launch automatically when you start your system and you may not even know it. One way to look for these is in the Windows Taskbar, but first you may need to change a setting to see them:

Right click on the **Start** button and select **Properties** from the context menu. In the **Taskbar and Start menu Properties** dialog, select the **Notification Area** tab. Uncheck the **Hide inactive icons** checkbox.



*Taskbar and Start Menu Properties - configuring the Taskbar to show the active program icons*

You will now likely see several little icons on the Taskbar, at the lower right of your screen, next to your clock. Most utility applications that start with Windows will display a little icon here. You should know what it is you are accessing before shutting one of these off – usually hovering over the icon for a moment will show a tooltip informing you what utility it is. If it is one you do not need, often you can right click on the icon and choose Exit. The utility will again start next time you reboot your machine. Or, for more advanced Windows users, you can try using the **System Configuration** utility (see next tip).

## Disable Startup Programs with the System Configuration Utility

It is not recommended you use this utility unless you are familiar with the Windows XP operating system – seek the help of a technician if needed. To access the **System Configuration Utility**, click on the Window Start button and type in **msconfig** in the Search field. In the System Configuration dialog, go to the **Startup tab**. All checked items here are set to start running when you boot Windows. If some of these are not necessary, you can uncheck them - for example, the **Windows Sidebar** and **Welcome Center** items are nice conveniences, but can be disabled here to free up some resources. When you install new software applications and hardware, you'll often see more items get added here that will be checked and loaded automatically on Windows startup. Often these items can be disabled as well.

Note that some of these startup items will likely be important security utilities, such as Anti-Virus software, which you probably never want to surf the Internet without. You should probably keep these items checked unless they are causing problems with playback or recording.

You will need to restart your computer for changes in this dialog to take effect.

## Internet and Network Connections

You'll likely want your PC to be able to connect to the Internet or perhaps a network, but some users find that having a connection active while using audio applications causes glitches or drop-outs, especially if using a wireless connection or USB wireless network card. One thing you can try is to disconnect from the Internet/network while using your audio applications if you find that it is causing some interference. Likewise, during the times that you are not connected, you should not need to have Internet/Networking utilities running, such as Windows Firewall, Anti-Virus and Anti-Spyware, networking utilities, etc. It is not recommended that you exit these services while connected to the Internet, since they are necessary security measures.

## Display & Power Settings

The following items are all accessed within the **Control Panel**:

### Disable Aero

Aero is the name Microsoft has given to the new slick "Glass Transparency" look of Vista's display Themes. It does make the Vista experience cool and visually interesting, but systems with slightly older display hardware may struggle with or not run the transparency engine very well. To free up some memory you can switch the transparency off, or switch to the Windows Classic theme. Sure, this will make Vista look about as exciting as Windows XP, but its leaner and meaner if that's your priority.

To switch off the transparency effect, go to **Control Panel > Personalization** and select **Window Color and Appearance**. Uncheck the **Enable transparency** box. Click **OK** when done.

To switch to the Windows Classic theme, go to **Control Panel > Personalization** and select **Theme**. In the theme drop-down box choose **Windows Classic**. Click **OK** when done.

### Turn off the Screen Saver

You likely do not want a screen saver kicking in during the middle of your perfect take when recording.

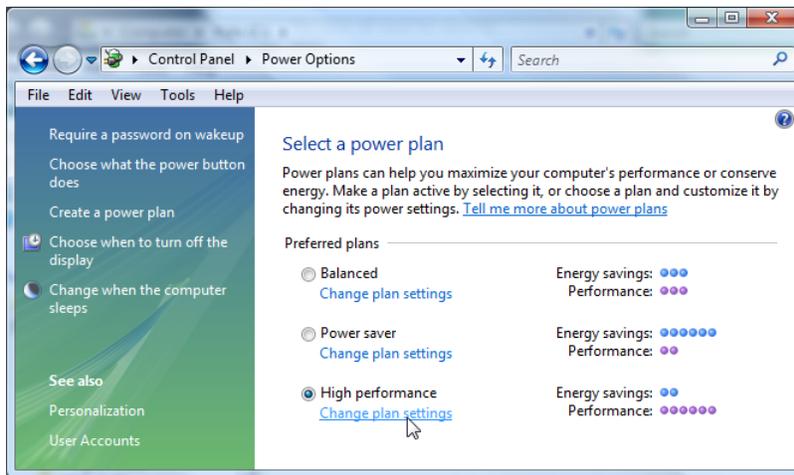
To turn this off, go to **Control Panel > Personalize** and select **Screen Saver**. Choose **None** for the **Screen Saver** option.

## Remove Desktop Background Picture

Having a high resolution photo or rotating slide show will use some resources – setting this to a plain, boring color will be a little less demanding, and maybe keep you focused on your music instead! To change this, go to **Control Panel > Personalization** and choose **Desktop Background**. In the **Picture location** menu, select **Solid colors** and then choose a color - click **OK** when done.

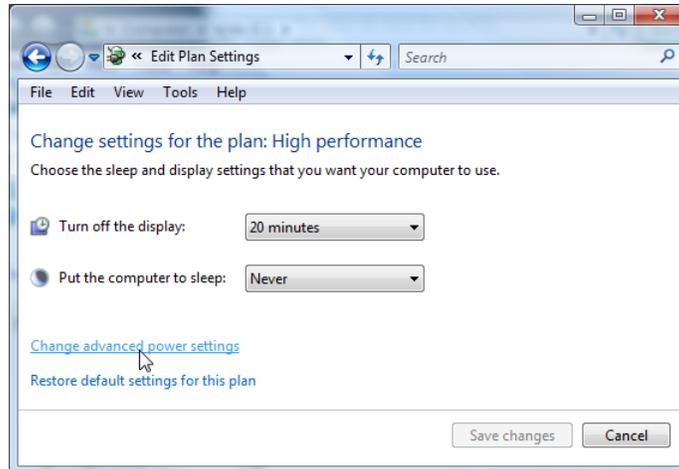
## Power Options

There is probably no reason for your audio PC components to ever need to power down (although if you have a laptop, then this can conserve the battery life). To configure your power options, go to **Control Panel > Power Options**. Choose the **High Performance** plan, and then click on the **Change plan settings** link below it.



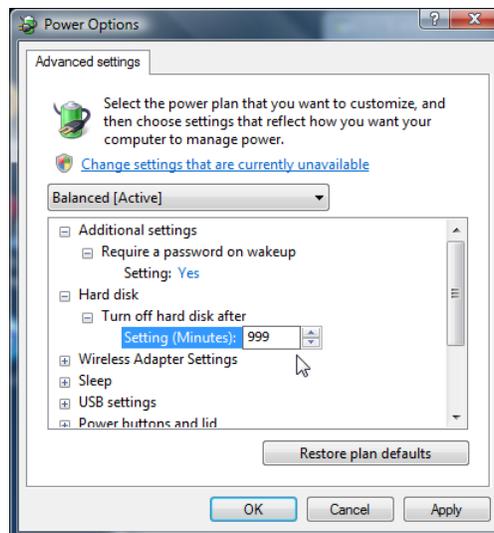
*The Power Options dialog - setting the High performance plan*

In the **Edit Plan Settings** dialog, choose a time value or **Never** as preferred for the **Turn off the display** option. Be sure the **Put the computer to sleep** option is set to **Never**, then click on the **Change advanced power settings** link.



*The Edit Plan Settings dialog*

Click on the + box at the left of the **Hard Disk** item to expand it, and then also expand the **Turn off hard disk after** sub item. Click on **Setting** and enter a very high time value, such 999 minutes so that your hard disks effectively never power off. You can also optionally expand other items and change them if you like.



*The Advanced Settings tab - Changing the Hard Disk power-down setting*

When your changes are complete in the **Advanced** settings, click **OK**, which should take you back to the **Edit Plan Settings** dialog. If you made changes here, click the **Save changes** button and then close the dialog - if the Save button is not available, simply close the dialog.

## Maintenance & System Tools

There are several recommended maintenance tasks you should perform regularly to keep your system in top form for audio work...

## Backup Your Data

Yes, you have heard it before, but it is easy to keep putting off the chore of backing up all that audio data. Invest in a DVD burner or external hard drive backup system if you can afford it. Losing audio data can be far more costly and extremely negative to the creative process. There are also drive imaging software applications you can buy that will allow you to back up your entire computer's contents – data, programs and all – and restore back to the working state in minutes in case of failure.

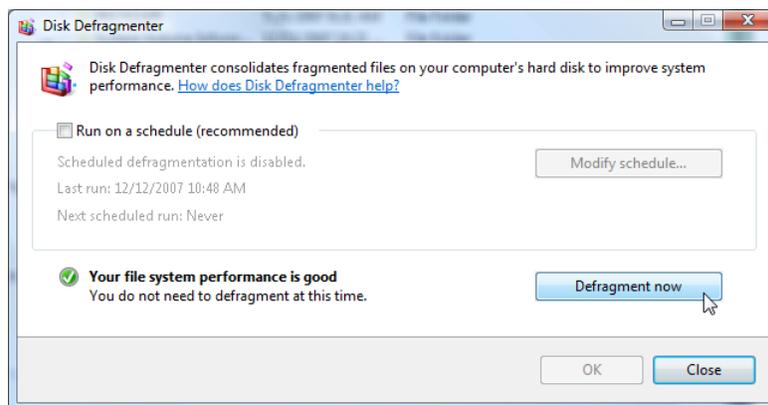
## Clean Up

You accumulate lots of little temporary files and trash over time, so it's a good thing to clean house once in a while. Click the Windows **Start** button. In the **Search** box, type in **Disk Cleanup** - in the list of results above, double click on **Disk Cleanup**. When prompted with the **Disk Cleanup Options**, choose **Files from all users on this computer**.

Choose the drive you wish to clean up and click **OK**. When you are presented with the options, check all items you want to clear out. If you choose your C drive, you will typically see many options here. You should at least clear the **Recycle Bin**, but may also want to check all others as well if you are sure you don't need to keep any of the files stored in them (click the **View Files** button to see what the specific files are that will be cleared for each category). Repeat the process and run Disk cleanup on each of your hard disk partitions.

## Defragment Your Hard Disks

An important practice to follow for audio is to regularly run a defragmenting application on all your hard drive partitions, especially your audio partition, to allow more streamlined disk access. Many 3rd party companies produce defragmenting applications, but Windows Vista already includes **Disk Defragmenter**, which works pretty well (albeit a bit slower than 3rd party ones you can buy). To run Disk Defragmenter, click the Windows **Start** button and in the **Search** box, type **Disk Defragmenter** - in the list of results, double click on **Disk Defragmenter** to launch it.



*Windows Disk Defragmenter*

## Disable Windows System Restore

Windows **System Restore** can be a helpful system tool to have running, since it regularly makes backups of important Windows system files and drivers, and allows you to “roll back” to the previous versions in case of problems. But this service comes at some costs - a significant amount of hard disk space, CPU usage and the disk access it needs when the service kicks in. If you see no problems with

it active, then leave it on. But if you need to solve audio problems and want to try turning it off, then you can access it by going to **Control Panel > System** and choosing **System protection** from the **Tasks** list. In the **System Protection** tab you'll see a checkbox for each hard disk partition on your system - you can uncheck each partition to disable System Restore individually for each. One compromise is to keep active for only your C partition, and disable all other partitions. Click on the **OK** button and restart your computer for the setting to take effect.

### **Disable the Indexing Service**

The new **Windows Indexing Service** is indeed more capable in Vista and provides the user with improved search capabilities. But once again this enhanced service comes at the cost of resources you might prefer to keep available for your more demanding audio projects. If you don't find yourself relying all that much on the Windows Search, then you might try disabling the Indexing Service to free up more resources.

Go to **Control Panel > Indexing Options** and select the **Modify** button. Select the **Show all locations** button if it is available (if it is not then you already are seeing all locations). Double-click **Users** in the **Summary of selected locations** pane, and then uncheck the **Users** directory in the upper pane. Double click **Start Menu** in the Summary of selected locations, and the uncheck Start Menu directory. Click the **OK** button when done.

## ADDITIONAL RESOURCES

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There are of course still many more things you can learn about Windows® XP® and Vista® and upgrades you can perform on your system if you care to spend some time doing some reading. Be sure to check the site of the manufacturer of your audio software for some application-specific do's and don'ts. If you do some Internet searching you can find countless web sites dedicated to offering Windows and PC tuning tips, as well as active user forums where you can argue endlessly about things like AMD® vs. Intel® and Mac® vs. Windows®. Thankfully, there are some very helpful folks out there in cyberspace, and you can learn from their wisdom and mistakes.

### Helpful Computer Optimization Sites

To follow are some very good sites dedicated to computer optimization, software and hardware tips - these are also mostly focused on using computers for audio-related tasks as well!

- MusicXP - <http://www.musicxp.net/>
- TweakXP - <http://www.tweakxp.com/>
- Sound on Sound Magazine - <http://www.soundonsound.com/>
- Computer Music Magazine - <http://www.computermusic.co.uk/main.asp>
- Tom's Hardware - <http://www.tomshardware.com/>
- Black Viper - <http://www.blackviper.com/>

### Line 6 Online Resources

Hungry for more info? We've got extensive Help documentation, User Forums and Product Manuals for your Line 6 gear just a click away...

- Several more Help documents covering computer recording, MIDI Control, product Release Notes and more are available here - [GearBox Online Help](#)
- For technical support, choose from the many options listed on the Line 6 Support page - [Line 6 Support](#)
- Official Line 6 hardware Product Manuals can be downloaded here - [Line 6 Product Manuals](#)

