

Optimizing Your Computer to Maximize Performance

So you bought an audio or video computer peripheral, followed all the instructions, and set everything up. Now what?

A typical PC or Macintosh audio or video setup may contain software and hardware products from a dozen or more companies. i.e. Dell, Microsoft, Belkin, Steinberg, Syncrosoft, Waves, Universal Audio, Arturia, FXpansion, Native Instruments, Akai Pro, Alesis.

Even with a minimalist setup, getting all the separate hardware and software components to work together smoothly can be tricky. One component's manual might not pick up exactly where the other one left off, and there are very few manuals which will discuss how to optimize your system over-all for the best performance.

In this article, will cover some measures you can take to optimize your system for maximum audio or video performance, and prevent dropouts.

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Optimizing Your Computer for Recording

You can't walk into a car dealership and buy a car that's ready to enter a race. Even high-performance sports cars come tuned for the road, not the race track. Suspension, gearing, timing all need to be tweaked before a car is ready to be pushed to its limits.

The same is true of computers. While most new computers will perform well right out of the box, whether you buy a Macintosh, or a PC, you still have some work to do before you'll see your new computer perform to its maximum potential. Recording and mixing audio or video is one of the most demanding tasks you can ask of your computer, sometimes more taxing than professional graphics work.

The suggestions below can be used to squeeze more speed, and better performance out of any computer.

Before you begin, make sure that your software and your product's device drivers (if applicable) are up-to-date. Of course, visit www.ionaudio.com for the latest software and drivers for any of our products

(note: some products don't require drivers to be installed, refer to your product's specific documentation).

Tips for All Systems

1. **Don't let your computer's boot drive get too full.** Make sure to leave about 20% of your computer's main hard disk free for system tasks and virtual memory operations. This is crucial to maintain system speed. If your main hard disk gets more than 80% full, its time to go out and buy a second hard disk, or either get rid of some files. External USB and FireWire drives are more affordable than ever. For example, a Seagate 1TB External USB 2.0 drive is now less than \$150!! Internal drives are even less expensive! While you're at it, buy an extra drive just for backing up!
2. **Get more RAM.** Your operating system can use up to 1GB of RAM all by itself. On a recording computer, you'll want to have more than that so your power-hungry applications have all the resources they need. 2GB is a great place to start. If you'll be using lots of virtual-instruments, samplers etc, you'll want to get even more...think 3 or 4GB. Is there such thing as overkill? At this point, yes, there is. While many of today's' computers can accommodate 8GB or more of RAM, even in virtual-instrument and sample-heavy projects, it's almost impossible to use up that much RAM. For the most part, the only time you'll need 8GB of ram is in the Video and 3D modeling fields.
3. **If possible, record to a second hard disk.** While even the 5400 RPM drives in most laptops can handle recording 8 or even 16 simultaneous tracks, you can really improve system performance by dedicating a 7200 RPM (or even 10,000 RPM drive to your recording projects. Certain files on your computer change all the time, like your email, internet search history, bookmarks, etc. Other files once they're stored, stay more-or-less the same like music and photo libraries, large audio files etc. Your system will perform better, and won't have to work as hard if you get a second drive to record on. This will result in less fragmented drive space, and faster loading and writing of large files. This is also makes things easier when it comes to backing up.

Windows Optimization Tips

USB and USB 2.0

- **Use the best ports on your computer for audio or video devices.** If you have a desktop or a tower, be sure to connect your audio interface to a USB port that is on the back of the computer. Generally, ports on the front of the computer, on the monitor, or keyboard don't perform as well as those on the back. This can help prevent noise, dropouts and connection issues.
- **If you use hubs, use powered hubs.** If you have to use a USB Hub to connect your device, use a hub that has its own AC power adapter.
- **If necessary, upgrade to a premium USB cable.** If you live in an area that has a high degree of radio or electrical interference, and you experience noise or hum when using USB audio, upgrade your USB cable to a premium cable with extra shielding and a Ferrite Bead (a cylindrical bump on one end of the cable) which can filter out some external noise.

Windows XP

1. **Make sure your Windows installation is up-to-date.** Keep in mind that the latest audio device drivers, and the latest recording software are designed on the most current version of XP. If your computer isn't up to date, it's performance will likely suffer. Go to windowsupdate.microsoft.com to easily update your installation. It may take a few visits to the site to get all the fixes to the updates (install updates and then do the Windows Update scan again).
2. **Minimize Programs running in the background.** The icons at the bottom-right of the screen, next to the clock (mostly) represent programs that are running in the background. This will include virus protection spy-ware protection etc. While recording, it is advisable to exit from these. Right-clicking any of these icons will bring up a menu. If there is a **Close**, **Exit**, or **Quit** option for any of these icons, choose it so that you have exited out of any background programs. You can double-check what applications and processes are running by looking at the **Applications** and **Processes** tabs of the **Task Manager**. To access the **Task Manager**, press **Ctrl+Alt+Delete**, and then click **Task Manager**.
3. **Turn off Hard Disk Sleep.** Make sure your Hard Drive is not set to sleep or turn off after a short amount of time. If your hard drive goes to sleep (stops spinning to save power) while you are recording, your recording will be interrupted. Click on the **Start Menu** at the bottom left of your screen and select **Settings**, then **Control Panel**. Open the **Power Options** control panel. Set the **Turn Off Hard Disks** option to **Never**.

4. **Turn off Automatic Updates.** It can be a good idea to turn off any scheduled tasks. The last thing you want is for a 150MB update to start downloading in the middle of a recording session. Open the **Automatic Updates** control panel, and select **Turn off Automatic Updates**. This means that its up to you to manually check for updates yourself. All you have to do is either revisit this Control Panel, or go to windowsupdate.microsoft.com.
5. **Turn off wireless networking.** Wireless networking can sometimes interfere with or interrupt recording. Wireless cards in computers automatically scan the airwaves for available networks. This takes up some of your system resources, and can sometimes hurt performance. If a removable wireless networking card is being used on a laptop, the card can simply be removed. If you are on a wireless network, and the card is internal, you can disable the card in the device manager while you record. Its easy to turn back on when you're not recording.

For additional tips on optimizing Windows XP, check out this [excellent article](#).

Windows Vista

1. When troubleshooting or optimizing system performance issues in Windows Vista, it is often a good idea to disable some or all of Vista's graphical effects. While they look nice, these effects can actually be just as demanding, or more demanding on your computer's system than many professional level programs available on the market. Performance on even the highest-end systems can suffer if too much demand is placed on the processor(s) at once. Disabling these graphical effects is one step towards getting the highest level of performance out of your existing computer.

To disable the aero effects

1. Right+click the background picture on your computer's desktop.
2. Select **Personalize** from the drop-down menu that appears.
3. In the window that opens, click on **Window Color and Appearance**.
4. The Window Color and Appearance control panel will open. Click on **Open classic appearance properties** for more color options.
5. A window titled **Appearance Settings** will open. Under **Color scheme**, select **Windows Vista Basic**.
6. Click **Apply**.
7. Click **OK** to close the **Theme Settings** window.
8. Close the **Personalization** control panel by clicking on the **X** in the upper-right corner of the window.

The borders of your windows will no longer be clear, freeing up system resources for other programs.

To free up even more system resources

1. Right+click the background picture on your computer's desktop.
2. Select **Personalize** from the drop-down menu that appears.
3. In the window that opens, click on **Theme**.
4. The **Theme Settings** window will open. Under **Theme**, select **Windows Classic** from the drop-down menu.
5. Click **Apply**.
6. Click **OK** to close the **Theme Settings** window.
7. Close the **Personalization** control panel by clicking on the **X** in the upper-right corner of the window.

2. **Minimize Programs running in the background.** The icons at the bottom-right of the screen, next to the clock (mostly) represent programs that are running in the background. This will include virus protection spy-ware protection etc. While recording, it is advisable to exit from these. Right-clicking any of these icons will bring up a menu. If there is a **Close**, **Exit**, or **Quit** option for any of these icons, choose it so that you have exited out of any background programs. You can double-check what applications and processes are running by looking at the **Applications** and **Processes** tabs of the **Task Manager**. To access the Task Manager, press **Ctrl+Alt+Delete**, and then click **Start Task Manager**.
3. **Turn off Automatic Updates.** It can be a good idea to turn off any scheduled tasks. The last thing you want is for a 150MB update to start downloading in the middle of a recording session. Open the **Windows Updates** control panel. Then, on the left-hand side of the window, click **Change Settings**, then choose **Never check for updates**. This means that its up to you to manually check for updates yourself. All you have to do is either revisit this Control Panel, or go to windowsupdate.microsoft.com.
4. **Turn off wireless networking.** Wireless networking can sometimes interfere with or interrupt recording. Wireless cards in computers automatically scan the airwaves for available networks. This takes up some of your system resources, and can sometimes hurt performance. If a removable wireless networking card is being used on a laptop, the card can simply be removed. If you are on a wireless network, and the card is internal, you can disable the card in the device manager while you record. Its easy to turn back on when you're not recording.
5. **Set your Power Options to High Performance.** In the **Power Options**, Control Panel, choose **High Performance**. Then click **Change plan settings** button, and set **Put the computer to sleep** to **Never**. Then click **Save Changes**.

For additional tips on optimizing Windows Vista, check out this [excellent article](#).

Macintosh Optimization Tips

1. **Turn off System Sleep.** In the **Energy Saver** System Preferences Panel, select the **Sleep** tab, and set the option titled **Put the computer to sleep when its inactive for** to **Never**.
2. **Turn off Hard Disk Sleep.** In the same System Preferences Panel, uncheck the option titled **Put the hard disk(s) to sleep when possible**.
3. **Turn off AirPort.** In the upper-right of the screen, next to the clock, click the **AirPort** icon, and select **Turn AirPort Off**. The airport automatically scans the airwaves for available networks. This takes up some of your system resources, and can sometimes hurt performance. Its easy to turn back on when you're not recording.
4. **Turn off Bluetooth.** In the **Bluetooth** Preferences Panel, uncheck **On**, and uncheck **Discoverable**. Its easy to turn back on when you're not recording.
5. **Turn off Time Machine.** If you use Time Machine to back up your computer (which is a great idea), turn it off when you're recording. Your Mac may pick some inconvenient times to start a backup. Select the **Time Machine** System Preferences Panel, set Time Machine to **OFF**. Its easy to turn back on when you're not recording.
6. **Turn off unnecessary startup items.** In the **Accounts** System Preferences Panel, under **Login Items**, uncheck any items you don't need open everytime your system boots.
7. **Quit any unnecessary applications.** When recording, make sure to exit out of any programs unrelated to your current project. This will free up the most memory possible for your recording apps. You can monitor how much of your computer's resources any program is using with the **Activity Monitor** Utility (located in Applications > Utilities).