Computer Audio Setup Guide

This guide is intended to be used as a quick reference tool for those embarking on their journey into the world of Computer Audio. While there is always more to discuss and discover, we hope that this guide serves you well.

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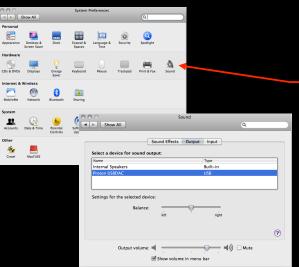
Computer Audio Setup Guide January, 2013

Getting the most out of computer audio

- How to set up your computer
- How to set up and use iTunes
- How to set up and use alternative music players
- Simple improvements and recommendations



Setting up iTunes for Mac with an External Device



- Open "System Preferences" from Apple Menu
 - Open "Sound" panel
- Click on "Output" tab
- Choose the device you would like to play music through. In this example we are selecting the "Proton USBDAC"



0 0	Sound		
Show All		Q	
	Sound Effects Output	Input	
Select an alert sound:			
Name		Туре	
Basso		Built-in	0
Blow		Built-in	0
Bottle		Built-in	Ă.
Frog		Built-in	Y
Play sound effects throu Alert volur		:	
	Play user interface sour	ad affacts	
	Play feedback when vol	•	$(\mathbf{\hat{n}})$
	Play Front Row sound e	ffects	\odot
Output volur	ne: 🛋 📊	◄))	
	Show volume in menu b	bar	

- Select "Sound Effects"
 - In "Play sound effects through:" choose "Internal Speakers"
- This will route internal alerts through the internal computer speakers



Setting up iTunes for Mac... Midi Settings

000	Audi	io Devices
÷	Built-in Microphone 2 In / 0 out Built-in Input 2 In / 0 out Built-in Output 0 In / 2 out	Proton USBDAC Clock source: Default : ??
	Proton LSEBAC Olini / 2 out	Source: Default : Format: 44100.0 Hz * 2ch-24bit * Ch Volume Value dB Mute M 0779 0.43 2: 0779 0.43
+ -	٥	Configure Speakers

- Launch Applications and select Utilities. Launch Midi
- Select Output
 - Select the device you would like to play music through. In this example we are selecting the "Proton USBDAC"
 - Under "Format" select native sampling rate of your files - e.g. Compact Discs are 44.1khz



Setting up iTunes for Mac... Midi Settings

- Some of your files may be in a different format, such as 24 bit 96Khz (see the file sample rate example from iTunes below)
- In order to play these files at their intended sampling rate the midi must be manually adjusted to that native sample rate

		101100-000								_	
~	Name	Time	Artist	Album	Genre	Bit Rate Rating	Sample Rate ▼	Plays La	nst Played		
~	1921	2:49	The Who	Tommy 96/24	Rock	4608 kbps	96.000 kHz			6	м
V	101 Eastbound	5:57	Fourplay	Fourplay 96/24	Jazz	4608 kbps	96.000 kHz			۲	R
V	24 Hours of Love	3:58	Rebecca Pidgeon	Retrospective 9	Pop	4608 kbps	96.000 kHz				0
V	21st Century Schizoid Man I	6:58	King Crimson	In The Court Of	Rock	4608 kbps	96.000 kHz			П	
V	21st Century Schizoid Man	7:22	King Crimson	In The Court Of	Rock	4608 kbps	96.000 kHz				
~	14 A Brand New Song	3:58	John Mellencamp	Life Death Love	Rock	4608 kbps	96.000 kHz				



Setting up iTunes for Mac... Midi Settings

000	Audio De	evices
-	Built-in Microphone	Built-in Output Clock source: Default
	Built-in Output 0 in/ 2 out	
Ŷ	Proton USBDAC 0 in/ 2 out	Source: Internal Speakers
		Ch Volume Value More M
+ -	Configure device Configure speakers	Configure Speakers
	 Use this device for sound input ● Use this device for sound output ■ Play alerts and sound effects through this dev 	ice

- Highlight/select "Built-in Output"
- Click on "Widget" drop down button
- Select "Play alerts and sound effects through this device"



000		Audio D	Devices	
2 i	uilt-in Microphone in/ 0 out uilt-in Input in/ 0 out	Ť	Built-in Output Clock source: Default ÷	?
t Pr	uilt-in Output in/ 2 out roton USBDAC in/ 2 out	₽	Source: Internal Speakers	
			Format: 44100.0 Hz 2ch-32bit 5 Ch Volume Value d8 M M	lute
+	& •		Configure Speakers	

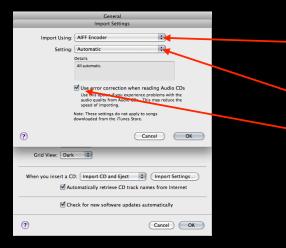
- Now iTunes will play through the external device
- Alerts will be routed to the internal speakers



	G	eneral	
General	Playback Sharing S	tore Parental	Devices Advanced
Library Name:	steve silberman's Li	ibrary	
Show:	Movies	E	Ringtones
1	TV Shows	6	🗹 Radio
1	Podcasts	6	Ping
(🗌 iTunes U	6	🗹 iTunes DJ
1	Books	6	🗹 Genius
I	Apps 🗹		
Source Text:	Large 🛟	6	Show source icons
List Text:	Large 🛟	6	Show list checkboxes
Grid View:	Dark ‡		
	rt a CD: Import CD		Import Settings
	Automatically retr	rieve CD trac	k names from Internet
l	Check for new so	ftware update	es automatically
(?)			Cancel OK

- Launch iTunes application
- Open "Preferences" from menu Bar
 - Select "Import Settings"

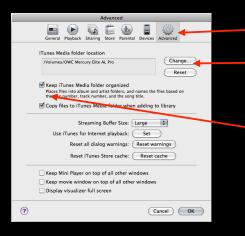




Select Encoder - choose AIFF or Apple Lossless

- "Setting" leave this as "Automatic"
- Check "Use error correction when reading Audio CDs"
- Click OK





- Click "Advanced" tab
- iTunes Media folder location: click "Change" button to select the desired location/storage hard drive
 - Check "Keep iTunes Media folder organized" & "Copy files to iTunes Media folder when adding to library"
- Click OK to finish







Click Window (menu bar)

Select "Equalizer"

Uncheck "on"



Pure Music is...



- High-resolution, high-performance music playback software for Mac computers
- Automatically docks with iTunes
- iTunes acts as GUI, database, playlist organizer, etc. but doesn't play the music. Pure Music replaces the actual iTunes player software
- Automatic sample rate switching
- Plays all iTunes file formats as well as FLAC



Pure Music for Apple iTunes

Preferences
Processing Load: < 1 %
Audio Settings Music Server Settings Registration
Basic Advanced Special
The original, default settings are best for new users. Please read option descriptions in the User Guide before changing settings. Memory Play Options
☑ Gapless Playback of Gapless Tagged Music ☑ Hybrid Memory Play
Preallocate (Don't Release Memory) Takes effect on next launch
When Ready to Play: Ø Announce Sample Rate Bep Ø Announce Sample Rate Changes © Datag Only Ospitem Audio ○ Main Audio Volume:
Monochromatic UI Skin Takes effect on next launch
Defaults
Close Preferences

- Purchase and download Pure Music
- Launch Pure Music application
- Open "Preferences" panel in Pure Music
 - Configure Audio-Output-Device: click "Audio Setup..." button at the bottom of the Preferences panel to select and configure the Audio Output Device



Pure Music for Apple iTunes...

tput Device	i larget sample rate ar	e only updated at la	unch time.
Built-in Output Ayre USB Interfa Current: Built-in	ce 🚽	Target: 44	¢ \$100
Enable Exclusion	ive Access ("Hog" Mode)	Limit Rate: 192 kH See User Guide Befor	
put Device	ione	44.1 kHz	•
Built-in Microph			
Built-in Microph	Microphone	Target: 44	\$100

Select the device you would like to send your music to. In this case we are selecting the "Ayre USB Interface"

There's a lot more Pure Music can do! Spend some time with the owners manual



Can You Hear Ones and Zeros?

No matter how an audio signal is packaged, stored and transferred, the music is always analog ... but after all that digital packaging and reconstruction, is it still music?

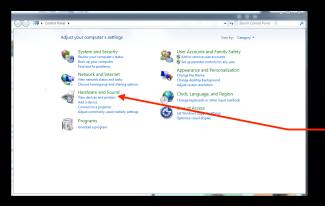
Since long before the CD and MP3, the many ways in which cable can damage audio information have been denied, debated, and proven. Since the CD arrived, the mechanisms which damage a digital audio signal have been denied, debated, and proven.

Now, audio is shifting to being stored in the "Cloud" and on drives, whether spinning or solid-state. Now HDMI and USB are becoming the dominant transfer modes ... and now, same as before, audio quality continues to be easy to damage. The frontier might seem to move so fast that old problems are dead and buried, but in fact, respect and care are exactly as important as ever before.

AudioQuest is not better because we have been minimizing damage to audio since 1980, but this does give us perspective. It is our competence today, facing today's challenges, which we hope will earn your attention, your listening, and if we earn it, your respect.



iTunes for Windows 7 and 8



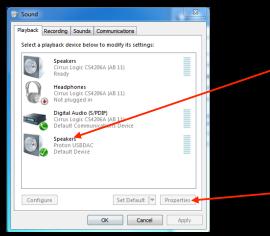
Launch "Control Panel"

Open "Hardware and Sound" panel



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iTunes for Windows 7 and 8...



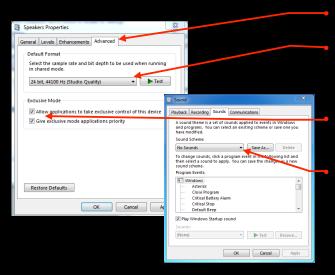
Newly connected external device is added as "Speakers"

 Playback: Select preferred audio device. In this case it would be the "Proton USB interface"

Click "Properties" button for more setup options



iTunes for Windows 7 and 8...



Click "Advanced" tab

Select the native sample rate of your music, for most users this will be 44100 Hz

Exclusive Mode: check both options then click "OK"

Click "Sounds" tab, under "Sounds Scheme" select "No Sounds", this will prevent internal sounds from playing back through the stereo system



Setting up iTunes for Windows 7 and

8...

General		2	-	x
Genera	Playback Sharing	Store Parental	Devices Advanced	
	Steve's Library	Ringtones		
	V TV Shows V Podcasts	✓ Radio ✓ Ping ✓ ITunes DJ		
	Books	Genius	aries	
Source Text List Text		Show source		
Grid View When you	insert a CD: Import CD	and Elect 👻	Import Settings	
	Automatically retriev	ve CD track names fr	om Internet	
	Check for new soft		tically	
Language	English (United States	:) 🔻		
?			ОК	Cancel

Launch iTunes application

 Click "Edit" drop down from the main menu bar, select "Preferences"

Select "Import Settings"



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Setting up iTunes for Windows 7 and

	@ Genera	1	×	
		General Playback Sharing Store Parental Devices Advanced		
		Library Name: Steve's Library		
		Sources: V Movies Ringtones		
@ 1	mport Settir	ngs 22		
	Import Using:	AIFF Encoder		
	Setting:	Automatic		
		Detalis Al sutomatic. eckboxes		
		Use error correction when reading Audo CDs Use this option if you experience problems with the audio quality trom Audo CDs. This may reduce the speed of importing.		
		Note: These settings do not apply to songs downloaded the Tunes Store.		
2	2	OK Cancel Ibcally		
		III Brable full keyboard navigation Language: English (United States) ▼		
	?	OK Can	cel	

Select Encoder - choose AIFF or Apple Lossless

"Setting" leave this as "Automatic"

Check "Use error correction when reading Audio CDs"

Click OK



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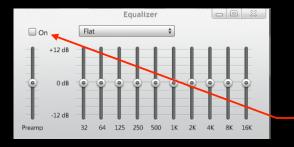
Setting up iTunes for Windows 7 and

@ Advanced	
General Playback Sharing Sore Parental Device Advanced	
iTunes Media folder location	
Cildeer/SteveMusik/Tures/Tures Media Center	
V Keep IT unes Media folder organized Sec. For long signs and write folder, and names the files based on the disclumber track formers as a finance track.	
Copy files to iTunes Media folder when adding to library	
Reset all dialog warnings: Reset warnings	
Reset Trunes Store cache: Reset cache	
Keep Mini Player on top of all other windows	
Keep movie window on top of all other windows	
Display visualizer full screen	
Show iTunes icon in system tray	
Minimize Tunes window to system tray	
2 OK Cancel	
	-

- Click "Advanced" tab
 - iTunes Media folder location: click "Change" button to select the desired location/hard drive
 - Check "Keep iTunes Media folder organized" & "Copy files to iTunes Media folder when adding to library"
- Click OK to finish



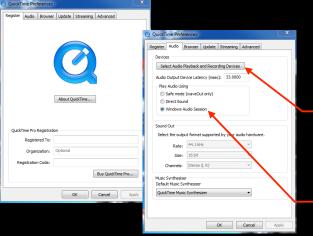
Setting up iTunes for Windows 7 and 8...



- Click "View" drop down from the main menu bar.
- Select "Show Equalizer"
- Uncheck "On"



QuickTime for Windows 7 and 8



- Launch QuickTime application
- Open QuickTime "Preferences"

Click "Audio" tab, then select "Audio Playback and Recording Devices"-then select the device that you want to play your music through

Under "Audio Output Device Latency" check "Windows Audio Session"

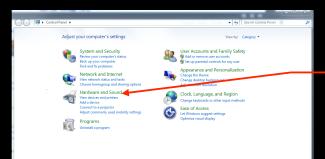


J. River Media Center is...



- J. River is a whole house media center for music, movies, and photographs
- Sound quality leader for Windows based systems (Windows only)



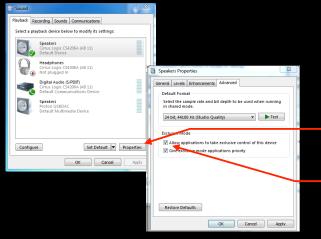


Purchase and download J. River

- Launch "Control Panel"
- Open "Hardware and Sound" panel



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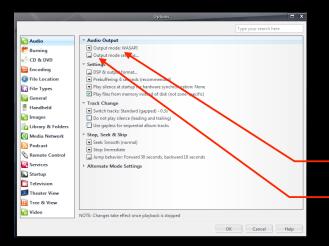


 Select "Playback" audio device to internal speakers. Do not select the external DAC!

Click "Properties" button, select "Advanced" tab

Exclusive Mode, check both options then click "OK





- Launch J. River application
- Open "Options" panel from main menu, select"Tools", then "Options"
 - Under "Audio Output" select WASAPI
 - Click "Output mode settings..."



	WASAPI Settings	X
Device		
Device:	Speakers (Proton USBDAC)	-
🛛 Open	device for exclusive access	
Flush the st	device buffers on startup (use if you hear a tick or miss p art)	art of
🛛 Flush	device buffers on pause (use if you hear looping on paus	
Prese	nt 24-bit data in a 32-bit package (required by some hard	iware)
Bufferi More Ski Resistant NOTE: In	P 0.11 seconds	More Responsive hiccup,
	increases the time it takes for cross-fades and smooth-se	
	ОК	Cancel

Select desired audio device from "Device" drop-down menu

Check "Open device for exclusive access" option

Click OK



		Options										
				Type your search here								
Audio	* Audio Output											
Burning	Output mode:	WASAPI										
CD & DVD	Output mode s	ettings										
Encoding	* Settings											
	DSP 8	iomat .	-									
File Location		seconds (recommended) startup for hardware synchronization: None										
File Types	Pray silence at s	DSR Studio	_		- ×							
G					(100) (000							
H Effects				Format back doesn't support processing								
In Headphones	Sound can be o	idnut in any format. For example, you can listen to an a	uudio C	D in 5.1 surround at 32-bit / 192 kHz. Advanced settings like mul	furbannel							
Li Coutput Format		sample rates require a sound card capable of these mod										
M Tempo & Pitch	Sample rate			Bitdepth								
Pol	Resamples	No resempting	~		-							
R	Sample rate:		Y	Bitdepth is the resolution of playback. The internal audio pa 64-bit, so this setting only adjusts the final format delivered	to the							
	Sample rate i grade resamp		hardware. ASIO output ignores this setting and uses the ha native bit depth.	rdwale's								
) SI	No changes a	are made if the same sample rate is selected as the input.		No changes are made if the same bitdepth is selected as the Requires stop of playback for changes to take effect.	input.							
т	Channels	Are Billing and Constraints of the second se	Subwoofer									
π	Channels:	Source number of channels	~	Something outside Media Center will make the subwoofer +10 dB (
т				When source has no subwoofer (CD audio, etc.) and 'Chan	vels'							
3 *1	Mixing:		~		~							
				 Subclarity (tm) for cleaner, tighter subwoofer output. 								
_			When source has a subwoofer (DVD, HDTV, etc.):									
		he number of speakers used for playback. JRSS mixing	Source is correctly mastered for +10 dB calibration									
	Configure th	h-quality upmixing from 2.0 to 7.1, 5.1 to 7.1, and more. e subwoofer using the Subwoofer section on this page a management features of the 'Room Correction' DSP.	Subwoofer settings control how the subwoofer and LFE channel is handled. The settings are only meaningful if you have a subwoofer connected to your system.									
Drag items to reord Add Plug-in.	No changes a	are made if the same number of channels is selected as th resistop of playback for changes to take effect.	Please use the bass management features of 'Room Correction' if you wish to redirect bass to the subwoofer.									
Peak Level: n/	a Overflow Hand	ing: Clip protection		•	Help							

Click "DSP & output format" button to open "DSP Studio" panel

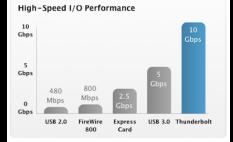
Under "Sample rate" choose "No resampling"

Under "Bitdepth" select bit rate to match that of the intended audio device such as a DAC

Explore!



External Hard Drive Connectivity



													_
FireWire 400 400 Mb/s													
USB 2.0 480 Mb/s													
FireWire 800 800 Mb/s													
eSATA				1.1	3 G	b/s							
SS SuperSpeed USB 3.0										5	Gb	o/s	
													_

- When possible avoid sharing the same bus to send and retrieve data. This means if you are using a USB DAC try and use a different type of connection (FireWire) for the external HD
- The faster the HD connection the better the sound
- Cables makes a difference! Between the hard drive and the audio device

audioauest

 Mechanical isolation makes a difference. Try Q-Feet.