Apple CD-ROM drives: Audio CD Playback (7/95)

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TOPIC ---

This article addresses many issues regarding the playthrough of audio CDs on Apple CD-ROM drives.

DISCUSSION ---

Question:
Does the processor load affect sound quality of audio CDs?

Answer:
The processor load does not have any effect on the performance of audio CDs.*

Question:
Where is the audio signal generated?

Answer:
The sound for Red Book** audio discs is created by a Digital to Analog converter in the CD-ROM drive.

Question:
How does sound get routed to the speaker on an internal CD-ROM drive?*

Answer:
The internal CD-ROM drives's audio output is connected to the logic board. That circuit is passed through the sound chip, and is then output through the regular sound output architecture. No additional processor load is incurred during the trip through the sound chip.

This analog signal is then passed into the sound chip, converted to digital data, manipulated, converted to an analog signal, and passed directly to the internal speaker(s) as a monaural signal or to the speaker jack as a stereo signal.

Question:
How does this differ on an external CD-ROM drive?

Answer:
On an external CD-ROM drive, the sound signal is routed to the RCA jacks on the back of the drive and to the stereo headphone jack on the front of the drive. This signal can then be connected to the sound input jack on the Macintosh for playback on the internal speaker(s), provided that the computer involved supports playthrough from the microphone port. The microphone input jack then goes into the same sound chip for processing.

Question:
What software components can affect an audio CD performance issue, such as a skipping CD?

If the regular CD-ROM Setup software, Foreign File Access extension, Audio CD Access or their dependent preferences are corrupted, then sound quality could be compromised or altogether stopped.

Question:
Can the use (or non-use) of QuickTime, QuickTime PowerPlug, MultiMedia Tuner, Sound Manager, the Sound control panel, or virtual memory make a difference in the quality of audio CD playthrough?

Answer:
No, because those software components and variables do not have a function in audio CD-ROM playback. If affecting one of these variables does make a difference, they are suppressing a symptom, not correcting it.

Question:
How does the AppleCD Audio Player command the CD-ROM drive to play a track?

Answer:
AppleCD Audio Player reads the "Red Book" audio tracks and knows where tracks begin and end, how long they are and all the available information about the track. It will command the CD to either play the entire content of the CD, or the AppleCD Audio Player software can be configured to play specific tracks.

Question:
What troubleshooting steps are recommended, to rectify erratic audio CD sound?

Answer:
Once verifying that it is an issue with audio CD playback, follow these steps for troubleshooting::

Step 1

Clean the CD. Use a lint-free cloth, sweeping from the hub of the CD, outwards.

Step 2

Try repeating the issue by using multiple CDs.

Step 3

Move these preferences out of the System Folder, and restart.

- AppleCD Audio Player Prefs
- CD Remote Programs
- Sound Preferences

Note: CD Remote Programs contains AppleCD Audio Player's default programs, such as CD titles, track names, and so on.

Step 4

Re-install the system software.

Step 5

Clean install.

Notes:
*The Macintosh Quadra 840AV and 660AV computers use the DSP (Digital Signal Processor) to digitize audio from the CD player, which is then sent to the DAC (Digital-to-Analog Converter) to create analog audio. This causes a slight processor load on the main processor and may affect playback.

**The Red Book specification is for digital audio CDs. All audio CDs use this specification to assure that any audio CD-ROM in the world works with any audio CD-player. The Red Book specification was developed by Phillips and Sony.

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