Emulator - Emulator Issues #7234

Tales of Symphonia (GC) audio stutters on opening video [cpuTiming]

04/24/2014 08:03 PM - magumagu9

Status:	Accepted		**% Done:**	0%
Priority:	Normal			
Assignee:				
Category:				
Target version:				
Operating system:	N/A		**Relates to performance:**	No
Issue type:	Bug		**Easy:**	No
Milestone:			**Relates to maintainability:**	No
Regression:	No		**Regression start:**	
Relates to usability:	No		**Fixed in:**	

Description

Game Name?
Tales of Symphonia

Game ID?
GQSEAF

What's the problem? Describe what went wrong in few words.
The audio stutters on the opening video.

What did you expect to happen instead?
Audio shouldn't stutter.

What steps will reproduce the problem?
1. Open the game.
2. Wait. (No interaction required.)

Dolphin 3.5 and 3.5-367 are old versions of Dolphin that have
known issues and bugs, so don't report issues about them and test the
latest Dolphin version first.
Which versions of Dolphin did you test on?

Dolphin 4.0-1386, 4.0-1468

Does using an older version of Dolphin solve your issue? If yes, which
versions of Dolphin used to work?

No.

What are your PC specifications? (including, but not limited to: Operating
System, CPU and GPU)
Windows 8.1 64-bit
Intel Core i5-3317U

Are you using the 32 or the 64 bit version of Dolphin?
64-bit.

Is there any other relevant information? (e.g. logs, screenshots,
configuration files)

It sounds sort of like stuttering you might get if Dolphin was running too slow, but it isn't: the same problem shows up setting the
framelimiter to 30fps.

Reproduces with both HLE and LLE audio, and multiple audio backends.

If I "overclock" the CPU (set CPU_CORE_CLOCK to the Wii clock frequency), the stuttering goes away. Not completely sure what that means, but it might be helpful.

Related issues:

Has duplicate Emulator - Emulator Issues #8382: Viewtiful Joe Pal Version Pro...   **Duplicate**

History

#1 - 04/24/2014 08:58 PM - JMC4789

- Status changed from New to Accepted

Confirmed; the video itself seems to stutter too during the audio lags. Seems as though the emulated CPU is slowing down when it shouldn't be, maybe?

#2 - 04/27/2014 12:04 AM - delroth

I've noticed that too, maybe our clock cycles/op are wrong?

#3 - 04/27/2014 02:00 AM - magumagu9

Our cycle estimates are extremely unrealistic: the chip is superscalar, and we don't model the pipeline at all.

#4 - 04/27/2014 02:07 AM - JMC4789

Could this explain why the emulator doesn't slow down properly in one of the Spyro games, causing a few tricks to be impossible?

#5 - 04/27/2014 03:38 AM - magumagu9

Possibly? You can experiment with the emulated CPU speed by modifying the setting of CPU_CORE_CLOCK in PreInit() in SystemTimers.cpp (line 260).

The other big potential source of slowdown which we don't model is the graphics pipeline: we currently assume graphics rendering completes instantly.

#6 - 05/11/2014 10:24 AM - degasus

magu: only on single core. On dual core, the game may wait for the gpu and waste emulated time. So is it required to overclock the emulated cpu on single core?

#7 - 07/07/2014 04:13 AM - JMC4789

I tried this same trick (OCing the GC) on MegaMan X Collection, and it doesn't seem to help the stuttering audio in those FMVs. The stuttering audio seems to kick in after 15 - 20 seconds, and then goes away eventually, usually after another 15 - 20 seconds.

#8 - 10/20/2014 01:42 AM - JMC4789

It seems as though something is going on regarding the CPU Timing. Two people have confirmed it's working in this Pull Request.
https://github.com/dolphin-emu/dolphin/pull/1316

https://dl.dolphin-emu.org/prs/pr-1316-dolphin-latest-x64.7z

It's a hacky WIP and not guaranteed to be the correct fix, so not marking as fixed in PR or anything like that.

#9 - 12/03/2014 07:49 AM - darkrocket

In 4.0-4424 audio stutters two times on the oppening video (with HLE and LLE). I've tried with pr-1316 and the problem disappears.

#10 - 03/19/2015 11:32 AM - JMC4789

issue 8382 has been merged into this issue.

#11 - 01/10/2017 08:11 PM - skeer

Hey, I'm having the audio stutter on Dolphin 5.0, I tried doing some research, found something interesting: disc 1 stutters, but the same intro on disc 2 has no lag or stutter at all. I used HxD to compare the title.tpl (I'm assuming that's the intro, no clue), and they both have the exact same binary.

It almost seems like there's a setting affecting disc 1 or 2 differently, even though they both are gqseaf. Hopefully disc 1 can read audio propperly eventual. Hope this helps

#12 - 01/10/2017 09:17 PM - JMC4789

Just so people don't get confused by this comment in the future, let me clarify.

Disc 2 doesn't stutter because it uses a lower quality video than disc 1. For some reason the opening is significantly smaller (just over half the file size of disc 1's opening) which makes it less intensive to decode.

The problem here is that our CPU timings are incorrect and something that uses the near maximum of the GameCube's processor is lagging in this situation due to timing differences.