

## Emulator - Emulator Issues #12636

### Aging Test report

08/23/2021 03:29 AM - FireNX70

<b>Status:</b> New	<b>% Done:</b> 0%
<b>Priority:</b> Normal	
<b>Assignee:</b>	
<b>Category:</b>	
<b>Target version:</b>	
<b>Operating system:</b> N/A	<b>Relates to performance:</b> No
<b>Issue type:</b> Bug	<b>Easy:</b> No
<b>Milestone:</b>	<b>Relates to maintainability:</b> No
<b>Regression:</b> No	<b>Regression start:</b>
<b>Relates to usability:</b> No	<b>Fixed in:</b>
<b>Description</b>	
<b>Game Name?</b>	
Aging Test For Production Discs	
<b>Game ID?</b> (right click the game in the game list, Properties, Info tab)	
102E01	
<b>MD5 Hash?</b> (right click the game in the game list, Properties, Verify tab, Verify Integrity button)	
e99720d85cef42615adbbf1a6e943a41	
<b>What's the problem? Describe what went wrong.</b>	
There's two problems, at the very least. Probably a lot more.	
<ol style="list-style-type: none"><li>1. The test always reports the disc drive as being inoperative. This seems to be harmless.</li><li>2. The first test crashes dolphin. It used to just hang on older versions. On newer versions it complains about an unknown pointer and as soon as you exit the dialog it shuts down. The values of the pointer, the program counter and LR (link register?) (0x03358f20, 0x80018800 and 0x80018c0c; respectively) seem to be consistent. A fourth value, r-time, provided by the test and printed below version date; also seems to consistently be 624 microseconds.</li></ol>	
<b>What steps will reproduce the problem?</b>	
Boot the game up, wait until the ARAM test is done (about 8s if running full speed) and press B. No other input seems to have any effect at this stage. The test suite later lists its button mappings, but it doesn't seem to respond to them before the crash happens.	
<b>Is the issue present in the latest development version? For future reference, please also write down the version number of the latest development version.</b>	
Yes, 5.0-14988.	
<b>Is the issue present in the latest stable version?</b>	
Most likely. However, the test might not even boot on 5.0.	
<b>If the issue isn't present in the latest stable version, which is the first broken version?</b> (You can find the first broken version by bisecting. Windows users can use the tool <a href="https://forums.dolphin-emu.org/Thread-green-notice-development-thread-unofficial-dolphin-bisection-tool-for-finding-broken-builds">https://forums.dolphin-emu.org/Thread-green-notice-development-thread-unofficial-dolphin-bisection-tool-for-finding-broken-builds</a> and anyone who is building Dolphin on their own can use git bisect.)	
It's probably been broken from the very beginning, in some form or another.	

If your issue is a graphical issue, please attach screenshots and record a three frame fifolog of the issue if possible. Screenshots showing what it is supposed to look like from either console or older builds of Dolphin will help too. For more information on how to use the fifoplayer, please check here: <https://wiki.dolphin-emu.org/index.php?title=FifoPlayer>

N/A

What are your PC specifications? (CPU, GPU, Operating System, more)

N/A

Is there anything else that can help developers narrow down the issue? (e.g. logs, screenshots, configuration files, savefiles, savestates)

As a side note, the aging test started booting before 5.0-756. I can't go back any further than that without deleting my settings which I don't wanna bother with. It might have actually started booting before 540 though, since the wiki is already wrong about memcards having anything to do with the program's behavior (did the exact same thing both with and without memcards and always got the same results).

The only reason I decided to test this was to see if the recent DSP fixes did anything, which does not seem to be the case (sadly, the service disc's DSP tests don't seem to be affected either). Anyway, I'll bisect the hang's behavior change later.

## History

### #1 - 08/23/2021 04:25 AM - FireNX70

By the way, I just saw <https://github.com/dolphin-emu/dolphin/pull/10051>. The behavior I observed was already there before any of the recent DSP commits were merged. I've tested with a build somewhere in the 13000s and it still crashed and spat the same values. I've also tested with the DSPLLE interpreter on 14988 and it behaves exactly the same as the recompiler.

### #2 - 08/23/2021 06:26 AM - FireNX70

```
>=12548      Complains about drive, passes DI test, crash on DOL-FAT at 624 usec.
12436 - 12546 Complains about drive, passes DI test, crash on DOL-FAT at 324 usec.
11476 - 12426 Complains about drive, CMD ERR, not sure if during DI test or during DOL-FAT.
10497 - 11458 Complains about drive, passes DI test, crash on DOL-FAT at 324 usec.
<=10495     Complains about drive, passes DI test, hangs on DOL-FAT at 324 usec.
```

Worth noting is the fact that 11476 through 12426 don't crash or hang automatically, allowing the user to run some tests. That is, if the user can make heads or tails of the control scheme, which changes depending on where the cursor is. The timing change on the hang comes down to DI timing changes and the pointer, PC and LR values seem to be unaffected.

While testing some builds that didn't crash I ran a couple of DI tests. Some complained about command errors, some seemed to pass. IIRC, some EXI test crashed. Also, running the DOL-FAT test manually seems to crash the test suite too.

### #3 - 08/23/2021 06:41 AM - FireNX70

Just to clarify, when testing on 11476 - 12426 the EXI test and DOL-FAT would hang, but Dolphin itself was fine.

### #4 - 10/13/2021 03:28 AM - FireNX70

I recorded the test running on console around the same time I first posted this, but I only got around to uploading it now. Don't know if it'll help but here it is: <https://www.youtube.com/watch?v=2Lcq-RWsHJY>

**#5 - 11/21/2021 07:20 PM - ZephyrSurfer**

In my testing the wiki is correct. The port needs to not be set to memcard or GCI etc.

This also needs XFB set to Real in order to display things in those earlier revisions.

The first time it gets to the second screen is 4.0-9154.

(Note: maybe unrelated but the revision 4.0-8340 caused unknown Pointer popups)

**#6 - 11/21/2021 09:49 PM - ZephyrSurfer**

In my testing the wiki is correct. The port needs to be empty not be set to memcard or GCI etc.

Below is testing with Default Settings other than XFB Real (Required to see something other than black screen and no Memcard set). No IPL.bin (Which greatly affects behaviour) or anything else.

1:

3.0-797 (First to get past ARAM)

Gets to 2nd screen for first time.

Memcard set or not doesn't matter.

2:

4.0-3409

No longer gets past ARAM.

Broken:

4.0-8340

Some unknown pointer errors on ARAM test too

3:

4.0-9154

Gets to Second screen past the ARAM.

Needs No Memory Card/GCI set to do so though

4:

5.0-470

Stops the unknown pointer popups on ARAM screen

5:

5.0-2431

The third screen now produces invalid read popups

6:

5.0-11476

Makes the third screen work for first time. No freeze at that point.

7:

5.0-12436

Makes the third screen produce unknown pointer errors

**#7 - 11/21/2021 09:56 PM - ZephyrSurfer**

That should have been 3.0-796. Oops

**#8 - 11/21/2021 10:07 PM - ZephyrSurfer**

That should have been 5.0-478 for point 4. Oops

**#9 - 01/05/2022 02:26 PM - FireNX70**

I've retested both on 14988 and 15793. Both of them hang if I use memcards/GCI folders. I've tried three raw images (one of them empty), and a GCI folder. I'm 100% positive this was actually working despite the memcards last time I checked.

This seems a bit far fetched, but my only guess is that the contents of the memcards (iirc memcard size is always maxed out by default on Dolphin, so it couldn't have been that) might have an effect on whether this hangs.

Whether "Skip IPL" is enabled also affects the program's behavior. If it's disabled and a memory card is inserted, it gets to the point where the purple dialog flashes and then seems to hang. If you boot straight into the program, the dialog disappears after flashing. If instead you first boot into the menu and then into the test, the dialog stays visible after flashing.

More importantly, not skipping the IPL gets rid of both the "drive power down" warning and the crashes. Instead, it gets to memrange.dol and hangs. Also, during sramTest it complains about an unknown FIFO OpCode. Given the fact that it's 0xff, that it seems to be harmless, and that every time I've seen an 0xff FIFO warning it's been the usual timing shenanigans at startup; this is more than likely not a big deal.