

Significant change in loop speeds (regressing using while loop on ARM chips)

06/16/2022 10:21 PM - tarell (Brandon Hicks)

Status:Feedback

Priority:Normal

Assignee:

Description

I was benchmarking some code and one of the benchmarks I came across was [fast-ruby's](#) while vs each_with_index. I ran these test multiple times and got very similar results.

Both of these machines benchmarks were ran with ruby v3.1.2.

Intel - i9/32gb Ram (I also ran this on a linux VM or similar specs and got similar results)
ARM - AppleSilicon/32gb Ram

The reason I bring this up, is because most people develop on a Mac and now more than likely on AppleSilicon. But once deployed on a VM or container it's more than likely running on an intel based architecture. I'm kind of curious why there is such a massive change in the loop speeds between the two architectures such as while being 31% slower on ARM but also at the same time each_with_index is 42% faster.

If someone develops their code on their ARM devises and using the faster of the methods. Once deployed it may run significantly slower than expected because of the architecture speed differences.

Intel

Warming up -----

While Loop37.108k i/100ms

each_with_index15.900k i/100ms

Calculating -----

While Loop390.930k (± 2.3%) i/s -1.967M in5.033609s

each_with_index158.754k (± 1.7%) i/s -795.000k in5.009286s

Comparison:

While Loop:390930.1 i/s

each_with_index:158753.7 i/s - 2.46x (± 0.00) slower

ARM

Warming up -----

While Loop26.594k i/100ms

each_with_index27.316k i/100ms

Calculating -----

While Loop268.372k (± 0.1%) i/s -1.356M in5.053798s

each_with_index273.584k (± 0.2%) i/s -1.393M in5.092110s

Comparison:

each_with_index:273584.4 i/s

While Loop:268371.7 i/s - 1.02x (± 0.00) slower

History

#1 - 06/16/2022 10:22 PM - tarell (Brandon Hicks)

- Subject changed from Significant change in loop speeds (regressing in while loop on ARM chips) to Significant change in loop speeds (regressing using while loop on ARM chips)

#2 - 06/16/2022 10:50 PM - alanwu (Alan Wu)

Interesting! Can you post the output of:

\$ ruby -ve 'pp RbConfig::CONFIG, RubyVM::OPTS'

For your ARM build of Ruby? I suspect the performance difference could be explained by compiler differences.

#3 - 06/23/2022 03:30 PM - alanwu (Alan Wu)

11/16/2025

1/2

- Status changed from Open to Feedback

#4 - 06/29/2022 01:03 AM - tarell (Brandon Hicks)

- File arm_rbconfig.rb added
- File intel_rbconfig.rb added

Attached are both the Intel and ARM rbconfigs.

Note: both have the ruby version installed through ASDF and running the same ruby versions side-by-side.

Files			
arm_rbconfig.rb	11 KB	06/29/2022	tarell (Brandon Hicks)
intel_rbconfig.rb	10.9 KB	06/29/2022	tarell (Brandon Hicks)