has anyone benchmarked Excelsior JET compile-to-native against a standard java runtime?

Asked 12 years, 5 months ago Modified 6 years, 5 months ago

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11

Has anyone ever tried benchmarking a java application compiled to native using Excelsior JET against the same application running just-in-time on a normal java runtime? The only benchmark I can find is hosted on Excelsior's website and is for a single application; I'd like to see some independent results.

My application has both high CPU and memory usage (it's training machine learning models). I don't expect a performance increase with using Jet, but I may need to run on an environment that doesn't have the java runtime available (hence the compile to native) and I need to know if the performance would be much worse.

I know that Excelsior have an eval. available, but I'm hoping to save the time downloading, configuring, testing it etc...

java performance compilation

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asked Jul 18, 2012 at 13:47

Philip Welch

4,498 ● 2 ● 21 ● 17

4 Answers

Sorted by: Highest score (default)

23

DISCLAIMER: I work for Excelsior.

To answer your question, the most recent third-party benchmarking results that I know of are **these**, but I've just checked - that post is over four years old...

Now if you allow me to provide some advice:

Based on over 13 years of Excelsior JET market life, I can tell you that you *have* to test it against your particular application. No benchmark will give you any idea how *your app* will behave when natively compiled. As we say, your mileage will vary. We have customers reporting increases in speed that we've never seen in our lab, and we have prospects abandoning their evaluation early because their apps become much slower. (The latter often happens due to misconfiguration - e.g. not all classes get precompiled - so please contact our engineers if you run into something like that.)

There are also some case studies with performance comparisons on our Web site (#1, #2), but of course those are from users whose apps became faster. ;)

Update 15-Dec-2014: A word of caution: As of Excelsior JET 10, the 64-bit version is lagging behind the 32-bit one in terms of performance, as the former is based on the new, built from scratch compiler core that has less optimizations implemented. We are working hard on reversing this situation, but for now, if performance is important to you *and* you don't have any really good reason to use the 64-bit version, such as large heaps or the need to integrate with 64-bit native libraries, or the need to target OS X, stick with the tried and true 32-bit version.

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edited Dec 15, 2014 at 3:06

answered Jul 19, 2012 at 3:36

Dmitry Leskov

3,155 ● 1 ● 21 ● 17

9 +1 for presentation (disclaimer plus a balanced answer that doesn't smell "markety") – Sam Harwell Apr 25, 2013 at 18:22

1 Thanks for your honest answer. I wish this will contribute in getting you customers. – Tarik Dec 2, 2016 at 11:25

9

I use Excelsior JET for a freeware game. In my tests, the game doesn't run faster or slower, but the framerate is way more consistent with Excelsior JET than with Oracle's VM. The startup of our game is way better with

JET. JVM takes a while to warm up and load all classes, but with JET it's running immediately.

Memory consumption can be a bit higher with Excelsior JET if you use lots of threads - because by default Excelsior JET uses large fixed thread stack sizes. But that can be configured - so it's not an issue.

Support by email is also very good. You get to talk with engineers, not support personnel. If you do happen to find a bug a fix is usually only a day away. I'd also like to note that I had some weird unreproducable crash reports from users with earlier releases of JET (>2 years old or so). The current releases (7.6, and now 8.0) are both rock-solid. We don't see any crashes on ten-thousands machines.

In a nutshell: I can recommend Excelsior JET, performance is (in our case) as good as with the JVM.

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answered Apr 25, 2013 at 15:48

Simon

1,853 ● 21 ● 40

1

I used the `Excelsior JET 15.0 for Windows` test version to natively compile a CPU and memory intensive application of mine.

The native compilation time took around 40 minutes. The original `JAR` file was `10MB` (due to libraries) and the native `EXE` `60MB` due to the bundled `JRE 8` so this isn't

great unless not requiring a Java installation is desired. **In terms of startup time**, `JET` seems to do better. In terms of consistent feel of the `Swing GUI` `JET` also won or at least tied with the `JRE`. **In terms of performance and memory usage** I surprisingly could not identify a reasonable improvement: Sometimes the `JIT` `JAR` won and sometimes the native binary. They performed fairly evenly.

In terms of reverse engineering protection, `JET` is the best I've seen since the native binary is huge, stripped and you cannot sanely navigate or decompile it whatsoever to extract what you want. On the other hand, `.jar` files and `.class` files are very easy to decompile back to almost exactly the same source code.

Overall, you may decide whether going through the trouble of configuring and potentially properly licensing `JET` is worth it for your use case since using it does not only have its suggested upsides, it heavily depends on the nature of your project as well.

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edited Jul 24, 2018 at 22:52

answered Jul 24, 2018 at 22:47

BullyWiiPlaza

19.1k ● 15 ● 131 ● 206

0

I just installed the evaluation version of Excelsior Jet 11 64 bit including Maintenance Pack 3 to see if my custom chess engine that I've written in Java gains any performance (elo-score +/- 2100). Unfortunately it doesn't, its speed is almost halved (450k nodes per second instead of 1m on an Intel Q9550). I guess this is the result of the 64 bit version of Excelsior not being as optimized.

My chess engine uses bitboards (64 bit longs) as its chessboard representation and does a lot of bitwise operations. Furthermore it does a lot of array lookups.

Memory consumption is about the same.

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answered Oct 19, 2016 at 17:42

Senders

1

Excelsior guy here. We would like to investigate this issue. Is your engine open-source or available in binary form?
– Dmitry Leskov Nov 7, 2016 at 5:33