

Pep, a Java Just-In-Time Translator

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9.11.2015 at FIT VUT Brno

Abstract

One of the latest members of the C family of languages is Java. This programming language has an excellent portability that was achieved by compiling programs to machine-independent bytecodes that can be interpreted on the Java virtual machine. The problem with Java is that interpreted performance does not match native code performance. The solution for this problem might be Pep, a Java just-in-time translator. Pep allows us to use an optimization techniques of the Self language on Java programs by translating Java bytecode into Self. Therefore, it is possible to execute Java programs on the Self virtual machine and benefit from the optimization performed by the Self compiler itself. We describe a design of Pep, his advantages and drawbacks. We also explain how does Pep translate the executable code inside a Java method to an equivalent Self code.