

Towards Dynamic Code Evolution for the HotSpot VM

Thomas Würthinger

Johannes Kepler Universität Linz

Dynamic code evolution is a technique to change the source code of a running program. The current hotswapping mechanism in the Java HotSpot VM only allows changing the bodies of methods at runtime. We are working on an approach that allows arbitrary changes. This talk is about our experiences implementing a prototype in HotSpot that supports adding and deleting of methods and fields as well as performing changes to the class hierarchy. What are the conditions for dynamic code evolution to have a clear semantics and what kind of changes should be forbidden? What are meaningful applications of dynamic code evolution for Java and their requirements? The talk will conclude with ideas for future work to make dynamic code evolution stable and performant.