New garbage collection optimizations of Google Chrome's V8

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Google, Munich

Where: Jakob-Haringer-Str. 2, Room T02

When: Wednesday, May 7, 2014**, 11:00 s.t.**

This talk will give an introduction to Google Chrome's JavaScript virtual machine V8 with focus on its garbage collector and discuss two recent and novel optimizations: (1) Allocation folding, an optimization technique where the optimizing compiler folds multiple memory allocation operations in optimized code together into a single, larger allocation group resulting in lower allocation and write barrier overhead. (2) Pretenuring, an optimization technique where the optimizing compiler based on lifetime feedback generates code that allocates objects directly in the best-fitting generation of a generational garbage collector resulting in lower object evacuation overhead.

Hannes Payer is a software engineer and virtual machine enthusiast at Google working on the JavaScript virtual machine V8. Prior to V8, Hannes worked on other virtual machines like the Dart virtual machine at Google and the Maxine Java virtual machine at Sun Labs. He received a PhD from the University of Salzburg in 2012 working on multicore scalability of concurrent objects.

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