



JavaOne

Visualize Runtime Problems: A New All-in-One Troubleshooting Tool

Tomas Hurka
Jiri Sedlacek
Mandy Chung

Sun Microsystems, Inc.

BOF-9123

Agenda

Tool Preview

Problem & Motivation

VisualVM

Demo

Q & A



DEMO

Tool Preview



Problem & Motivation

- Runtime problems are very hard to diagnose
- Lack of a comprehensive troubleshooting tool
- Existing JDK tools:
 - jps, jconsole, jstack, jmap, jstat, jinfo, jhat
 - Each tool is designed for very specific functionality
 - Multiple tools are involved in diagnosis
 - No performance analysis tool

Typical Steps in Troubleshooting

- Monitor the runtime behavior of an application
 - e.g. monitoring tool
- Identify a problem exists
 - e.g. performance issue
- Isolate source of the problem
 - e.g. memory leak, looping thread, high contention, etc
- Analyze root cause of the problem
 - e.g. jstat, jstack, jhat, a profiler, etc

All-in-One GUI Tool: VisualVM

- A graphical tool from monitoring, performance analysis to troubleshooting
- Production and development use
- Dynamic attach to a running application
- Connect to a VM in a remote machine
- Post-mortem analysis – core file
- Extensible
 - Ability to add new plugins or your own custom one
 - Upgrade to a newer version

Functionality

- Integrate jps, jstack, jstat, jmap, jinfo functionality
 - List of local JVM processes
 - Dynamic attach – no special VM flag is required to startup
 - VM monitoring
 - Heap memory usage, GC statistics, thread count, etc
 - Troubleshooting
 - Thread stack traces, detect deadlock, heap dump, etc
- CPU and memory profiling functionality
 - Dynamic bytecode instrumentation technique
- Heap walker for heap analysis

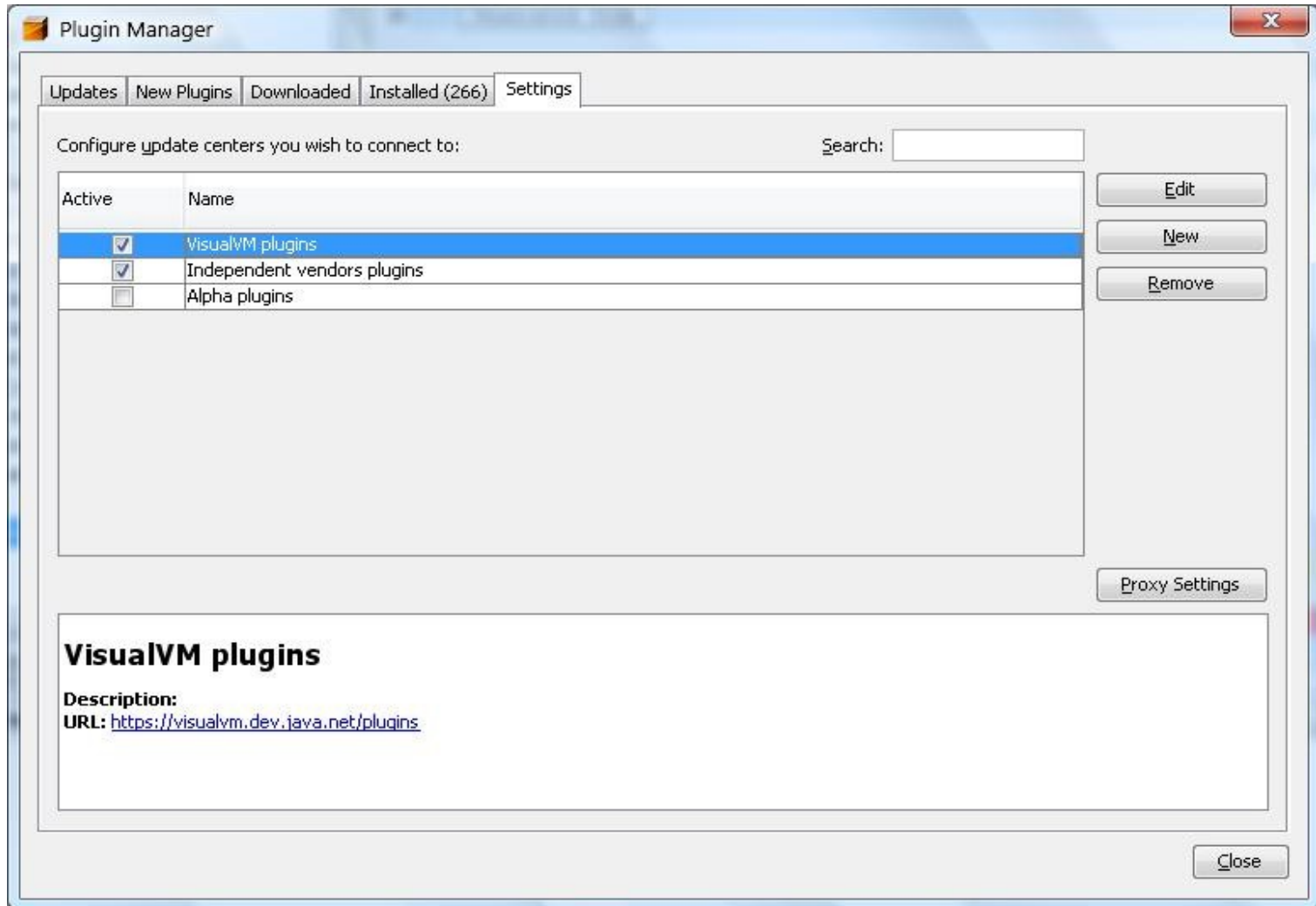


DEMO

VisualVM



Plugin Manager



For More Information

Session/BOF/HOL

- BOF-2816: The Troubleshooting and Diagnostic Utilities in JDK Release 5 and 6
- TS-9555: Quick and Easy Profiling with Integrated Tools
- LAB-1420: Non-intrusive Monitoring Using JMX Technology and JConsole

Booth

- Pod 965: Java SE: Performance & Diagnostics
- Thursday 2:45pm - 4:45pm

Blogs

- <http://weblogs.java.net/blog/mandychung/>
- <http://jroller.com/page/nbprofiler>

Will be a java.net project. Stay tuned!!



Q&A

<code />