

Memory Analyzer

Creation Review

27 February 2008

Project Goal

- Provide General Purpose Tooling to Analyze Java Heap Dumps
- Pluggable
 - heap formats
 - application knowledge
 - heap inspections

Existing Key Features

- Report Memory Leak Suspects
 - Big Objects, Big Threads
- Calculate Retained Sizes
 - Instantly for objects, Fast for arbitrary object sets, Optimized approximation for many sets
- Find who is keeping Objects Alive
 - Path to/from Garbage Collection Roots
 - Immediate Dominators
- Group Objects to Detect Pattern
 - by Class Loader, by arbitrary Attribute Values
- Query Heap with an SQL-like Language
- Works with multi GB heap dumps

Mentors

- Jochen Krause (Innoopract GmbH)
 - Project Lead Eclipse RAP
- Jeff McAffer (Code 9 / Equinox OSGi)
 - Project Lead Equinox OSGi, RCP, Orbit

Initial Committers

- Andreas Buchen (SAP AG) (project lead)
 - Andreas is a senior developer/architect with solid experience in JEE and RCP programming. Andreas has developed the indexing, the query language, the reporting framework and the base UI classes.
- Vedran Lerenc (SAP AG)
 - Vedran is a senior architect in SAP's Java Server development team. He has driven the project from its inception, architected many heap inspections and has implemented the compression algorithms.
- Erwin Margewitsch (SAP AG)
 - Erwin is a software developer and he is responsible for UI components, the release engineering and unit testing.
- Elena Nayashkova (SAP AG)
 - Elena is a software developer with experience in building UI components. Her current focus is enhancement of Memory Analyzer's features and UI design.
- Krum Tsvetkov (SAP AG)
 - Krum is a senior developer/architect with solid Java and Java-troubleshooting experience. Krum has developed many of the basic features - leak detection, retained set/size calculation, dominators-based features, paths computation, collections inspections, etc ...

Community Response

- Response was feeble

BUT

- The Memory Analyzer is a specialist niche tool.
- Developers with memory problems appreciate the tool very much: see testimonials on SAP WIKI
- “Tool of the Week” at Java Posse in June 2007

Interested Parties

- SAP
 - Application Extensions for SAP server
 - Novum: first bigger Eclipse Contribution
- IBM (Trent Gray-Donald)
 - open source tool to support DTFJ formatted dumps
- TPTP (Oliver E Cole)
 - Synergies to be discussed at EclipseCon F2F
- Code 9 / Eclipse OSGi (Jeff McAffer)
 - Example: detect if and why bundles leak after deploy/undeploy cycle

Code Contribution

- SAP offers an initial code contribution as a stable basis for continued development
 - See Key Features
- SAP commits 4 developer resources

Tentative Plan

- April 2008 - Version 0.7
 - Based on Initial Code Contribution
- August 2008 - Version 0.8
 - (More) Eclipse specific extensions: leaking plug-ins
 - Diagnostic Tooling Framework for Java (DTFJ) Support (i.e. IBM VM core dumps)