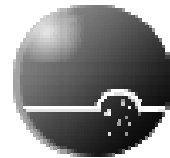




# The Eclipse TPTP Java Profiler Ganymede Edition



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# Eclipse\* TPTP Overview



Eclipse\* Tools Project, Hyades, Dec 2002

Promoted to Eclipse\* project, 2005

**Open-source platform for Automated Software Quality (ASQ) tools including reference implementations for testing, tracing and monitoring software systems**

Addresses the entire test and performance life cycle, from early testing to production application monitoring, including test recording, editing and execution, monitoring, tracing and profiling, and log analysis capabilities

Integration with tools used in the other processes of a software lifecycle under Eclipse\* environment

Reduce the cost and complexity of implementing effective automated software quality control processes

Share data through an OMG-defined trace, log, statistical and test model implemented via the Eclipse\* Modeling Framework (EMF)

Active participants:

IBM, Intel(R), OC Systems

Former participants:

Compuware, SAP, Scapa Technologies

# The “New” Java\* Profiler (JVMTI) vs. JVMPI



“New” Java\* Profiler went GA in Europa

Java\* 5.0 introduced new standards for profiling

Prior to Java\* 5.0 (Java\* 1.4-) the standards and the interfaces to support profiling (JVMPI) were experimental

Java\* J2SE 6 eliminated JVMPI interface

The new standard (JVMTI): an innovative solution to profiling; enables precise control over application parts to profile

Eclipse\* TPTP “new” Java profiler is based on this standard (GA since Europa)

In Eclipse\* TPTP old profiler (JVMPI) still exists

Only for backward compatibility with Java 1.4

Because of JVMPI/JVMTI interface differences there are some differences in behavior between old and new profiler

Eclipse\* TPTP will eventually remove old Java\* profiler

# Eclipse\* TPTP Profiler Updates for Ganymede



## Improve overall usability via assorted fixes

Using feedback from users and consumers

## Reduce usability diffs between JVMPI and JVMTI...

e.g., SSL for secure communications

e.g., Reduce overuse of dynamic attach/detach

## Enhancements

e.g., Better multithread analysis

Improved visualization

Contended lock analysis

Track more thread states (e.g., join points)

e.g., Efficient binary transfer format

e.g., Better Java\* 6 support

# Ganymede Update – Pointing out a few fixes

## Dynamic attach vs pause/resume



### Workload

- Infinite hello world

Start from outside the workbench

Attach, Detach, Reattach, Pause, Resume

```
set TPTP_AC_HOME=C:/utils/eclipse34/eclipse/dropins/eclipse/plugins/org.eclipse.tptp.\
    platform.ac.win_ia32_4.4.1.v200806171132/agent_controller
set JAVA_PROFILER_HOME=C:/utils/eclipse34/eclipse/dropins/eclipse/plugins/org.eclipse.tptp.\
    platform.jvmti.runtime_4.4.100.v200806180919/agent_files/win_ia32
set PATH=%JAVA_PROFILER_HOME%;%TPTP_AC_HOME%\bin;%PATH%
set AGENT=-agentlib:JPIBootLoader=JPIAgent:server=enabled;CGProf
java %AGENT% hello
```

see <http://wiki.eclipse.org/TPTP-standalone-script-TPTP4.4.0.3>

# Ganymede Update – Thread Contention Analysis



## Better multithread analysis

Improved visualization

Contended lock analysis

Track more thread states (e.g., join points)

### **Producer**

- **Processing time**
- **Write packet to buffer**
- **Wait for buffer-empty**

### **Consumer**

- **Wait for buffer full**
- **Read packet from buffer**
- **Processing time**

Lets configure and run a thread profile session

Lets quickly see whats new in the views

See [http://www.eclipse.org/tptp/groups/Architecture/documents/features/hf\\_200320.html](http://www.eclipse.org/tptp/groups/Architecture/documents/features/hf_200320.html)

# TPTP Resources (profiling and beyond)



## Learn and Try

<http://www.eclipse.org/tptp/home/documents/conferences/eclipseCon2008>  
[http://www.eclipse.org/tptp/home/documents/conferences/eclipseCon2008/Eclipsecon08\\_Profiling.htm](http://www.eclipse.org/tptp/home/documents/conferences/eclipseCon2008/Eclipsecon08_Profiling.htm)

## Webs and Wikis

<http://eclipse.org/TPTP>  
<http://wiki.eclipse.org/TPTP>

## Downloads and Updates

<http://www.eclipse.org/tptp/home/downloads>  
<http://www.eclipse.org/tptp/home/downloads/updateManager.php>

## News and Mail

[http://www.eclipse.org/tptp/home/project\\_info/general/mailnews.php](http://www.eclipse.org/tptp/home/project_info/general/mailnews.php)

## Use and Participate

[http://wiki.eclipse.org/TPTP\\_User\\_Experiences\\_Profiling](http://wiki.eclipse.org/TPTP_User_Experiences_Profiling)  
[http://www.eclipse.org/tptp/home/project\\_info/general](http://www.eclipse.org/tptp/home/project_info/general)