Monitoring the Performance of Your Tomcat Application Server Using JavaMelody

Javamelody is an opensource (LGPL) application to monitor Java or Java EE application servers in QA and production environments.

JavaMelody is mainly based on statistics of requests and on evolution charts.

(Extract from the Javamelody home page)

- It allows to improve applications in QA and production
- Give facts about the average response times and number of executions
- Make decisions when trends are bad, before problems become too serious
- Optimize based on the more limiting response times
- Find the root causes of response times
- Verify the real improvement after optimization

It includes summary charts showing the evolution over time of the following indicators:

- Number of executions, mean execution times and percentage of errors of http requests, sql requests, jsp pages or methods of business façades (if EJB3, Spring or Guice)
- Java memory
- Java CPU
- Number of user sessions
- Number of jdbc connections

These charts can be viewed on the current day, week, month, year or custom period.
You can even execute garbage collection to free resources, or view / invalidate http sessions.

Setting up Javamelody on your server

*Step 1: *
Download the javamelody-1.36.0.zip zip file.
Now, unzip, and add copy the files javamelody.jar and jrobin-x.jar into the in the lib directory of Tomcat.

*Step 2: *
Add the following lines in the web.xml file of the conf directory of Tomcat (and not in the WEB-INF/web.xml files of the webapps).

web.xml.snippet

```
<filter>
        <filter-name>monitoring</filter-name>
        <filter-class>net.bull.javamelody.MonitoringFilter</filter-class>
</filter>
<filter-mapping>
        <filter-name>monitoring</filter-name>
        <url-pattern>/*</url-pattern>
</filter-mapping>
<listener>
        <listener-class>net.bull.javamelody.SessionListener</listener-class>
</listener>
```

Once this is done, all you need to do is restart the application. Once the application is up, navigate to http://<host>/<context>/monitoring url to view a whole set of interesting data.

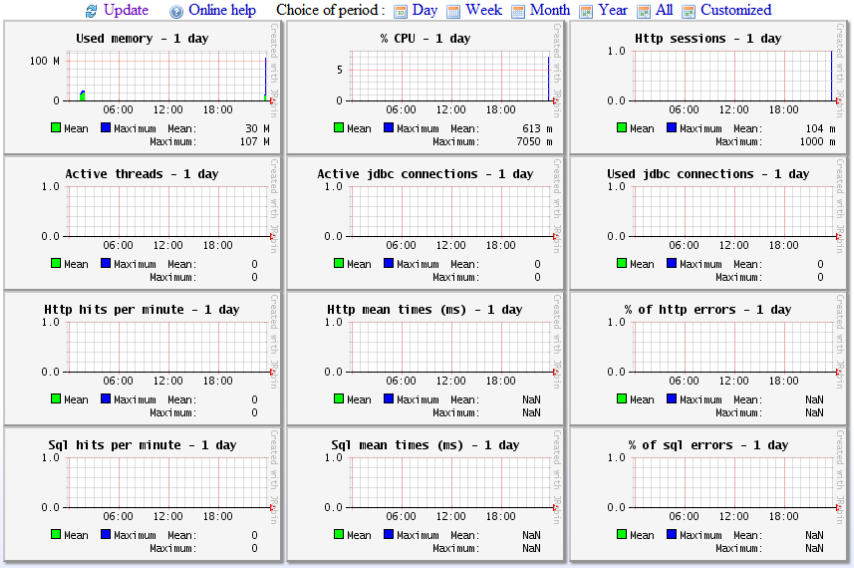
The full instrcutions are available here.

What does the Javamelody monitoring page look like?

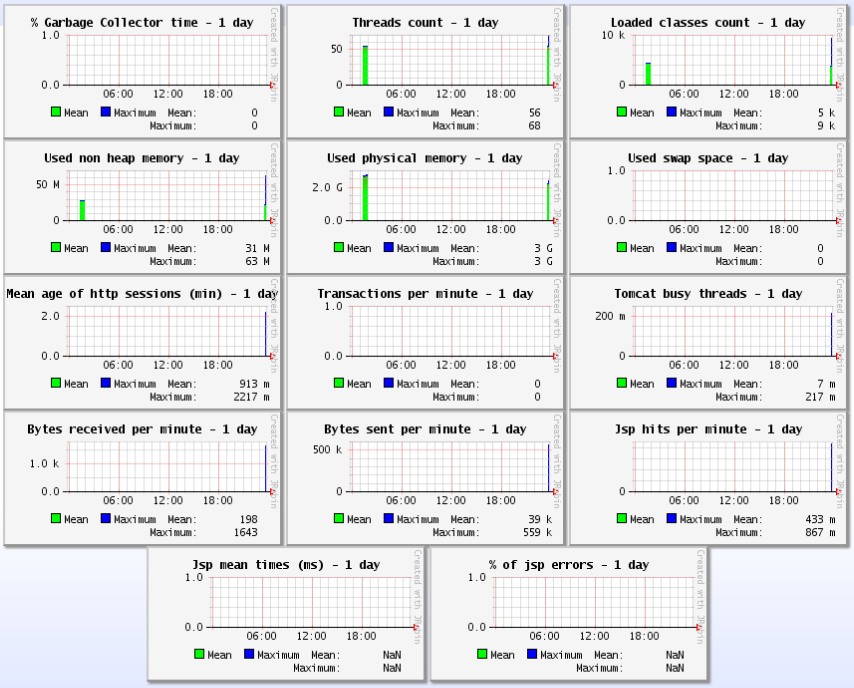
Attached below is a screenshot of my Javamelody monitoring page. Note that this screenshot is of a development environment with no data and just a single user.

Statistics of JavaMelody monitoring taken at 4/14/12 11:43 PM on _HP-PC (Welcome to Tomcat)

Update | Online help | Choice of period : Day | Week | Month | Year | All | Customized



Other charts



Statistics http - 1 day

Request	% of cumulative time	Hits	Mean time (ms)	Max time (ms)	Standard deviation	% of cumulative cpu time	Mean cpu time (ms)	% of system error	Mean size (Kb)
http global	100	1	1	1	0	0	0	0.00	21
http warning	0	0	-1	0	-1	0	-1	0.00	0
http severe	0	0	-1	0	-1	0	-1	0.00	0

0 hits/min on 1 requests Details

Statistics sql - 1 day

None

Statistics jsp - 1 day

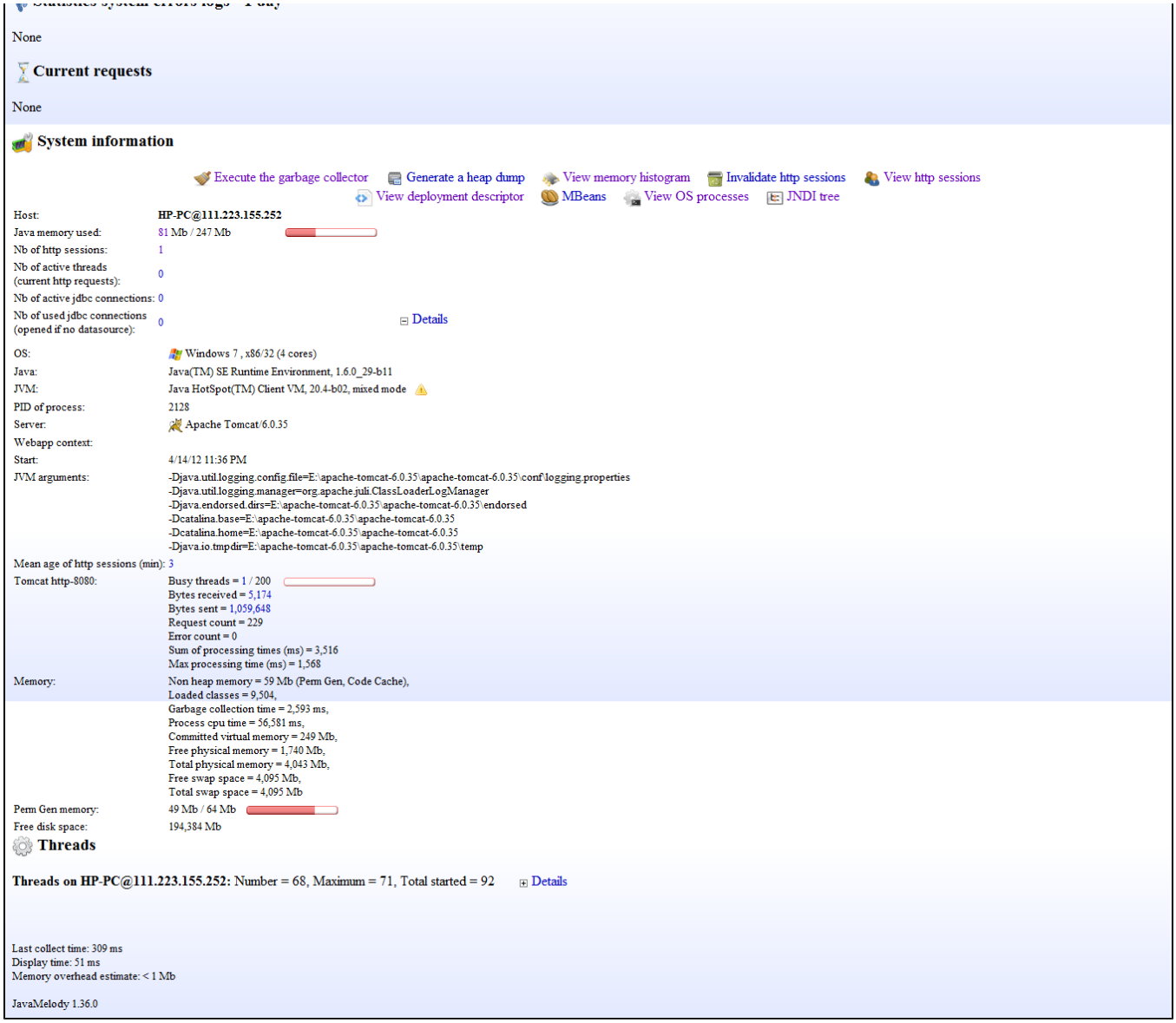
Request	% of cumulative time	Hits	Mean time (ms)	Max time (ms)	Standard deviation	% of cumulative cpu time	Mean cpu time (ms)	% of system error
jsp global	100	109	463	10,360	1,265	100	148	0.00
jsp warning	5	1	2,992	2,992	0	0	0	0.00
jsp severe	39	3	6,615	10,360	3,482	0	0	0.00

16 hits/min on 52 requests Details

Statistics http system errors - 1 day

None

Statistics system errors logs - 1 day



Disclaimer : I was only able to try out Javamelody on a development environment. Therefore, implementers are advised to test out Javamelody on a trial environment before moving it into the production server/s.