

Perfmon4j – Tomcat Configuration Guide

Performance Monitoring API for Java Enterprise Applications

Purpose

This document provides a step by step guide on how to add Perfmon4j performance monitoring to an Apache Tomcat 5.5, 6.x or 7.x server installation.

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Installation

Step 1) Install Perfmon4j java agent

For apache-tomcat 5.5x do the following:

- Copy the perfmon4j.jar and javassist.jar file (included with the perfmon4j distribution) into the “apache-tomcat/common/endorsed” folder.
- Copy the following jar files (included with the perfmon4j distribution) into your “apache-tomcat/server/lib” folder: perfmon4j-servlet.jar and perfmon4j-tomcat55.jar.
- Set the CATALINA_OPTS environment variable to configure the perfmon4j java agent. Set CATALINA_OPTS to the following value: (!! **Important!!** – please note the “-“ before the “**P**” in “-f../conf/perfmonconfig.xml”)

```
-javaagent:../common/endorsed/perfmon4j.jar=-f../conf/perfmonconfig.xml
```

For apache-tomcat 6.x and 7.x do the following:

- Create an “apache-tomcat/lib/endorsed” folder.
- Copy the perfmon4j.jar and javassist.jar file (included with the perfmon4j distribution) into the newly created “apache-tomcat/lib/endorsed” folder.
- Copy the following jar file (included with the perfmon4j distribution) into your “apache-tomcat/lib” folder: perfmon4j-servlet.jar.
- For **apache-tomcat 6.x** - Copy the following jar file (included with the perfmon4j distribution) into your “apache-tomcat/lib” folder: perfmon4j-tomcat55.jar.
- For **apache-tomcat 7.x** - Copy the following jar file (included with the perfmon4j distribution) into your “apache-tomcat/lib” folder: perfmon4j-tomcat7.jar.
- (**For Windows ONLY**) Set the CATALINA_OPTS environment variable to configure the perfmon4j java agent. Set CATALINA_OPTS to the following value: (!! **Important!!** – please note the “-“ before the “**P**” in “-

f.\bin\perfmonconfig.xml”)

```
-Djava.endorsed.dirs=../lib/endorsed -javaagent:../lib/endorsed/perfmon4j.jar=-f../conf/perfmonconfig.xml
```

- (For Linux ONLY) Set the CATALINA_OPTS and JAVA_ENDORSED_DIRS environment variable to configure the perfmon4j java agent. Set CATALINA_OPTS to the following value: (!! Important!! – please note the “-“ before the “f” in “-f.\bin\perfmonconfig.xml”)

```
CATALINA_OPTS=-javaagent:../lib/endorsed/perfmon4j.jar=-f../conf/perfmonconfig.xml
JAVA_ENDORSED_DIRS=../lib/endorsed
```

Step 2) Configure log4j logging to enable perfmon4j output.

- Add the following lines to the apache-tomcat/conf/logging.properties file:

```
#####
# Facility specific properties.
# Provides extra control for each logger.
#####

org.perfmon4j.level=INFO
org.perfmon4j.handlers=java.util.logging.ConsoleHandler,1catalina.org.apache.juli.FileHandler
```

Step 3) Install PerfMonValve to enable monitoring of web request.

- Edit “apache-tomcat/conf/server.xml”
- For **apache-tomcat 5.5x and 6x** do the following: Find the <Engine name="Catalina" defaultHost="localhost"> section and add the following line to the section: <Valve className="org.perfmon4j.extras.tomcat55.PerfMonValve"/>
- For **apache-tomcat 7x** do the following: Find the <Engine name="Catalina" defaultHost="localhost"> section and add the following line to the section: <Valve className="org.perfmon4j.extras.tomcat7.PerfMonValve"/>

Step 4) Create perfmon4j configuration file

- Copy the file perfmonconfig.xml included with the Perfmon4j distribution (in the “perfmon4j/doc” folder) into the “apache-tomcat/conf” folder.
- Note this sample configuration will output data every minute for web request and various system metrics (Garbage collection, Thread pools, etc)
- To configure the frequency of output simply edit the perfmonconfig.xml file and change all occurrences of “1 minute” to an alternate duration. Perfmon4j accepts various time durations - i.e. (“20 minutes”, “1 hour”, “30 seconds”)
- Perfmon4j will monitor the perfmonconfig.xml file for change every 60 seconds. If a change is found it will be reloaded.
- For **apache-tomcat 7x** update all references in the perfmonconfig.xml file of “tomcat55” to “tomcat7”.

Step 5) Test your installation

- Start apache-tomcat (using “apache-tomcat/bin/catalina run”) within 2-3 minutes perfmon4j logging information, similar to the example below, should appear on the console and in the server log.

Example output:

```

2009-09-09 11:16:49,583 INFO [org.perfmon4j.TextAppender]
*****
WebRequest
11:15:49:533 -> 11:16:49:536
Max Active Threads. 0
Throughput..... 0.00 per minute
Average Duration... 0.00
Median Duration.... NA
> 2 seconds..... 0.00%
> 5 seconds..... 0.00%
> 10 seconds..... 0.00%
Standard Deviation. 0.00
Max Duration..... 0
Min Duration..... 0
Total Hits..... 0
Total Completions.. 0
Lifetime (2009-09-09 11:15:49):
Max Active Threads. 0
Max Throughput..... 0.00 (2009-09-09 11:15:49 -> 2009-09-09 11:16:49)
Average Duration... 0.00
Standard Deviation. 0.00
Max Duration..... 0
Min Duration..... 0
*****

```

For more information

- The Perfmon4j-UserGuide contains an overview of the features of Perfmon4j
- Sample configurations can be found in the Perfmon4j-ConfigSamples document.
- Visit the perfmon4j web site for links for brief videos on perfmon4j.

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