

性能测试

--性能测试工具JMeter使用—监听器的使用

内容回顾

■ 逻辑控制器的使用

- **If Controller**
- **ForEach Controller**
- **Loop Controller**
- **Once Only Controller**
- **Runtime Controller**

内容回顾

- 主要组件类型及作用
- 组件执行顺序
- 组件作用域

目录

- 监听器概述
- 常用监听器

监听器概述

■ 什么是监听器

- 用来监听及显示JMeter取样器测试结果、能够以树、表、图及文件形式显示测试结果
- 测试结果文件格式：CSV、XML

常用监听器

- **View Results Tree**
- **Aggregate Report**
- **View Results in Table**
- **Graph Results**
- **Summary Report**
- **Response Time Graph**
- **查看图形化结果**

常用监听器—View Results Tree

- 添加方式：在需要被监听的元件上右键——Add——Listener——View Results Tree
- 结果解释
 - Latency:事务延时，如：HTTP请求发出到接收到首包的时间（首包最大8K）

常用监听器—View Results Tree

■ 使用注意事项：

- 在负载测试期间不得使用查看结果树，因为它消耗了大量资源（内存和CPU）。 仅用于功能测试或测试计划调试和验证期间

常用监听器—Aggregate Report

■ Aggregate Report（聚合报告）

- 该监听器统计每个请求的响应信息并提供请求数，平均值，最大，最小值，中位数、90%、95%用户响应时间、错误率，吞吐量(以请求数/秒为单位)和以kb/秒为单位的吞吐量

常用监听器—Aggregate Report

- **Label**: 每个 JMeter 的 element (例如 HTTP Request) 都有一个 Name 属性, 这里显示的就是 Name 属性的值
- **Samples**: 本次测试中一共发出了多少个请求, 如果模拟10个用户, 每个用户迭代10次, 那么这里显示100
- **Average**: 平均响应时间, 默认情况下是单个 Request 的平均响应时间, 当使用了 Transaction Controller 时, 也可以以 Transaction 为单位显示平均响应时间

常用监听器—Aggregate Report

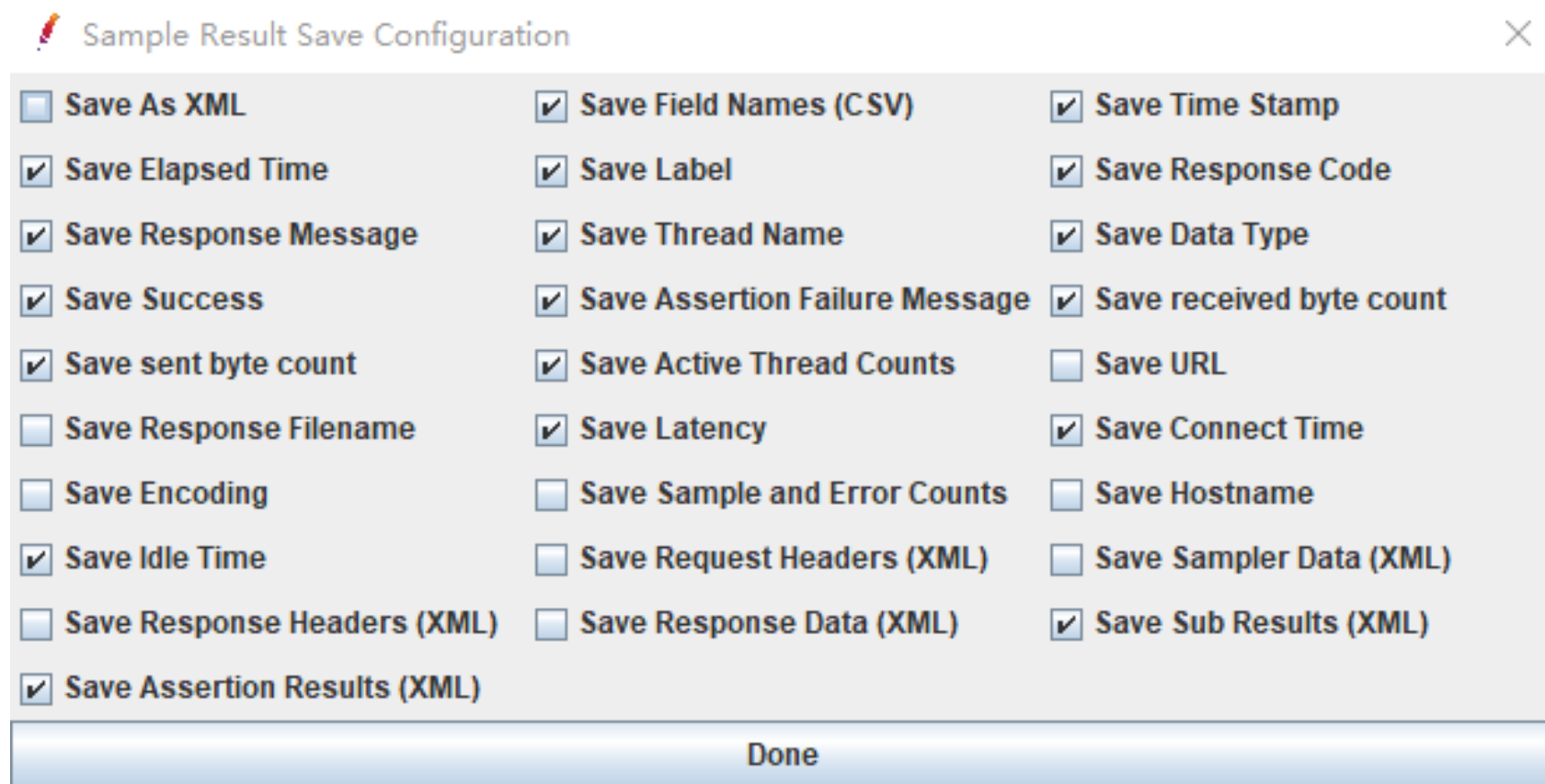
- **Median** – 中位数，表示响应时间不大于该时间值的请求样本数，也就是 50% 用户的响应时间
- **90% line** – 表示90%的请求在该耗时内完成
- **Min** – 针对同一请求取样器，请求样本的最小响应时间
- **Max** – 针对同一请求取样器，请求样本的最大响应时间

常用监听器—Aggregate Report

- **Error%** – 出现错误的请求样本的百分比，本次测试中出现错误的请求的数量/请求的总数
- **Throughput** – 吞吐量，默认情况下表示每秒完成的请求数（Request per Second），当使用了 Transaction Controller 时，也可以表示类似 LoadRunner 的 Transaction per Second 数，反应了服务器的处理能力
- **Received KB/sec** – 每秒从服务器端接收到的数据量，相当于 LoadRunner 中的 Throughput/Sec

常用监听器—Aggregate Report

■ 单击Configure按钮，可以配置结果保存各种选项



Sample Result Save Configuration

<input type="checkbox"/> Save As XML	<input checked="" type="checkbox"/> Save Field Names (CSV)	<input checked="" type="checkbox"/> Save Time Stamp
<input checked="" type="checkbox"/> Save Elapsed Time	<input checked="" type="checkbox"/> Save Label	<input checked="" type="checkbox"/> Save Response Code
<input checked="" type="checkbox"/> Save Response Message	<input checked="" type="checkbox"/> Save Thread Name	<input checked="" type="checkbox"/> Save Data Type
<input checked="" type="checkbox"/> Save Success	<input checked="" type="checkbox"/> Save Assertion Failure Message	<input checked="" type="checkbox"/> Save received byte count
<input checked="" type="checkbox"/> Save sent byte count	<input checked="" type="checkbox"/> Save Active Thread Counts	<input type="checkbox"/> Save URL
<input type="checkbox"/> Save Response Filename	<input checked="" type="checkbox"/> Save Latency	<input checked="" type="checkbox"/> Save Connect Time
<input type="checkbox"/> Save Encoding	<input type="checkbox"/> Save Sample and Error Counts	<input type="checkbox"/> Save Hostname
<input checked="" type="checkbox"/> Save Idle Time	<input type="checkbox"/> Save Request Headers (XML)	<input type="checkbox"/> Save Sampler Data (XML)
<input type="checkbox"/> Save Response Headers (XML)	<input type="checkbox"/> Save Response Data (XML)	<input checked="" type="checkbox"/> Save Sub Results (XML)
<input checked="" type="checkbox"/> Save Assertion Results (XML)		

Done

常用监听器— View Results in Table

View Results in Table（用表格查看结果）

View Results in Table

Name: View Results in Table

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only: ☐ Errors ☐ Successes

Configure

Samp...	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes	Latency	Connect Time(ms)
1	14:25:44.995	Thread Group 1-1	index	67	✓	13796	306	65	2
2	14:25:45.070	Thread Group 1-1	login	58	✓	1520	706	58	0
3	14:25:45.134	Thread Group 1-1	http://localhost/...	47	✓	15784	648	45	0
4	14:25:44.994	Thread Group 1-1	login	172	✓	31100	1660	168	2
5	14:25:45.216	Thread Group 1-1	http://localhost/...	54	✓	49126	682	52	0
6	14:25:45.276	Thread Group 1-1	http://localhost/...	71	✓	31193	727	67	0
7	14:25:45.352	Thread Group 1-1	postmessage	116	✓	28503	717	113	0
8	14:25:45.189	Thread Group 1-1	post_message	241	✓	108822	2126	232	0
9	14:25:46.010	Thread Group 1-2	index	53	✓	13798	306	52	2
10	14:25:46.069	Thread Group 1-2	login	51	✓	1512	706	51	0
11	14:25:46.125	Thread Group 1-2	http://localhost/...	43	✓	15797	640	41	0
12	14:25:46.008	Thread Group 1-2	login	147	✓	31107	1652	144	2
13	14:25:46.193	Thread Group 1-2	http://localhost/...	46	✓	49126	674	44	0
14	14:25:46.244	Thread Group 1-2	http://localhost/...	53	✓	31193	719	51	0
15	14:25:46.301	Thread Group 1-2	postmessage	111	✓	28503	709	109	0
16	14:25:46.173	Thread Group 1-2	post_message	210	✓	108822	2102	204	0

常用监听器—Graph Results

Graph Results

Name: Graph Results

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only:

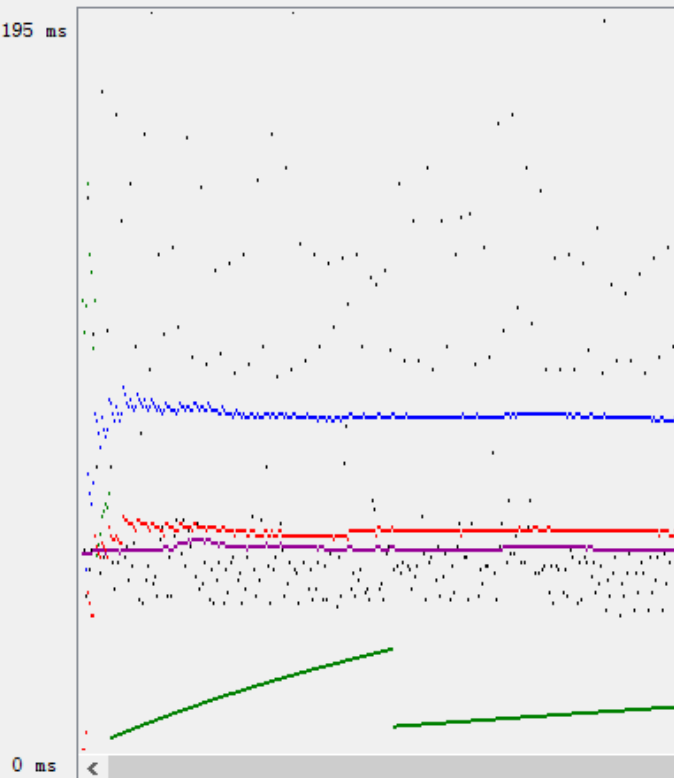
☐ Errors

☐ Successes

Configure

Graphs to Display ☒ Data ☒ Average ☒ Median ☒ Deviation ☒ Throughput

195 ms



0 ms

No of Samples 336

Deviation 58

Latest Sample 210

Throughput 112.888/minute

Average 88

Median 53

常用监听器—Summary Report

- **Summary Report(概要报告)**: 提供了最简要的测试结果信息，同时可以通过【**Configure**】配置将相应的信息保存至指定的文件中（支持xml、csv格式的文件）

常用监听器—Summary Report

transactiondemoa.jmx (E:\performance\demo\newdemo\transactiondemoa.jmx) - Apache JMeter (5.0 r1840935)

File Edit Search Run Options Help

Test Plan
Thread Group
Transaction Cont
one
two
Summary Report

Summary Report

Name: Summary Report

Comments:

Write results to file / Read from file

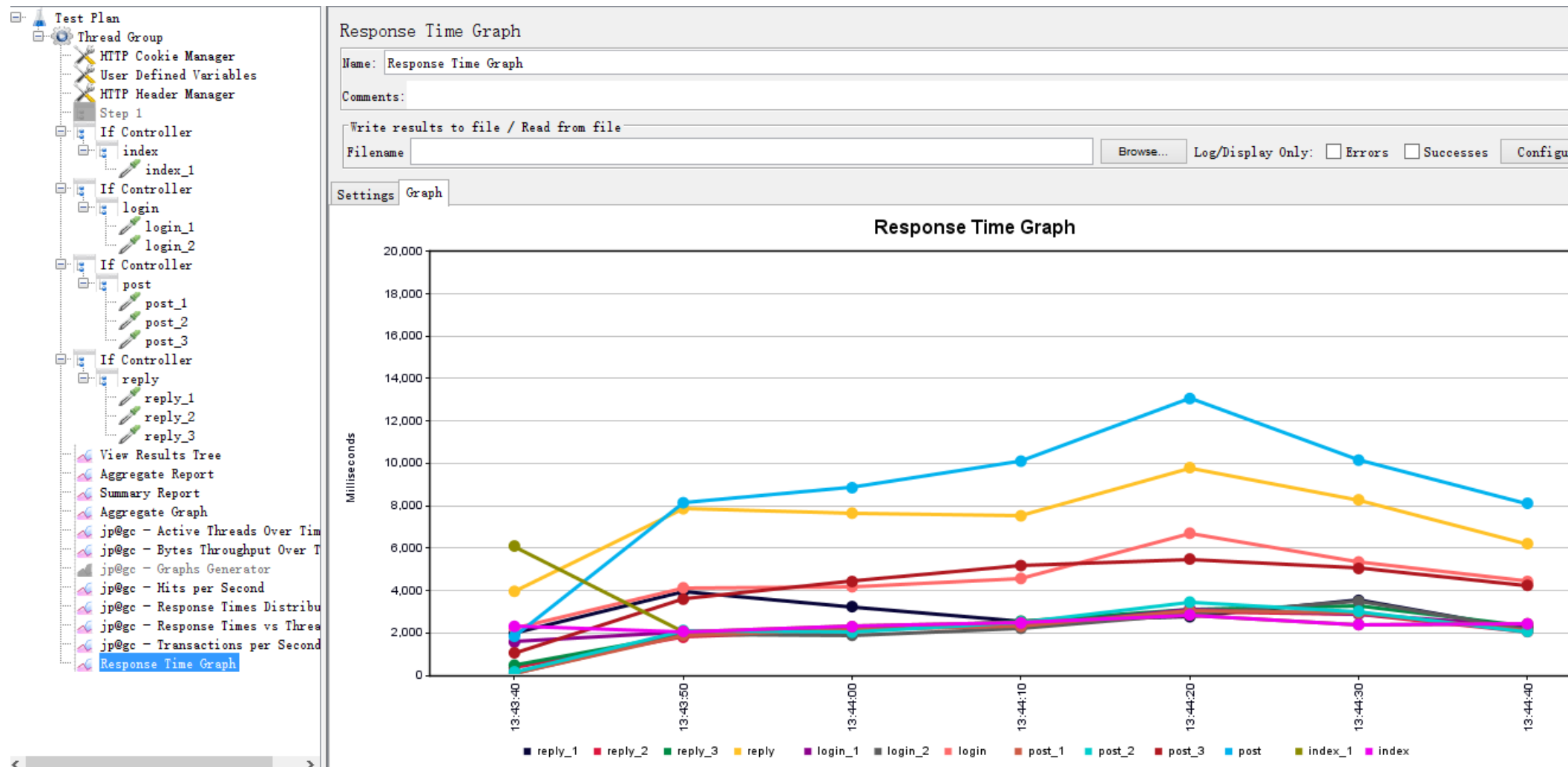
Filename Browse... Log/Display Only: ☐ Errors ☐ Successes

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
one	1	147	147	147	0.00	0.00%	6.8/sec	18.47	0.75	2781.0
two	1	3300	3300	3300	0.00	0.00%	18.2/min	204.90	0.03	692402.0
Transaction Con...	1	3447	3447	3447	0.00	0.00%	17.4/min	196.78	0.06	695183.0
TOTAL	3	2298	147	3447	1522.17	0.00%	52.2/min	393.56	0.13	463455.3

取样器名称 事务数量 请求事务平均响应时间 响应时间的标准方差

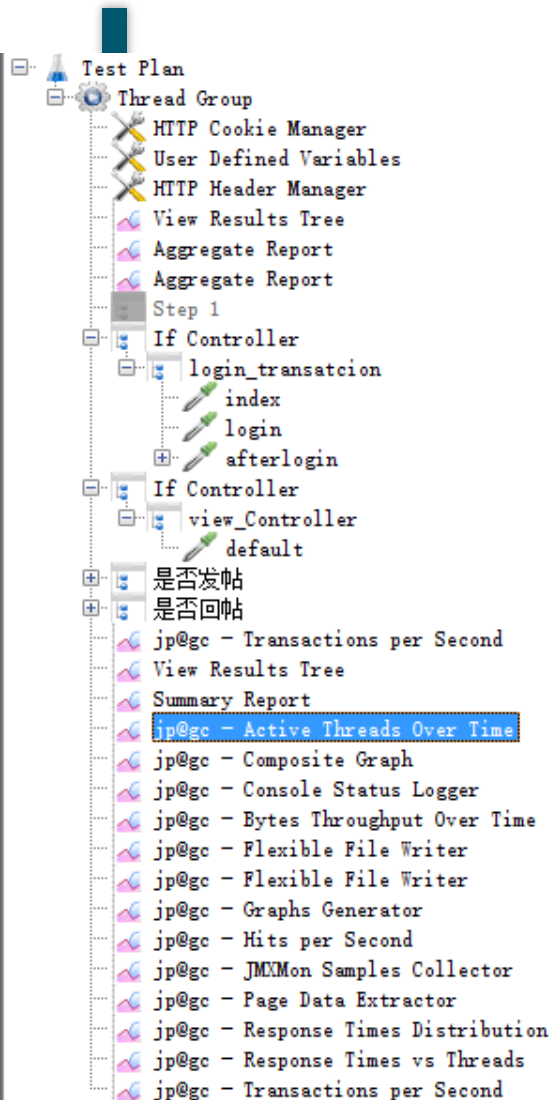
常用监听器—Response Time Graph

Response Time Graph（响应时间图）



查看图形化结果

- 安装插件，将如下jar包放入lib/ext目录中，重启JMeter
 - **JMeterPlugins-Extras.jar**
 - **JMeterPlugins-Standard.jar**
 - **CMDRunner.jar**



jp@gc - Active Threads Over Time

Name: jp@gc - Active Threads Over Time

Comments:

[Help on this plugin](#)

v1.2.0

Write results to file / Read from file

Filename

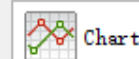
Browse...

Log/Display Only:

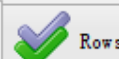
☐ Errors

☐ Successes

Configure



Chart

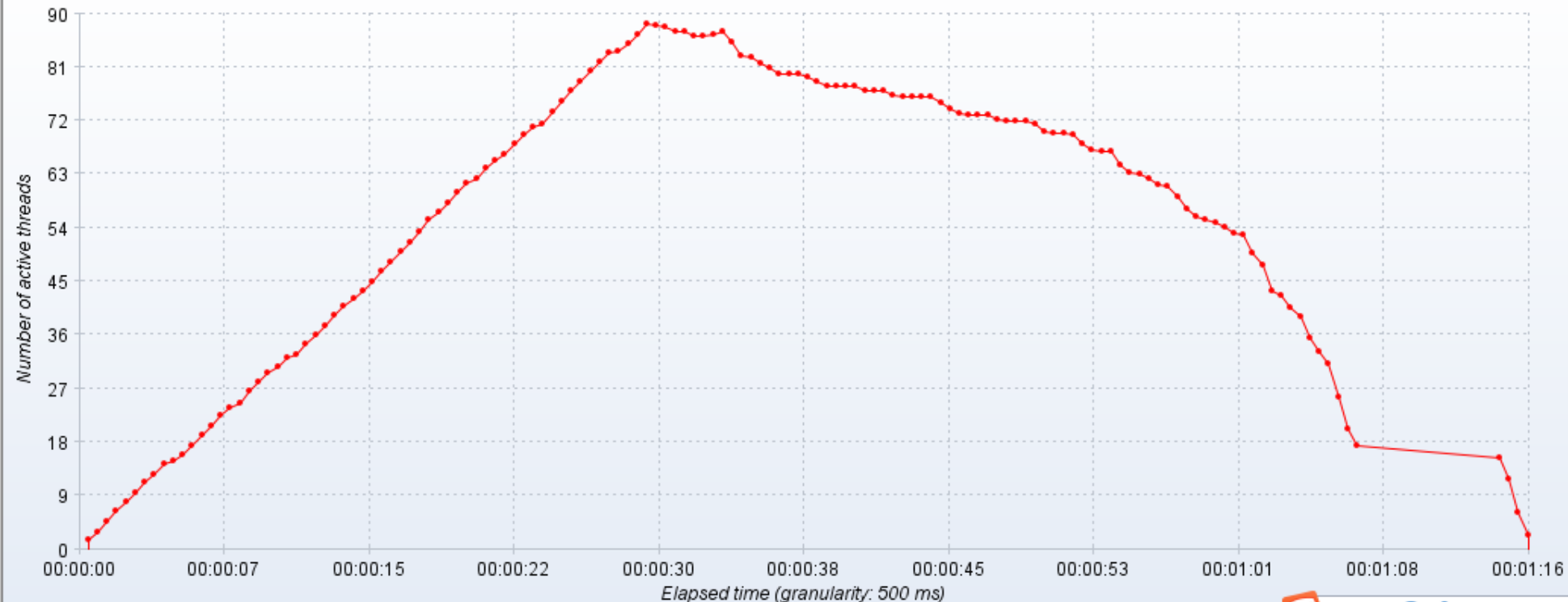


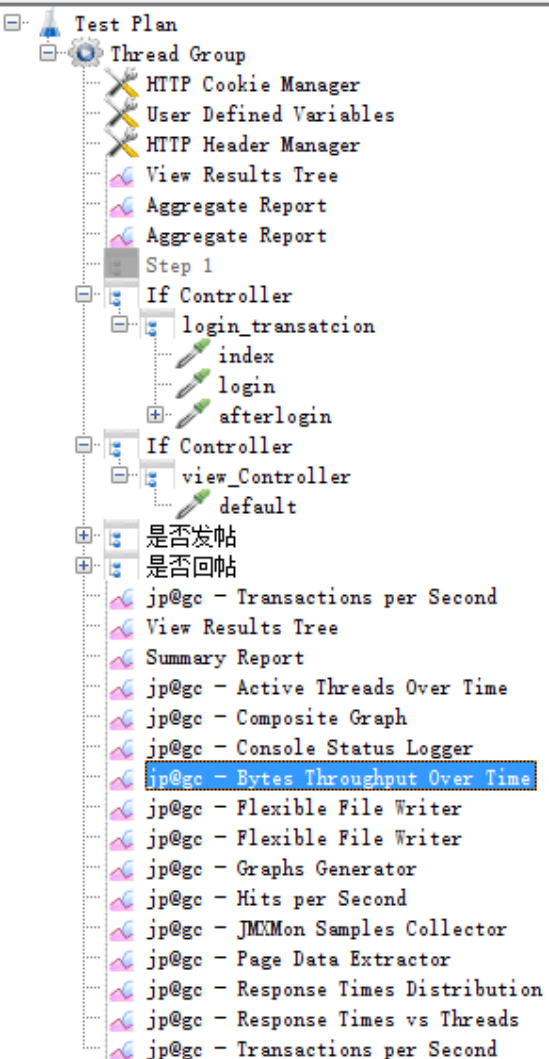
Rows



Settings

Thread Group





jp@gc - Bytes Throughput Over Time

Name: jp@gc - Bytes Throughput Over Time

Comments:

[Help on this plugin](#)

v1.2.0

Write results to file / Read from file

Filename

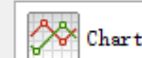
Browse...

Log/Display Only:

☐ Errors

☐ Successes

Configure



Chart

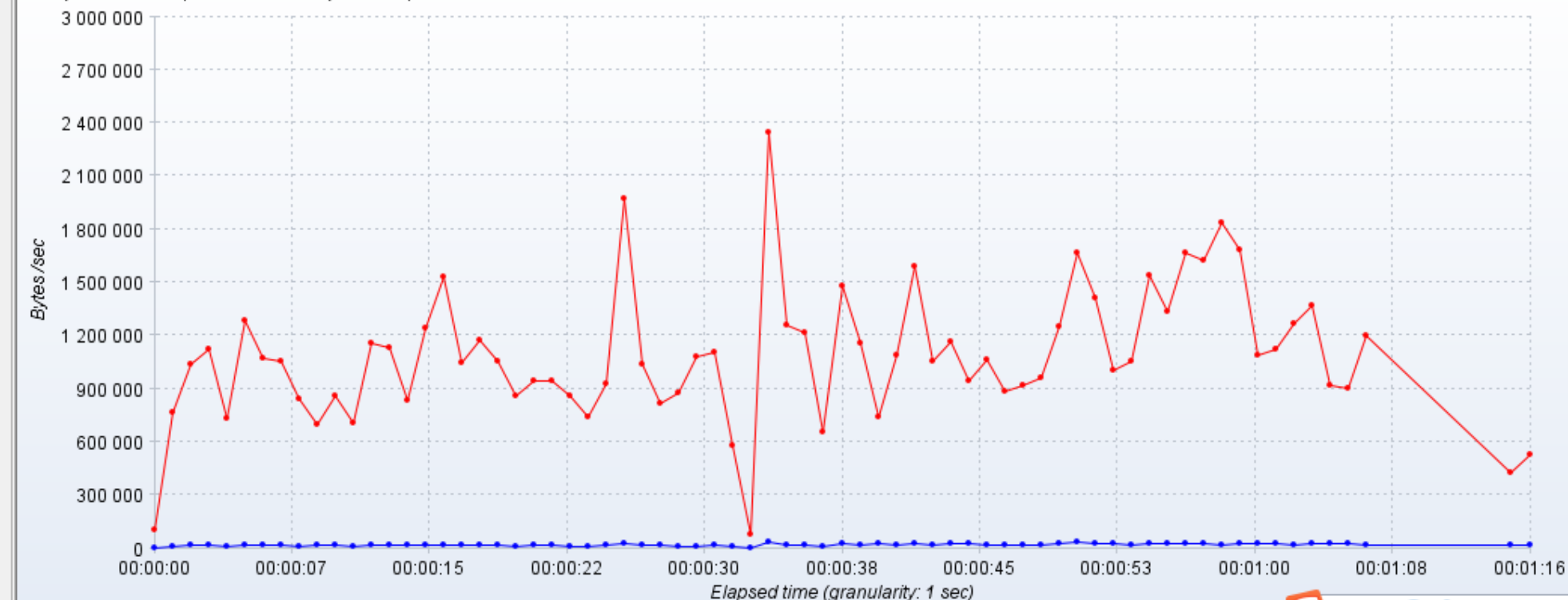


Rows



Settings

Bytes Received per Second Bytes Sent per Second



- Test Plan
 - Thread Group
 - HTTP Cookie Manager
 - User Defined Variables
 - HTTP Header Manager
 - View Results Tree
 - Aggregate Report
 - Aggregate Report
 - Step 1
 - If Controller
 - login_transacion
 - index
 - login
 - afterlogin
 - If Controller
 - view_Controller
 - default
 - 是否发帖
 - 是否回帖
 - jp@gc - Transactions per Second
 - View Results Tree
 - Summary Report
 - jp@gc - Active Threads Over Time
 - jp@gc - Composite Graph
 - jp@gc - Console Status Logger
 - jp@gc - Bytes Throughput Over Time
 - jp@gc - Flexible File Writer
 - jp@gc - Flexible File Writer
 - jp@gc - Graphs Generator
 - jp@gc - Hits per Second
 - jp@gc - JMXMon Samples Collector
 - jp@gc - Page Data Extractor
 - jp@gc - Response Times Distribution
 - jp@gc - Response Times vs Threads
 - jp@gc - Transactions per Second

jp@gc - Hits per Second

Name: jp@gc - Hits per Second

Comments:

[Help on this plugin](#)

v1.2.0

Write results to file / Read from file

Filename

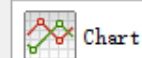
Browse...

Log/Display Only:

☐ Errors

☐ Successes

Configure



Chart



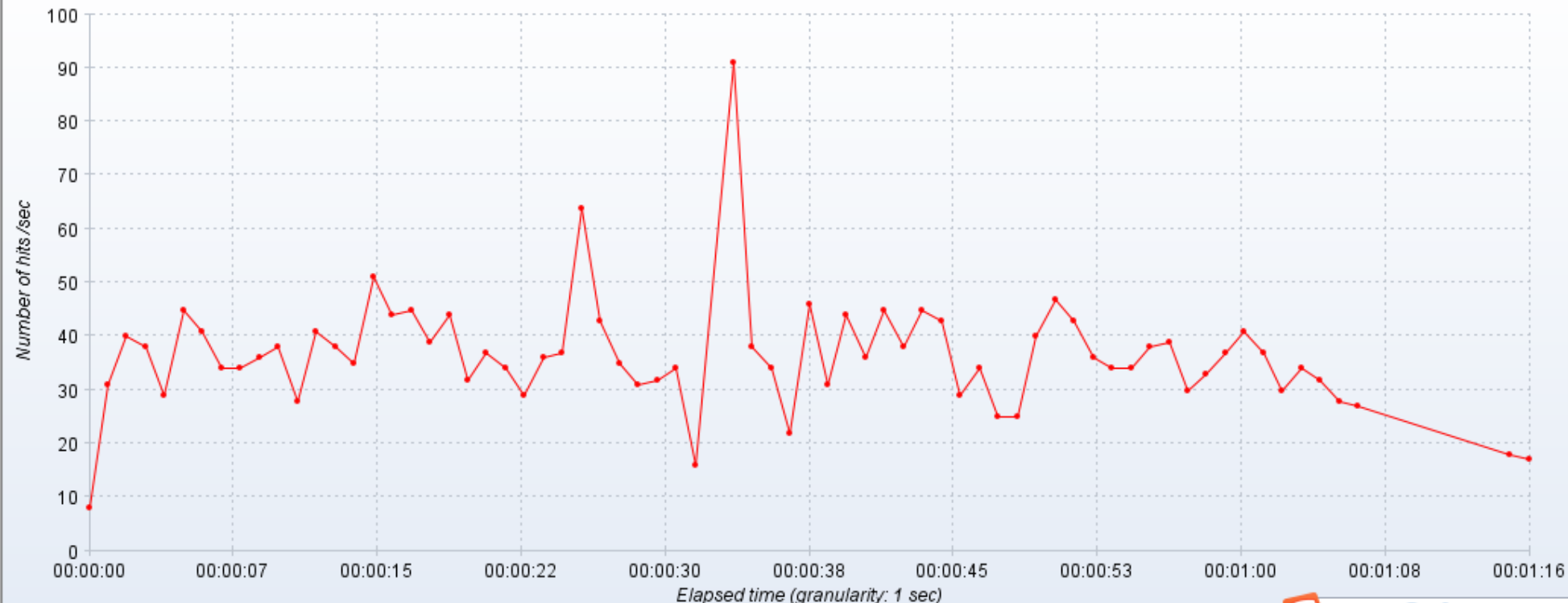
Rows



Settings

Server Hits per Second

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- Test Plan
 - Thread Group
 - HTTP Cookie Manager
 - User Defined Variables
 - HTTP Header Manager
 - View Results Tree
 - Aggregate Report
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 - Step 1
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 - login_transatcion
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 - jp@gc - Composite Graph
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 - jp@gc - Page Data Extractor
 - jp@gc - Response Times Distribution
 - jp@gc - Response Times vs Threads
 - jp@gc - Transactions per Second

jp@gc - Response Times Distribution

Name: jp@gc - Response Times Distribution

Comments:

[Help on this plugin](#)

Write results to file / Read from file

Filename

Browse...

Log/Display Only: ☐ Errors ☐ Successes



Chart

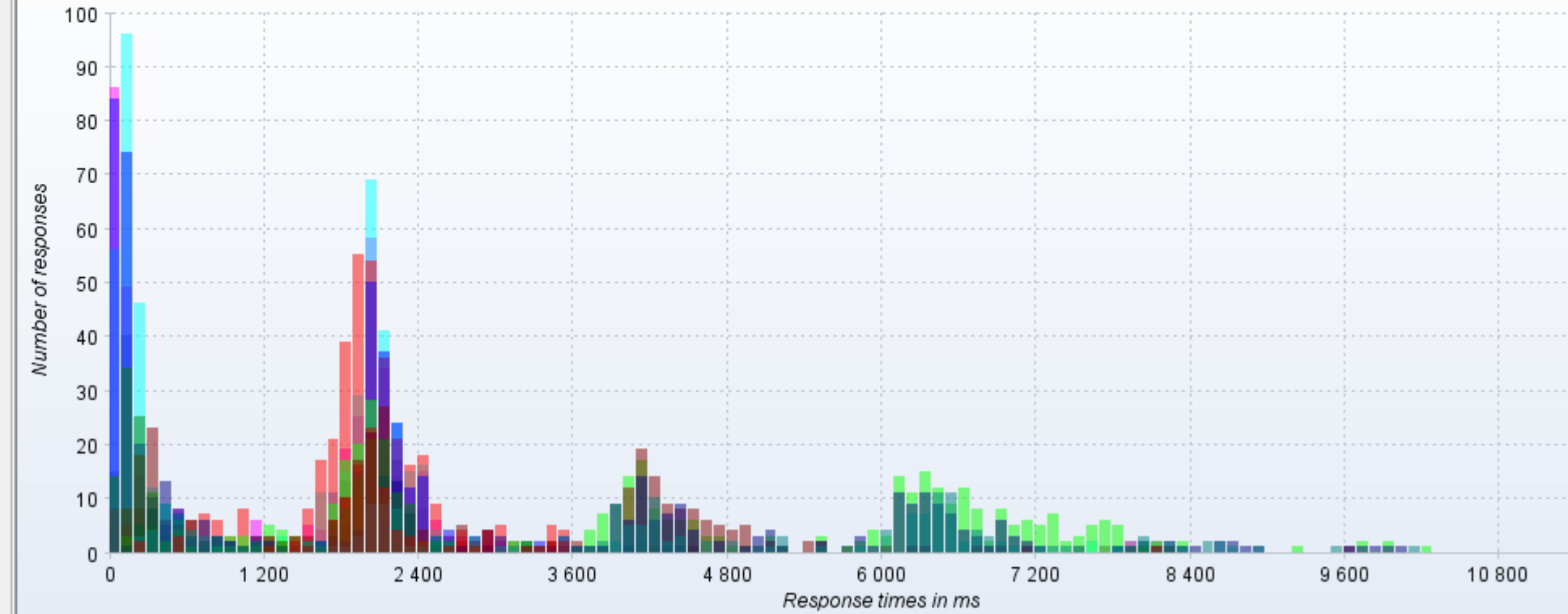


Rows



Settings

afterlogin before_reply default http://localhost/dz/forum.php index login login_transatcion postmessage postmessage_Transaction reply
reply_Transaction view_Controller



Test Plan

- Thread Group
 - HTTP Cookie Manager
 - User Defined Variables
 - HTTP Header Manager
 - View Results Tree
 - Aggregate Report
 - Aggregate Report
 - Step 1
 - If Controller
 - login_transatcion
 - index
 - login
 - afterlogin
 - If Controller
 - view_Controller
 - default
 - 是否发帖
 - 是否回帖
 - jp@gc - Transactions per Second
 - View Results Tree
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 - jp@gc - Active Threads Over Time
 - jp@gc - Composite Graph
 - jp@gc - Console Status Logger
 - jp@gc - Bytes Throughput Over Time
 - jp@gc - Flexible File Writer
 - jp@gc - Flexible File Writer
 - jp@gc - Graphs Generator
 - jp@gc - Hits per Second
 - jp@gc - JMXMon Samples Collector
 - jp@gc - Page Data Extractor
 - jp@gc - Response Times Distribution
 - jp@gc - Response Times vs Threads
 - jp@gc - Transactions per Second

jp@gc - Response Times vs Threads

Name: jp@gc - Response Times vs Threads

Comments:

[Help on this plugin](#)

v1.2.0

Write results to file / Read from file

Filename

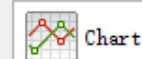
Browse...

Log/Display Only:

☐ Errors

☐ Successes

Configure



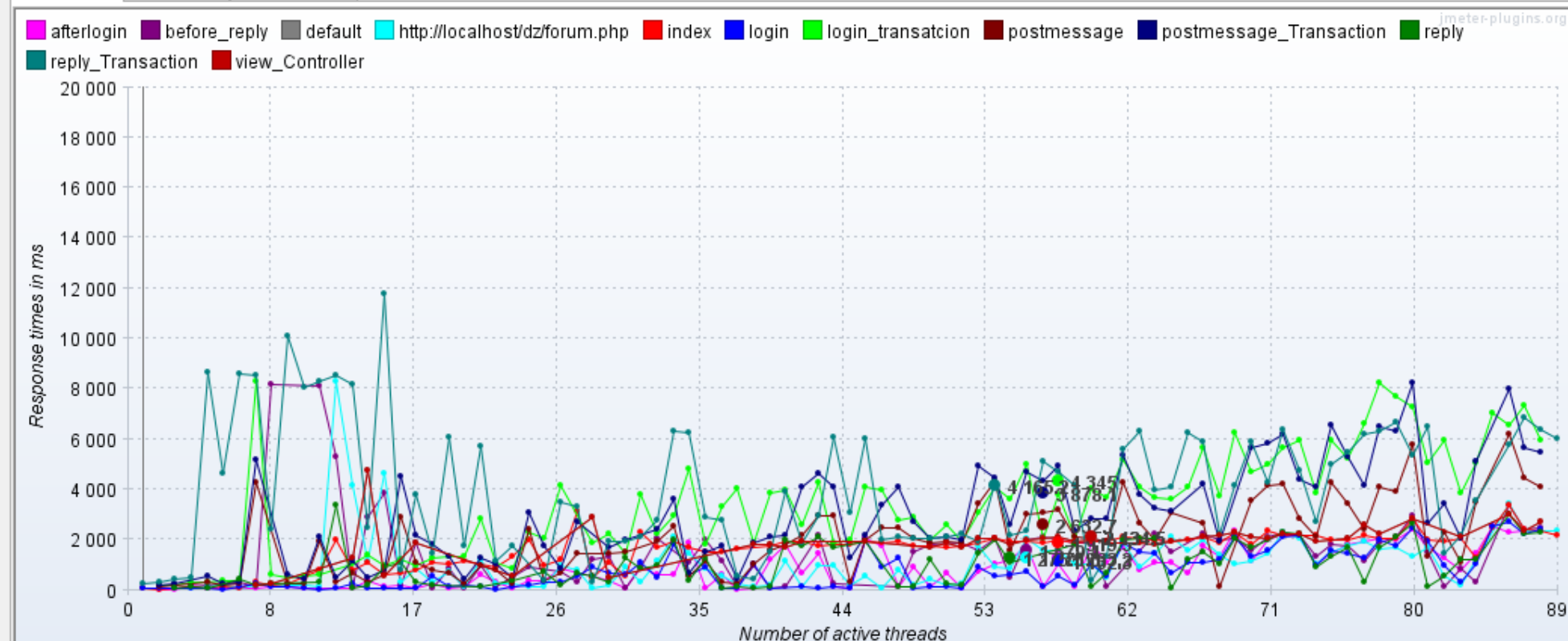
Chart

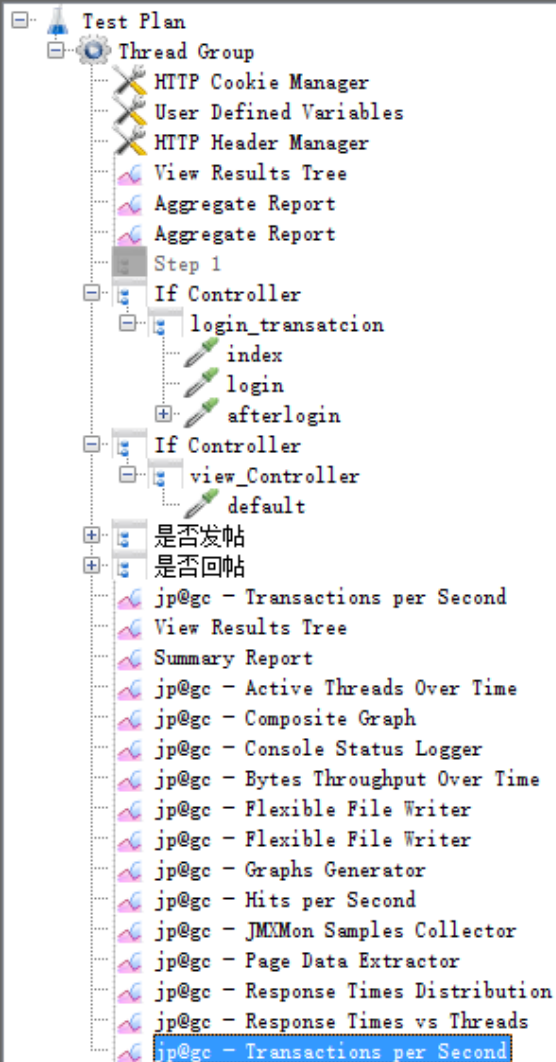


Rows



Settings





jp@gc - Transactions per Second

Name: jp@gc - Transactions per Second

Comments:

[Help on this plugin](#)

v1.2.0

Write results to file / Read from file

Filename

Browse...

Log/Display Only:

☐ Errors

☐ Successes

Configure



Chart



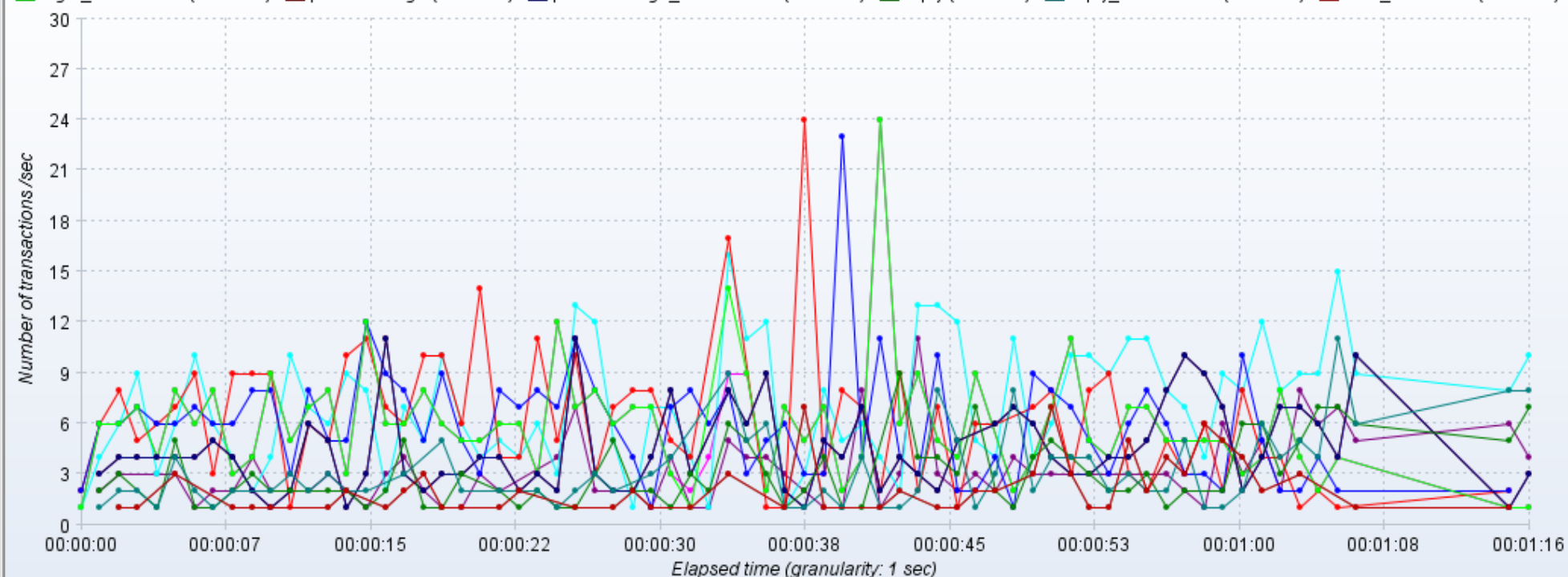
Rows



Settings

afterlogin (success) before_reply (success) default (success) http://localhost/dz/forum.php (success) index (success) login (success)
login_transactcion (success) postmessage (success) postmessage_Transaction (success) reply (success) reply_Transaction (success) view_Controller (success)

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内容总结

■ 监听器概述

■ 常用监听器

- **View Results Tree**
- **Aggregate Report**
- **View Results in Table**
- **Graph Results**
- **Summary Report**
- **Response Time Graph**
- 查看图形化结果



Question
