**JMETER 压力测试报告**

1. **压力测试概要**

测试环境：(Red Hat 4.8.5-4)

测试时间：2017-12-5 ~ 2017-12-6

服务端配置：cpu MHz:2600四核，8G内存

测试工具：jmeter-3.0

1. **测试说明**
2. 名词定义（时间单位ms）

Sample:本次测试场景共运行多少线程；

Average:平均响应时间；

Median:统计意义上的响应时间中值；

90% line:所有线程中90%的线程响应时间都小于xx的值;

Min:响应最小时间；

Max:响应最大时间；

Error:出错率；

Thougtput: 吞吐量；

kb-sec: 以流量做衡量的吞吐量;

1. 安装启动JMeter，分别对以上页面进行压力测试

分别测试20，50,100,200,500个线程，来模拟这么多用户并发访问系统

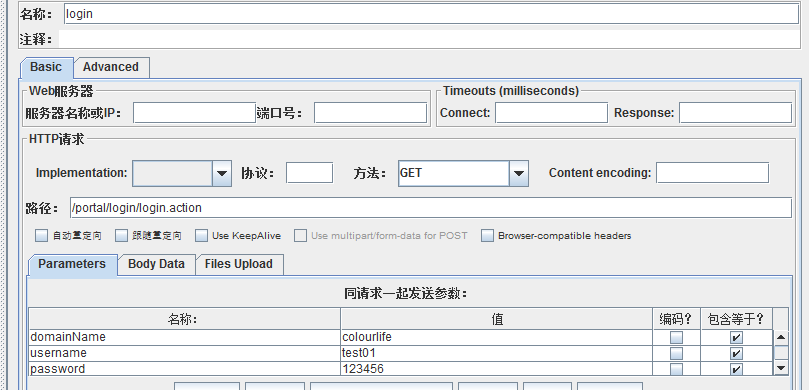
1. 测试内容：

根据与相关人员的沟通和交流，本次测试内容重点为1、发起项目任务单审批流程。2、流程中心待办事项查询。

1. 项目任务单列表查询

登录接口：

http://172.16.13.91:8080/portal/login/login.action



（1）测试场景1：发起项目任务单审批流程

<http://172.16.13.91:8080/portal/dynaform/activity/execute.action?_activityid=11e7-d8d2-c3d77b4e-bedb-ff83e66ce862>

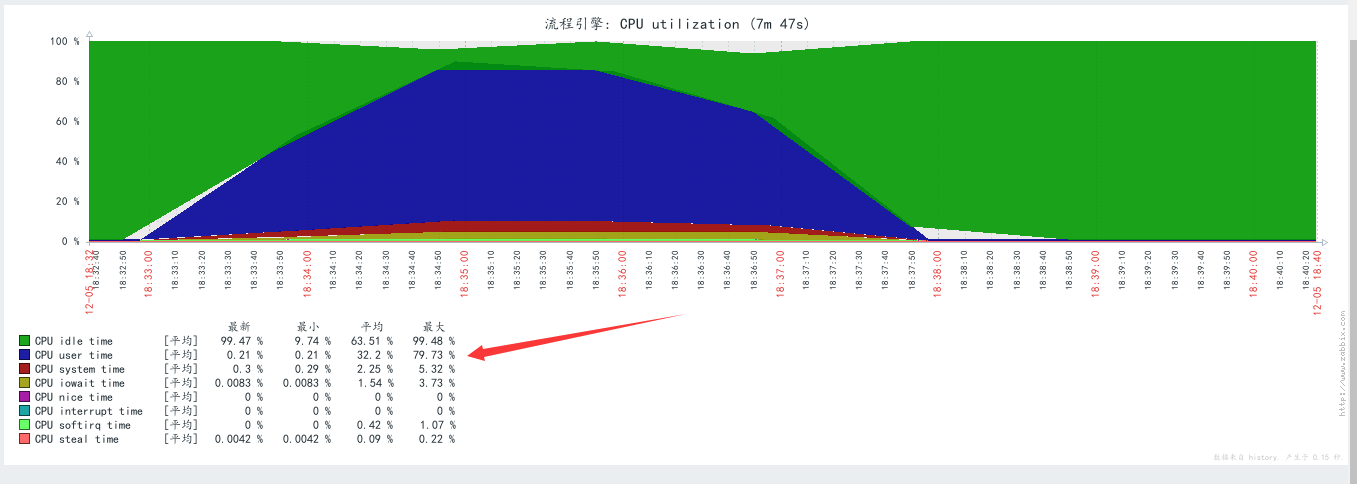
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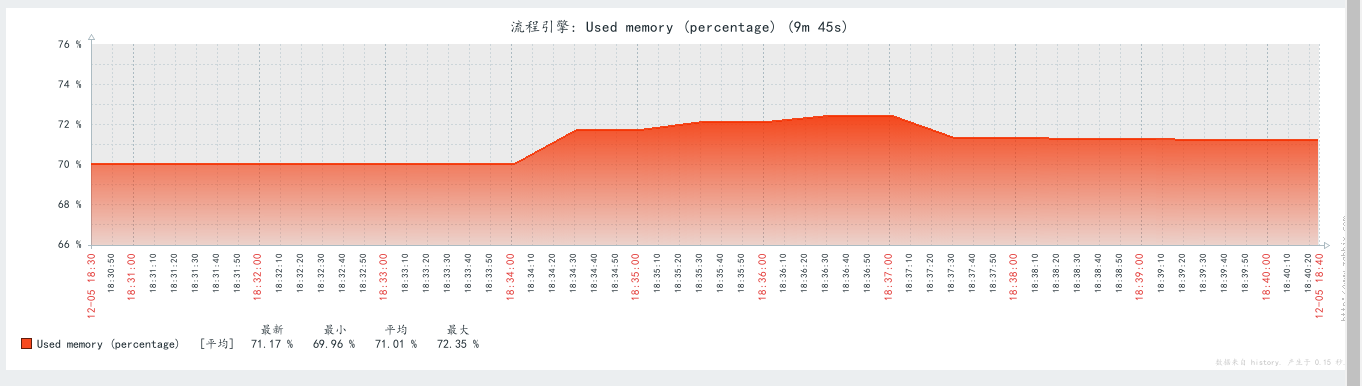
|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 并发线程数 | Sample | Average | Median | 90% line | Min | Max | Error | Thougtput | CPU use time | 内存使用率 |
| 20 | 10000 | 381ms | 383ms | 449ms | 58ms | 617ms | 0% | 49.9/s | 32.2% | 71.01% |
| 50 | 10000 | 891ms | 949ms | 1043ms | 57ms | 1222ms | 0% | 49.0/s | 43.18% | 72.49% |
| 100 | 10000 | 2356ms | 2684ms | 2834ms | 68ms | 2990ms | 0% | 34.2/s | 44.5% | 73.65% |
| 200 | 10000 | 2368ms | 2698ms | 3448ms | 57ms | 4256ms | 0% | 44.8/s | 57.44% | 75.69% |
| 500 | 10000 | 9698ms | 9141ms | 10668ms | 76ms | 132098ms | 0.61% | 31.4/s | 61.88% | 77.6% |

（20个线程的cpu use time）

Start\_time 18:33:22

End\_time 18:36:43

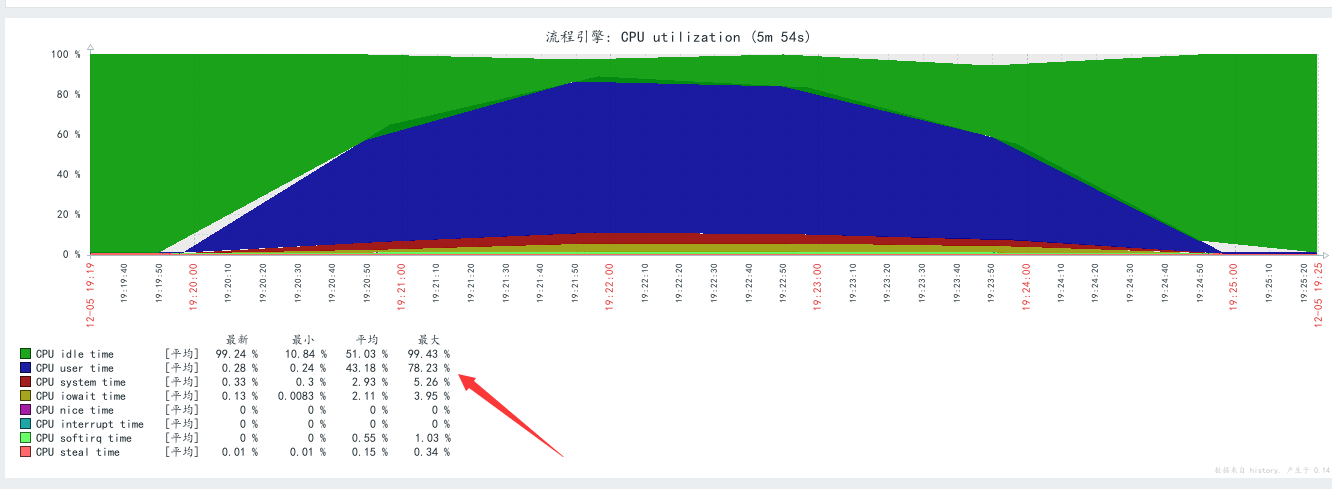


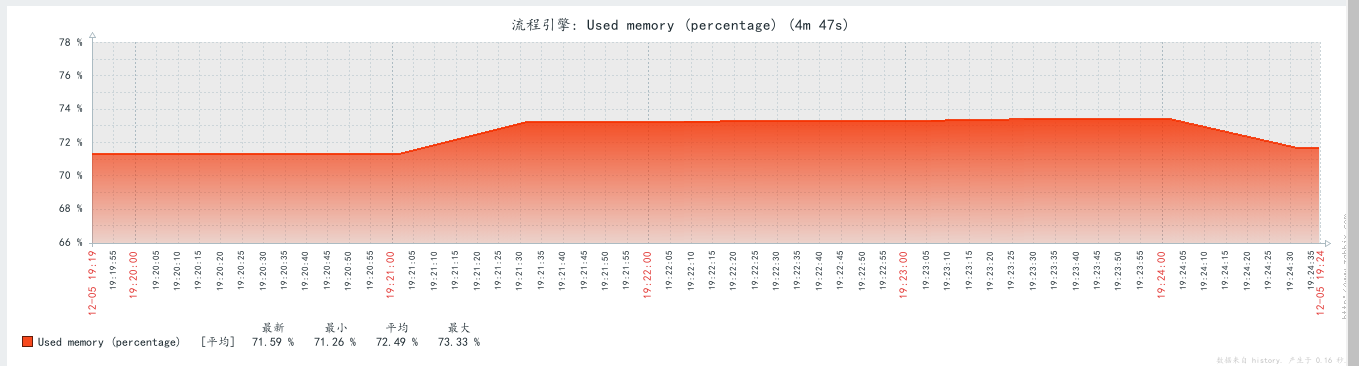


（50个线程的cpu use time）

Start\_time 19:20:14

End\_time 19:23:39

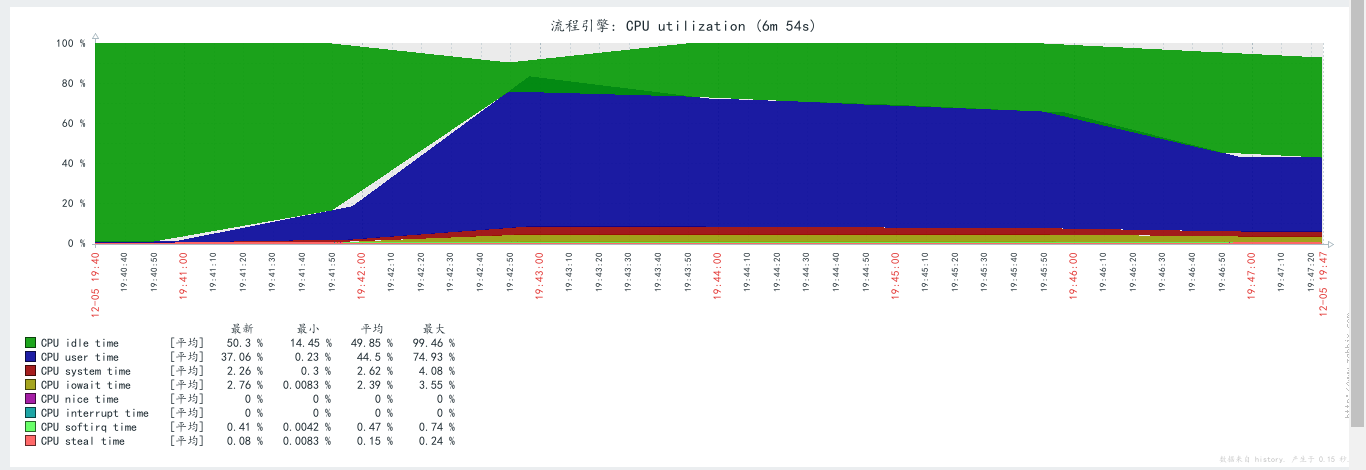


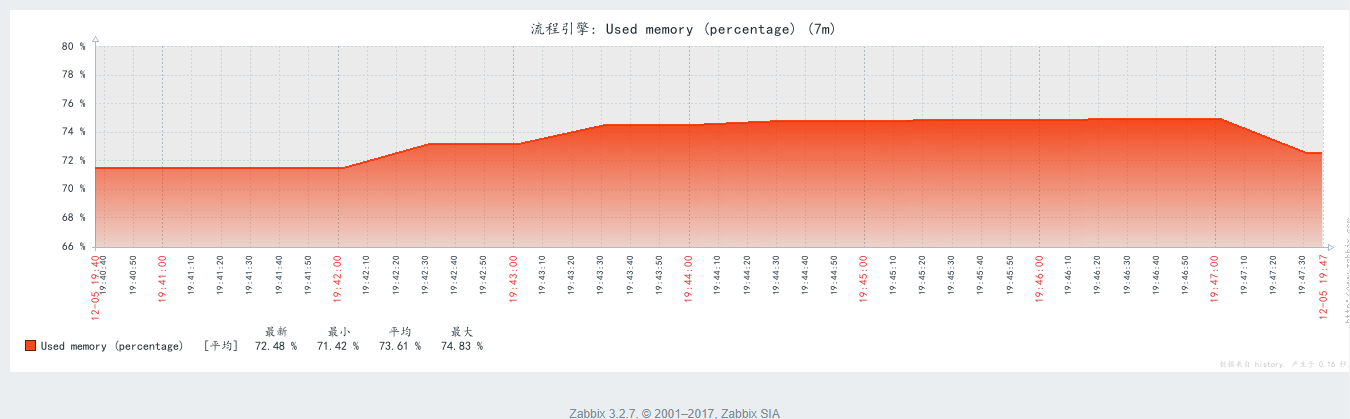


（100个线程的cpu use time）

Start\_time 19:41:44

End\_time 19:46:37

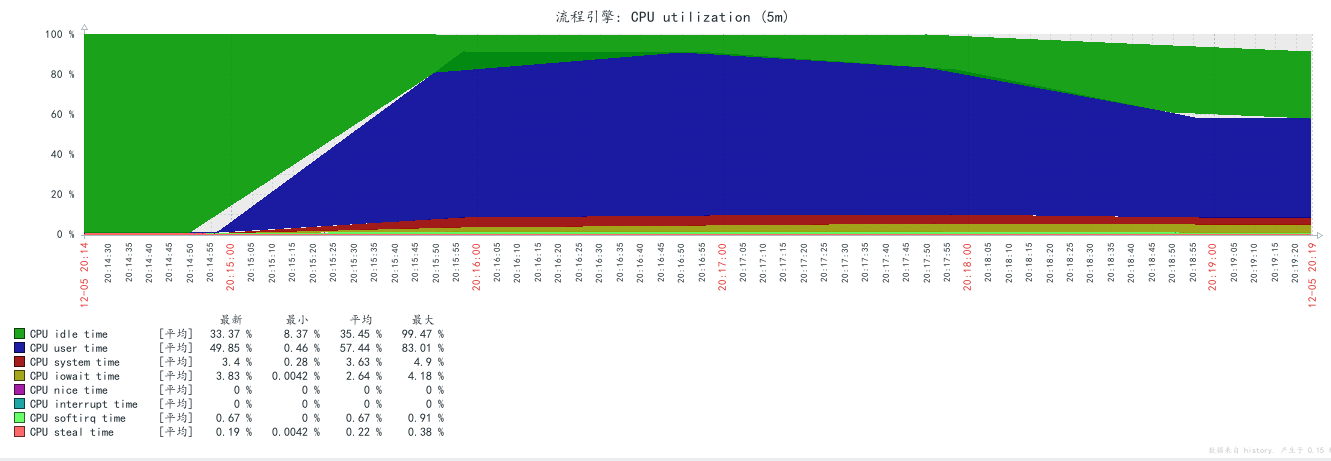


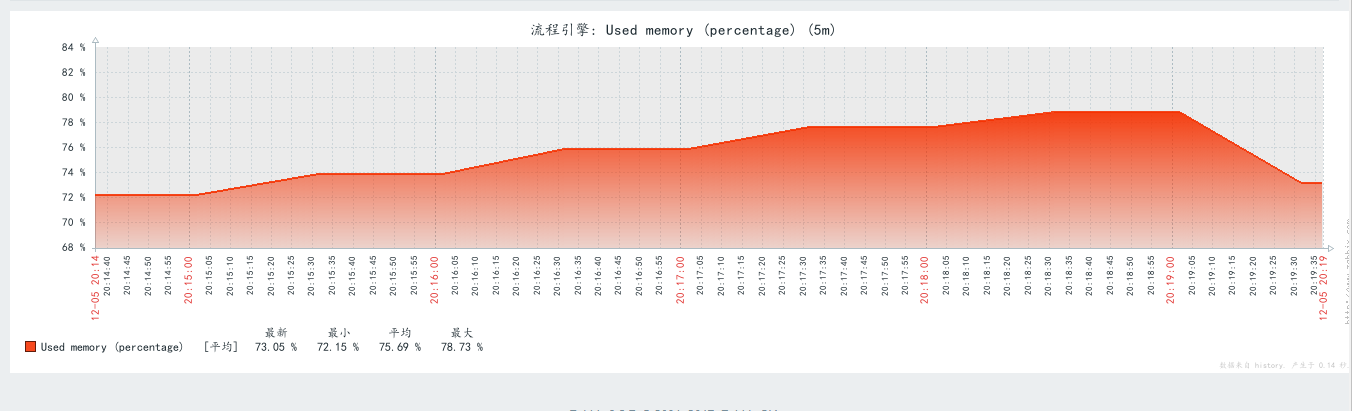


（200个线程的cpu use time）

Start\_time 20:14:57

End\_time 20:18:41

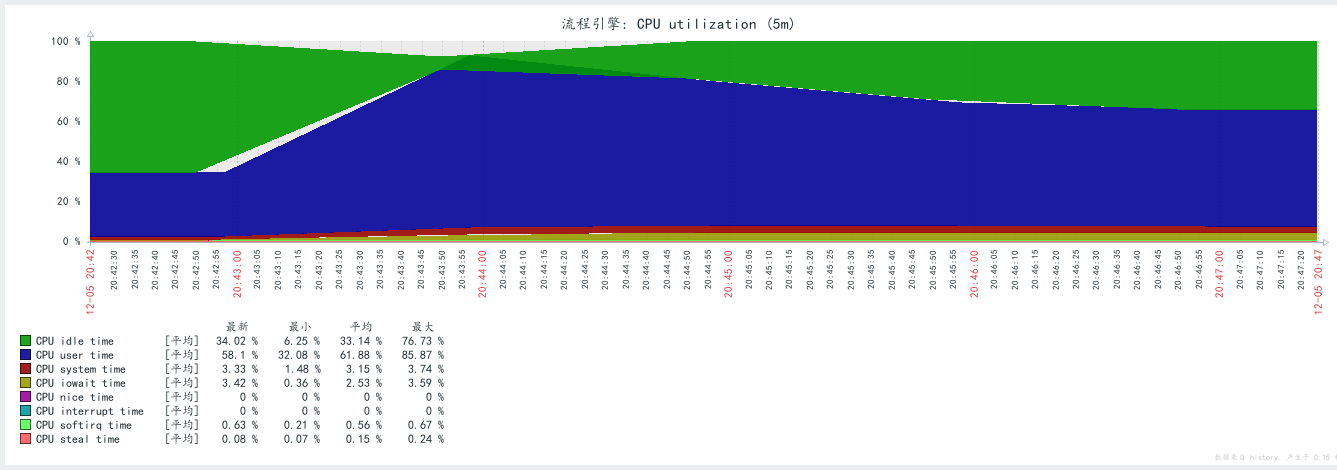


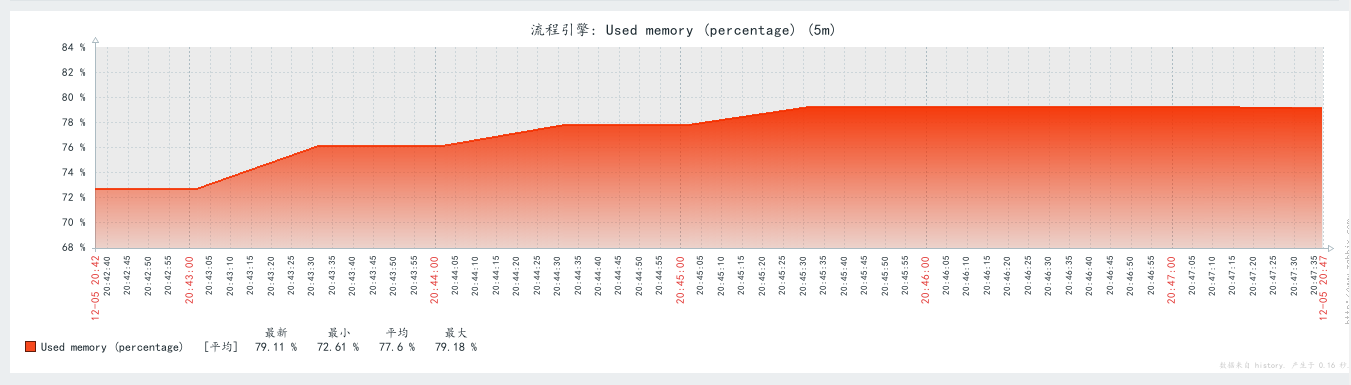


(500个线程的cpu use time）

Start\_time 20:42:35

End\_time 20:47:55





**总结:** 测试场景1：发起项目任务单审批流程

1. 并发数为500以内的时候系统的cpu和内存都在正常范围内，并发数在20至50区间时响应时间均低于1S。并发数到100到200时响应时间在2S左右，但并发升到500后响应时间在9秒左右

所以满足500并发要求

(2) 测试场景2：流程中心待办事项查询

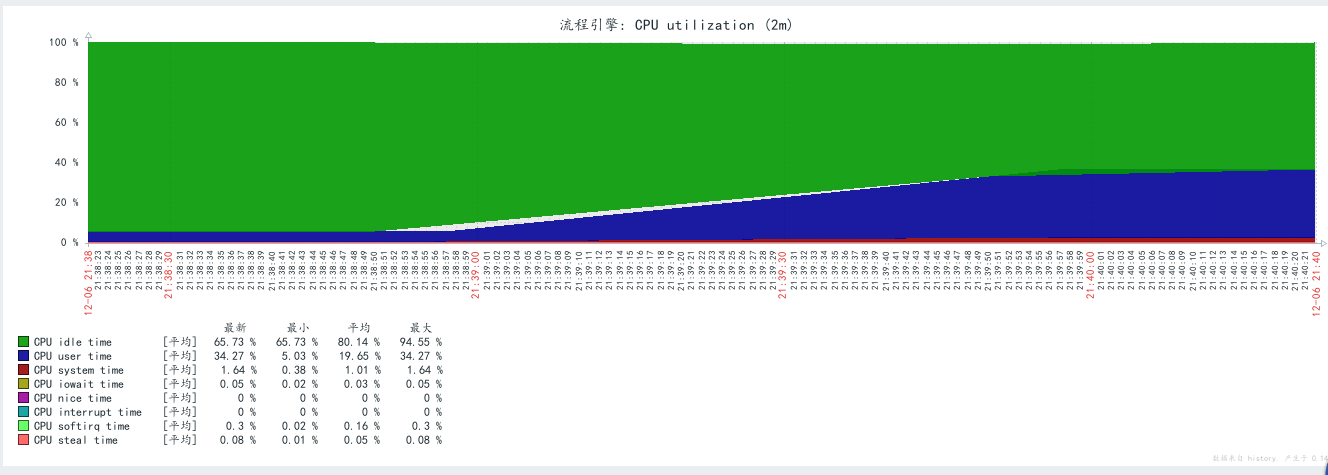
http://172.16.13.91:8080**/portal/flowcenter/getPendingList.action?isAll=true&isMyWorkFlow=false&title=&initiatorId=&flowId=11e7-d409-6997f51e-bedb-ff83e66ce862&applicationId=11e7-8d55-9c8815e6-8d1c-edfa8b3b5e37&domainId=&\_=1512551774489**

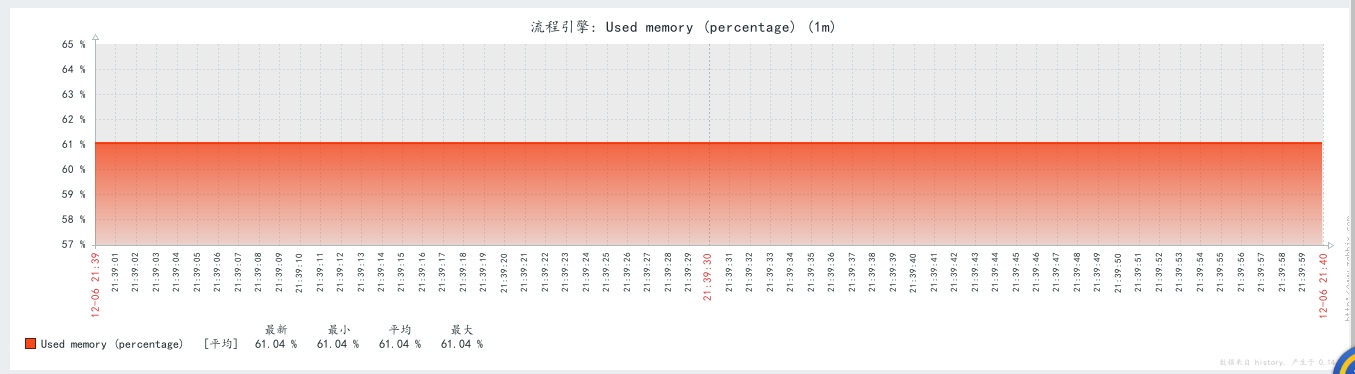
|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 并发线程数 | Sample | Average | Median | 90% line | Min | Max | Error | Thougtput | CPU use time | 内存使用率 |
| 10 | 10000 | 13ms | 11ms | 25ms | 1ms | 94ms | 0% | 476.4/s | 19.65% | 61.04% |
| 20 | 10000 | 18ms | 14ms | 39ms | 1ms | 147ms | 0% | 577.2/s | 27.35% | 60.96% |
| 50 | 10000 | 5ms | 8ms | 9ms | 1ms | 73ms | 0% | 391.9/s | 21.32% | 60.96% |
| 100 | 10000 | 5ms | 8ms | 9ms | 1ms | 62ms | 0% | 199.8/s | 24.59% | 61.55% |
| 200 | 10000 | 5ms | 8ms | 9ms | 1ms | 90ms | 0% | 199.9/s | 23.24% | 61.59% |
| 500 | 10000 | 16ms | 10ms | 37ms | 1ms | 821ms | 0% | 189.0/s | 82.55% | 62.3% |

（10个线程的cpu use time）

Start\_time 06 21:39:29 CST 2017

End\_time 06 21:39:51 CST 2017

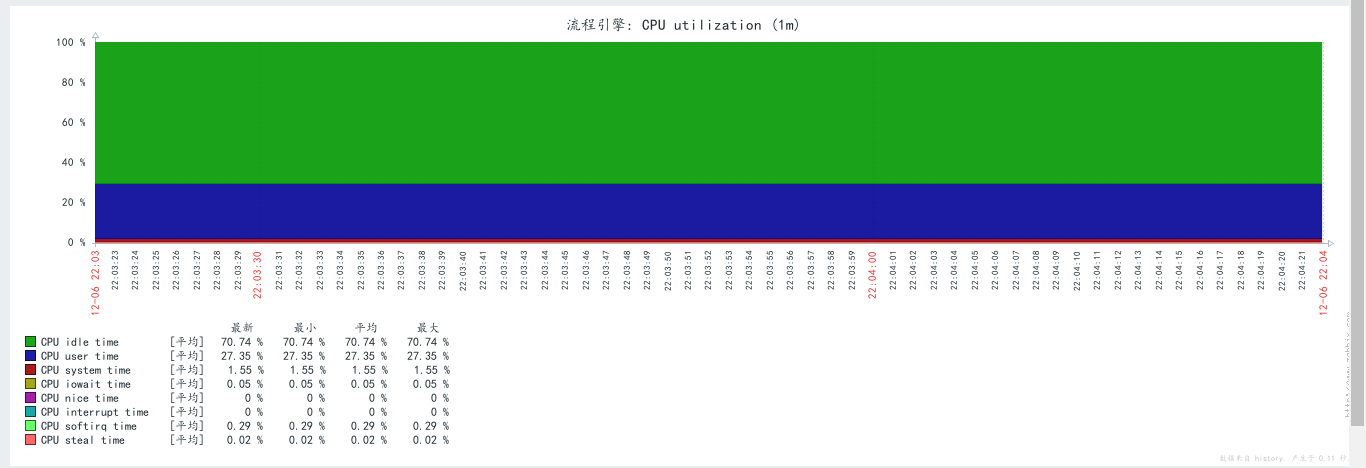


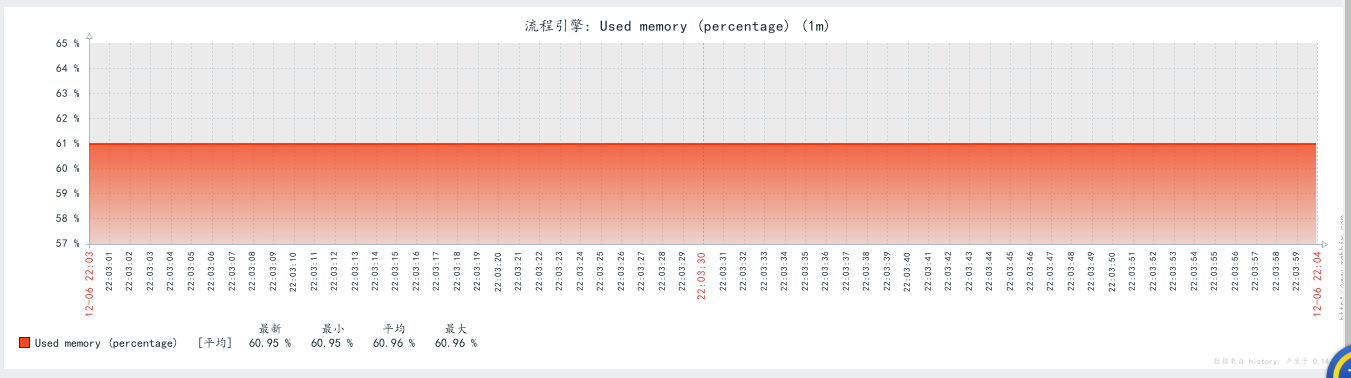


（20个线程的cpu use time）

Start\_time 06 22:03:14 CST 2017

End\_time 06 22:03:32 CST 2017

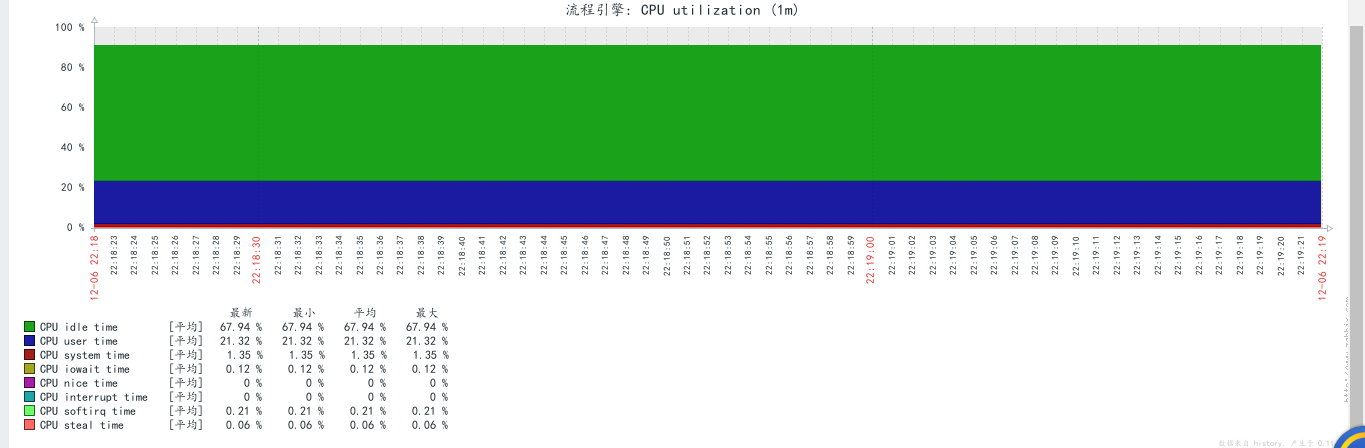


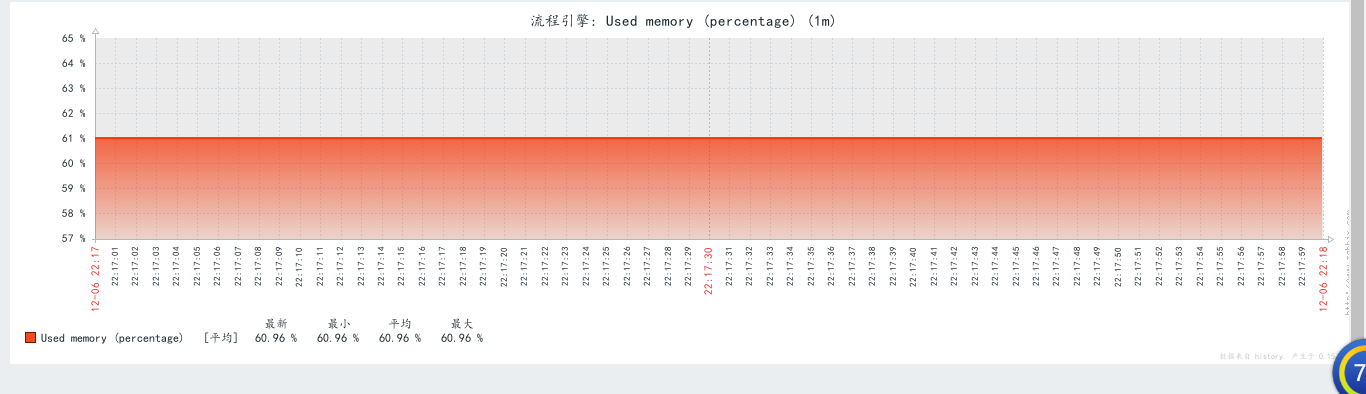


（50个线程的cpu use time）

Start\_time 06 22:17:50 CST 2017

End\_time 06 22:18:16 CST 2017

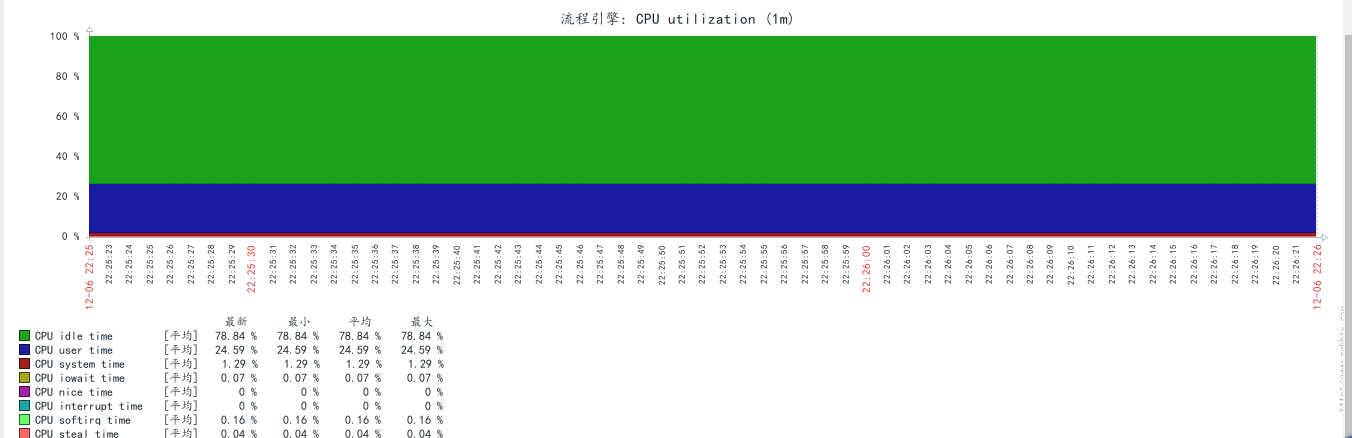


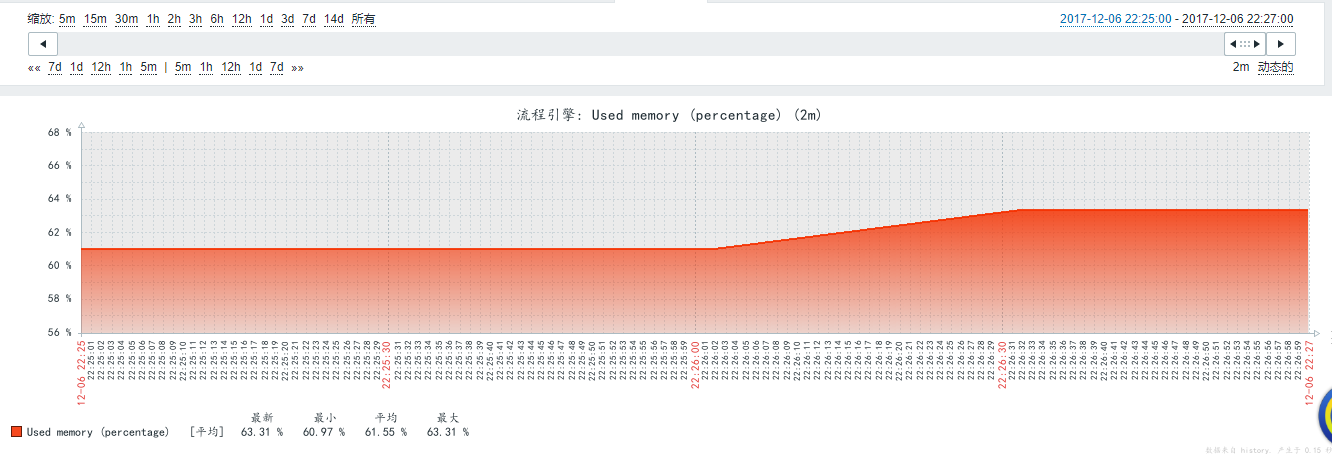


（100个线程的cpu use time）

Start\_time 06 22:25:23 CST 2017

End\_time 06 22:26:14 CST 2017

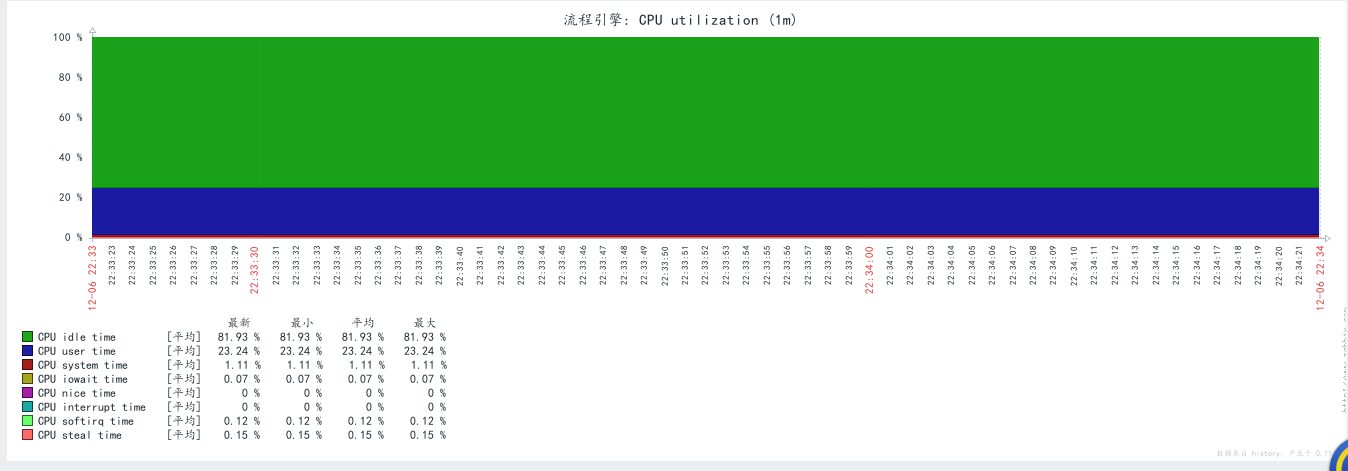


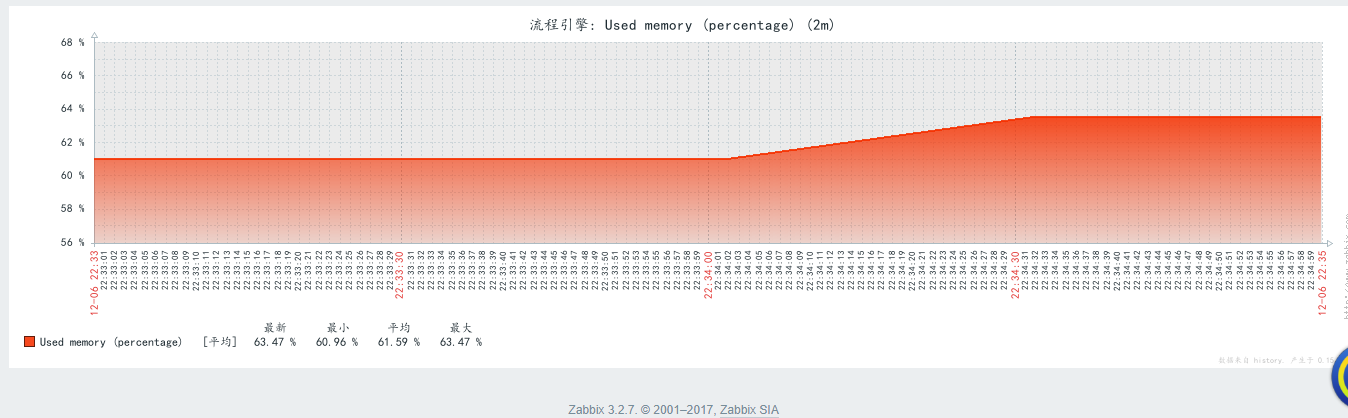


（200个线程的cpu use time）

Start\_time 06 22:33:33 CST 2017

End\_time 06 22:34:24 CST 2017

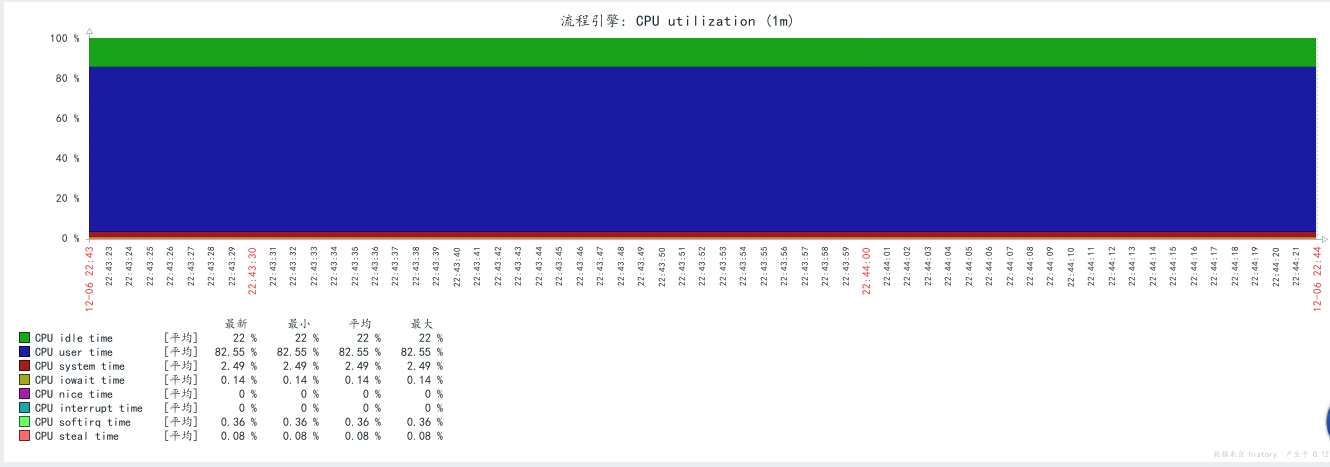


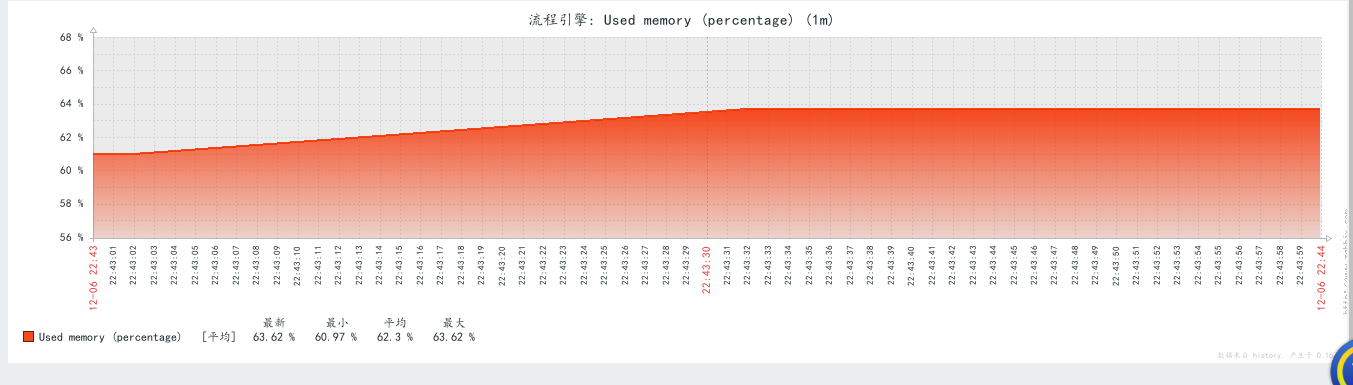


（500个线程的cpu use time）

Start\_time 06 22:43:01 CST 2017

End\_time 06 22:43:54 CST 2017





**总结:** 测试场景2：流程中心待办事项查询

1. 并发数为200以内的时候系统的cpu和内存都在正常范围内，cpu use time均低于25%，内存使用率均低于65%。并且响应时间不超过20毫秒.但当并发数达到500时，cpu use time有明显的上涨达到82.55%，但仍在可控范围.内存使用率在62.3%，Average 为16ms。所以，满足500并发的要求。
2. 测试场景3：项目任务单列表查询

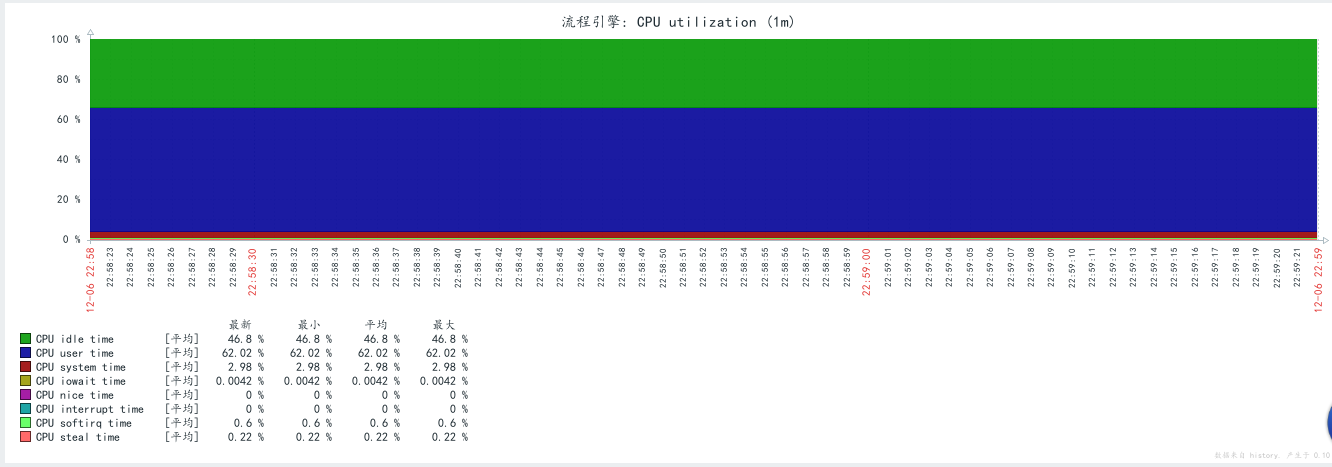
http://172.16.13.91:8080/portal/dynaform/view/displayViewWithPermission.action?\_viewid=11e7-c397-b6acdf16-9ee7-210ec3f2f5e4&clearTemp=true&application=11e7-8d55-9c8815e6-8d1c-edfa8b3b5e37

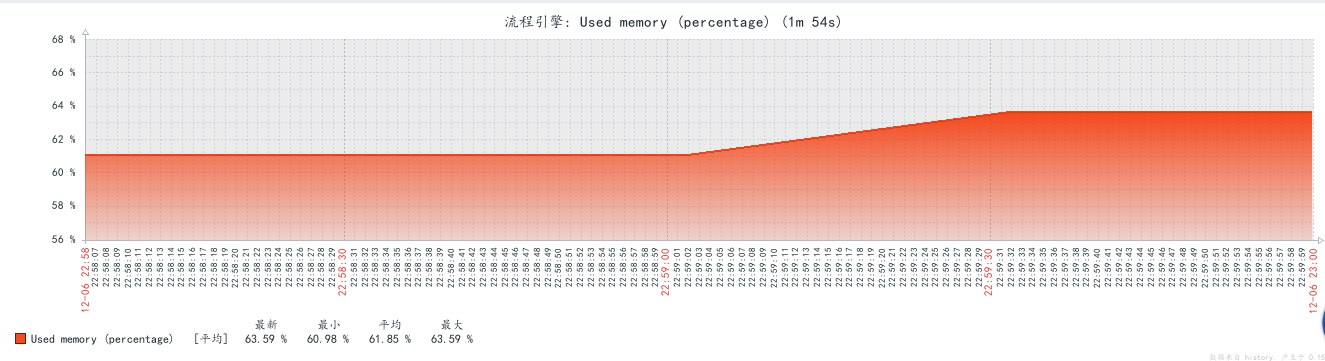
|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 并发线程数 | Sample | Average | Median | 90% line | Min | Max | Error | Thougtput | CPU use time | 内存使用率 |
| 10 | 10000 | 60ms | 58ms | 93ms | 19ms | 340ms | 0% | 155.0/s | 62.02% | 61.85% |
| 20 | 10000 | 109ms | 106ms | 173ms | 20ms | 685ms | 0% | 158.3/s | 59.25% | 61.45% |
| 50 | 10000 | 205ms | 218ms | 295ms | 18ms | 870ms | 0% | 158.8/s | 47.22% | 62.95% |
| 100 | 10000 | 193ms | 191ms | 319ms | 19ms | 1483ms | 0% | 149.5/s | 59.67% | 61.68% |
| 200 | 10000 | 22ms | 21ms | 26ms | 18ms | 97ms | 0% | 99.4/s | 44.79% | 63.05% |
| 500 | 10000 | 20ms | 20ms | 22ms | 18ms | 67ms | 0% | 40.0/s | 32.39% | 64.69% |

（10个线程的cpu use time）

Start\_time 06 22:58:16 CST 2017

End\_time 06 22:59:21 CST 2017

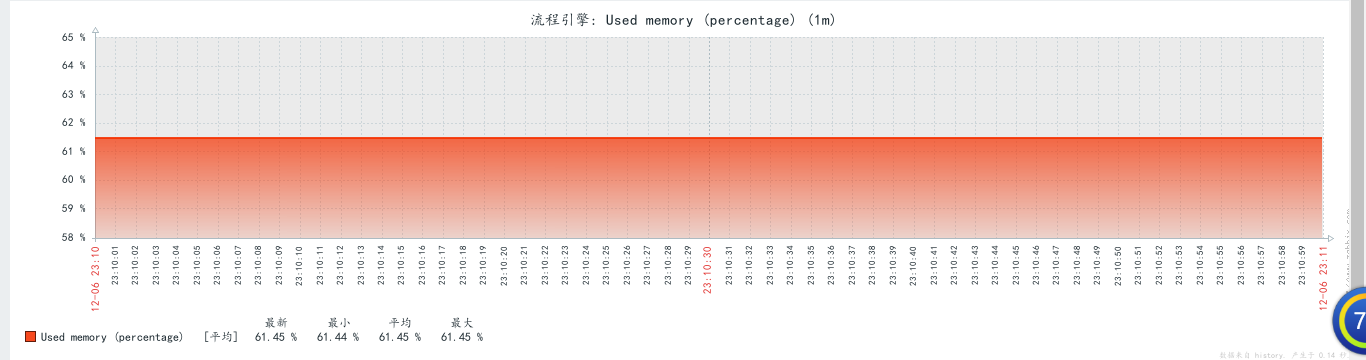


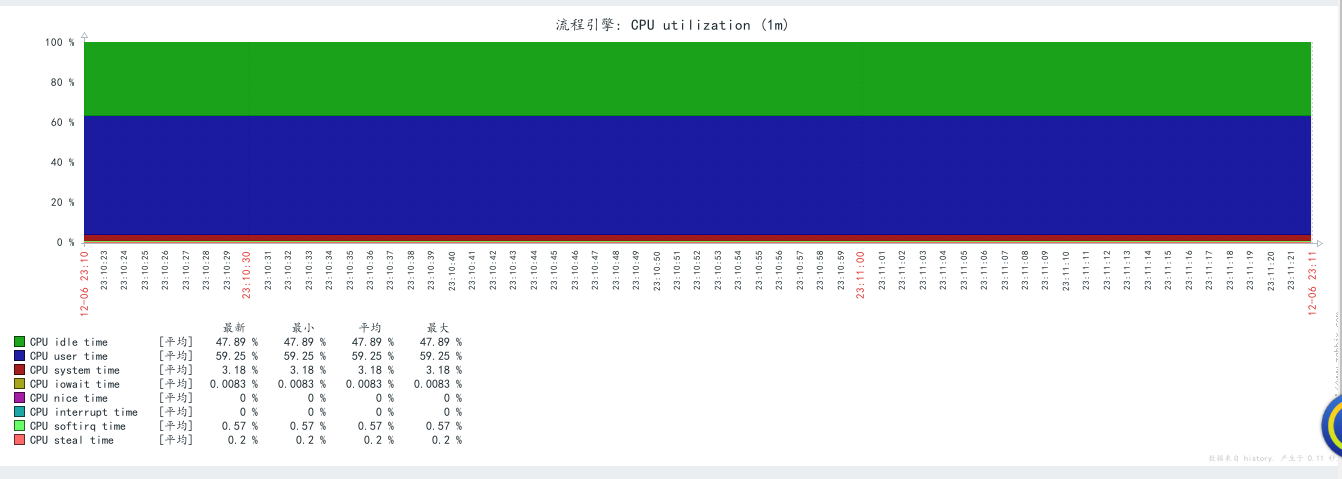


（20个线程的cpu use time）

Start\_time 06 23:10:18 CST 2017

End\_time 06 23:11:21 CST 2017

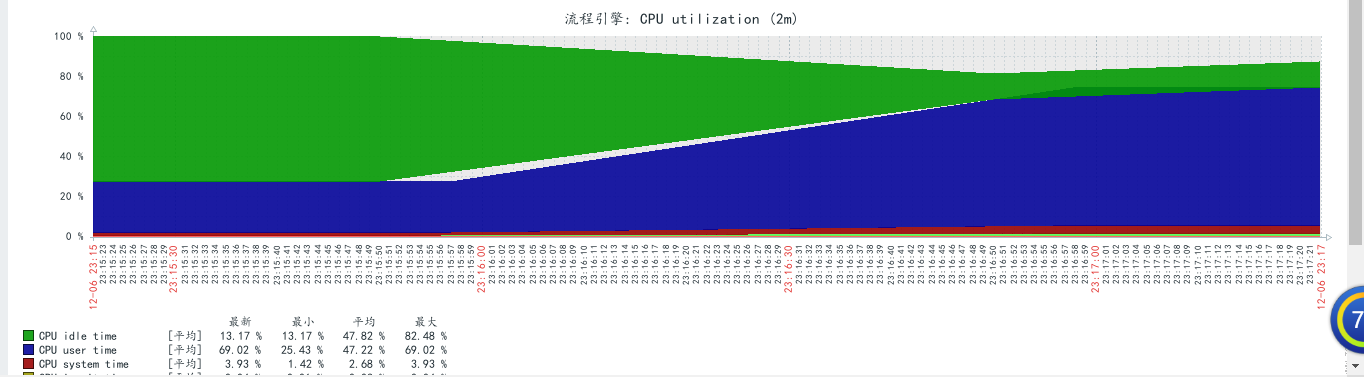


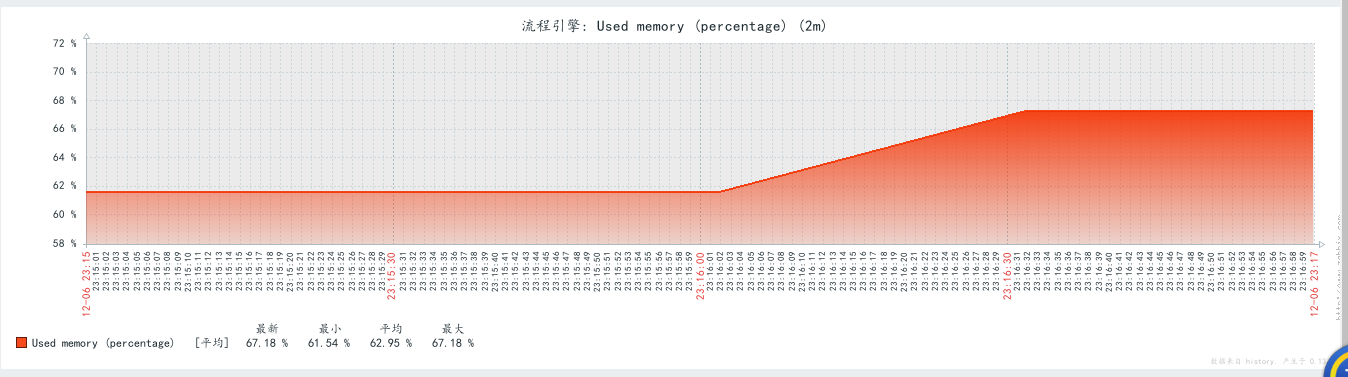


（50个线程的cpu use time）

Start\_time 06 23:15:39 CST 2017

End\_time 06 23:16:43 CST 2017

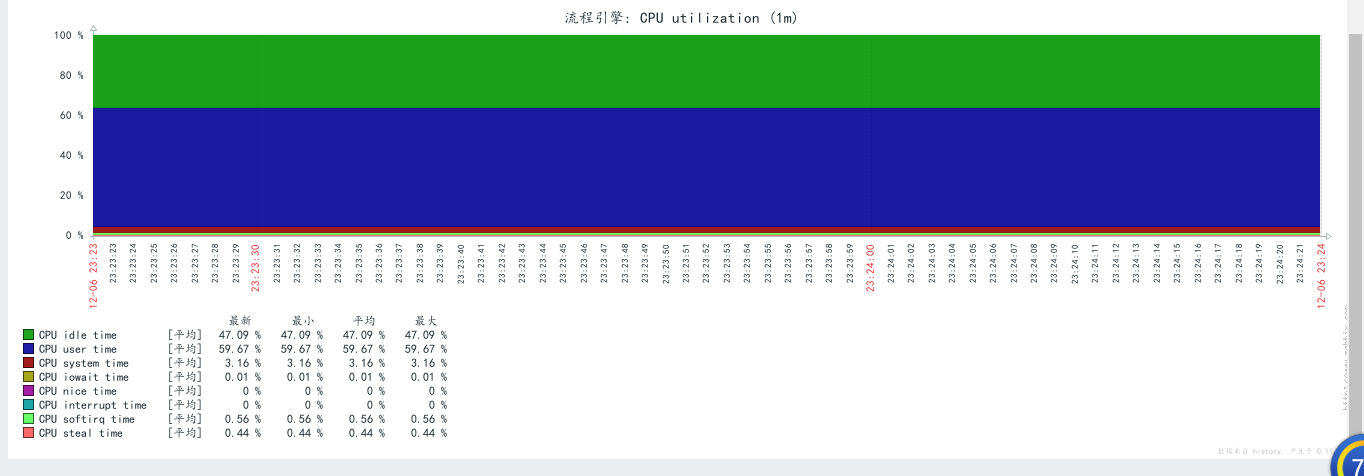


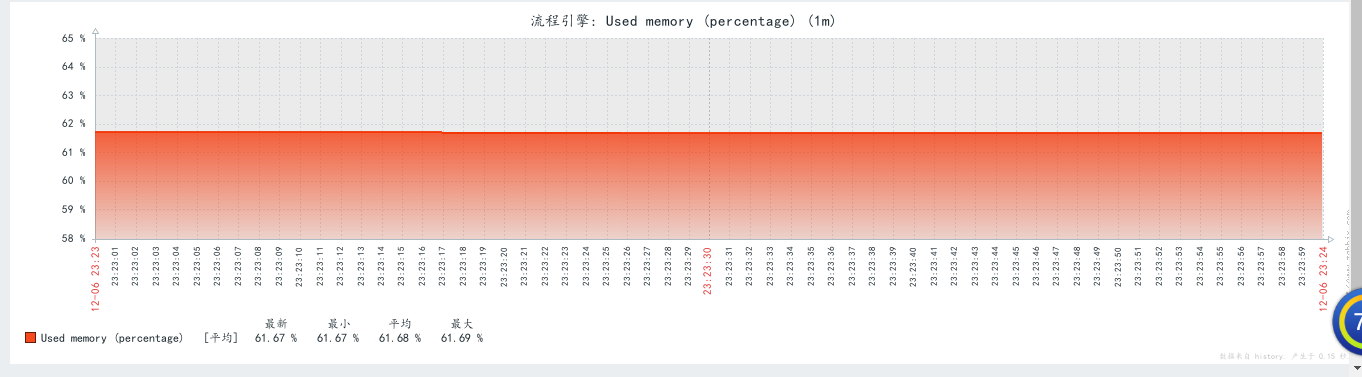


（100个线程的cpu use time）

Start\_time 06 23:23:17 CST 2017

End\_time 06 23:24:25 CST 2017

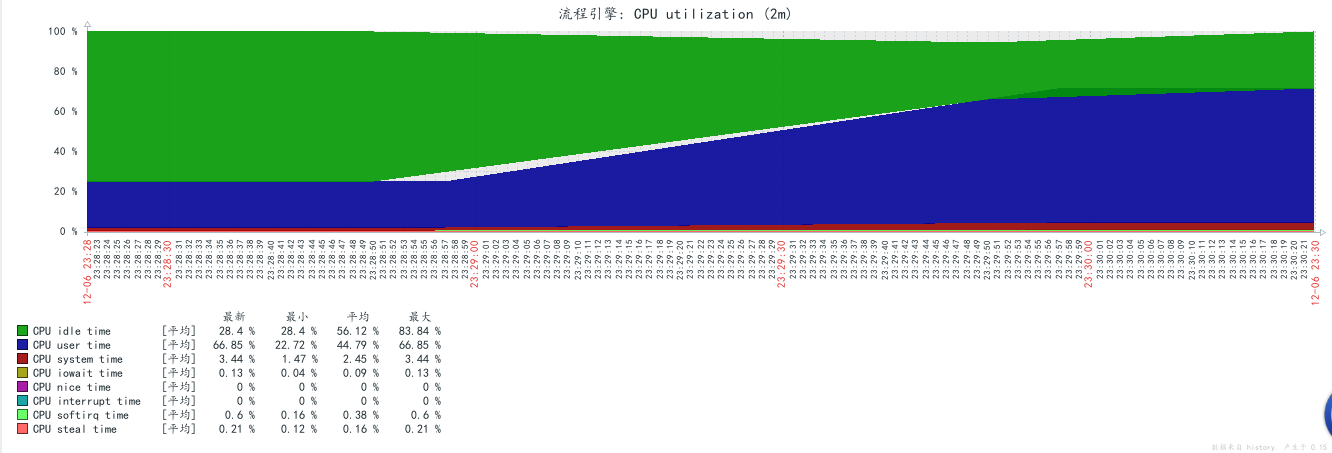


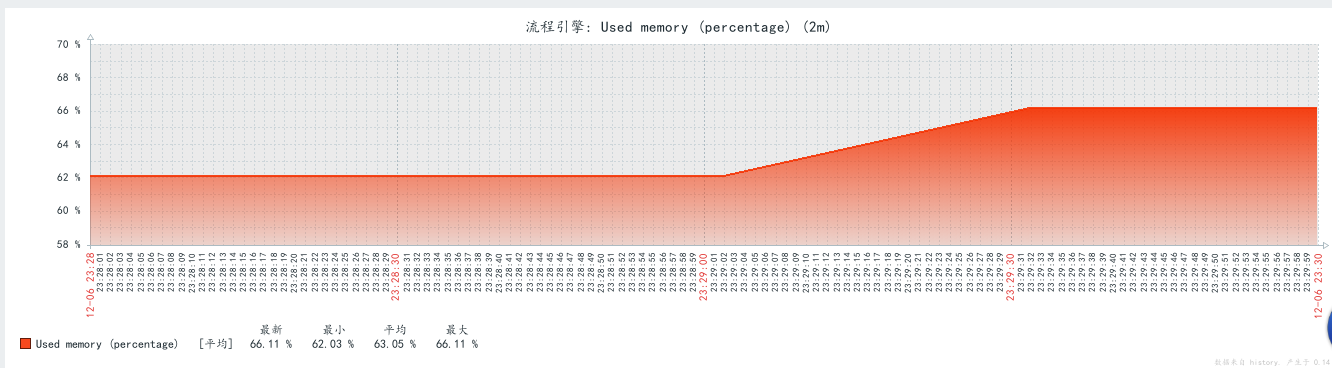


（200个线程的cpu use time）

Start\_time 06 23:28:37 CST 2017

End\_time 06 23:30:19 CST 2017

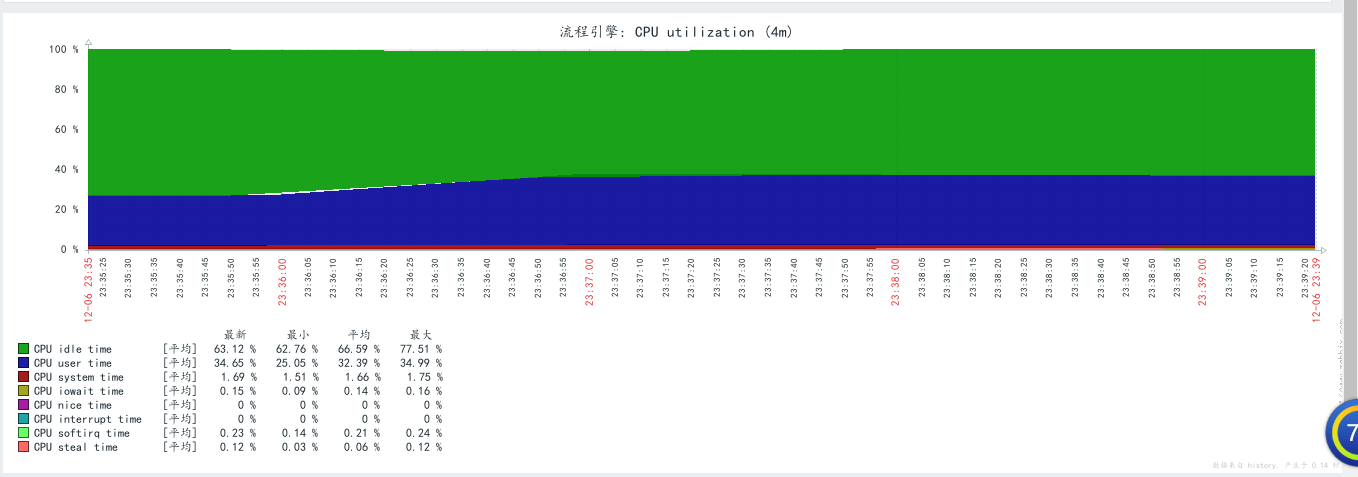


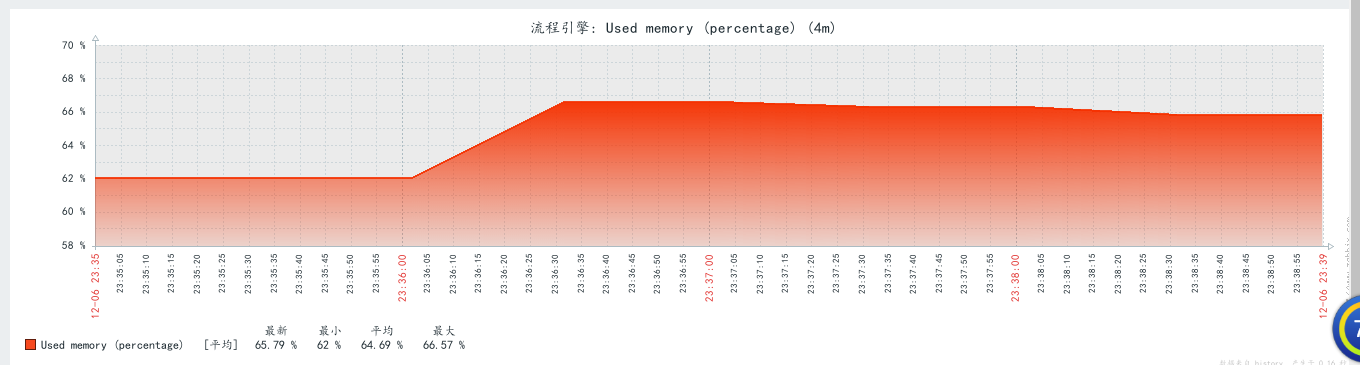


（500个线程的cpu use time）

Start\_time 06 23:35:15 CST 2017

End\_time 06 23:39:26 CST 2017

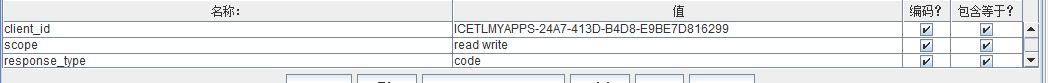




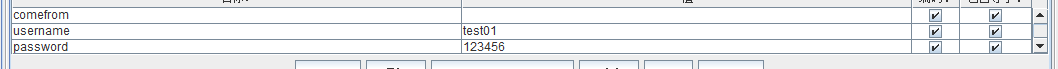
**总结:** 测试场景3：项目任务单列表查询

1. 并发数在500以内的时候系统的cpu和内存都在正常范围内，cpu use time均低于65%，内存使用率均低于65%。并且响应时间不超过1秒.所以，满足500并发的要求。
2. 测试场景4：登录（调用ice接口单点登录）

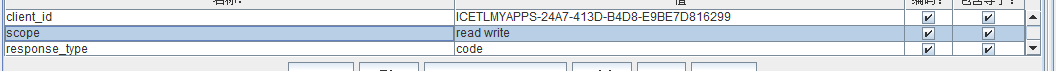
<http://oauth2.colourlife.com>/oauth/authorize

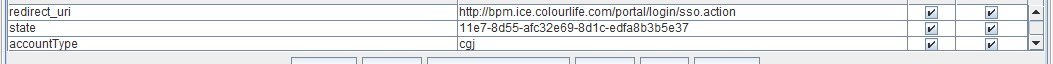






<http://oauth2.colourlife.com>/oauth/authorize







|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 并发线程数 | Sample | Average | Median | 90% line | Min | Max | Error | Thougtput |
| 10 | 20000 | 1745ms | 612ms | 4096ms | 36ms | 25173ms | 0.27% | 5.6/s |
| 20 | 20000 | 2958ms | 670ms | 9690ms | 26ms | 39958ms | 2.63% | 6.5/s |
| 50 | 20000 | 84852ms | 46ms | 21000ms | 0ms | 32655178ms | 57.48% | 35.3/min |

**总结:** 测试场景4：登录（调用ice接口单点登录）

并发数在50的时候Error错误率.所以，不满足500并发的要求。

(5)测试场景 5登录（BPM自身接口，实际业务没有调用）

<http://172.16.13.91:8080/portal/login/login.action>

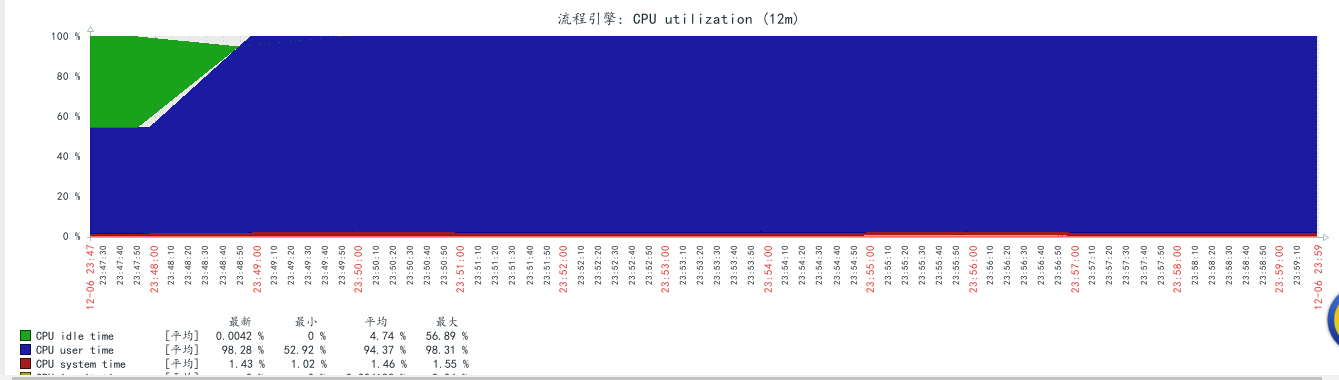


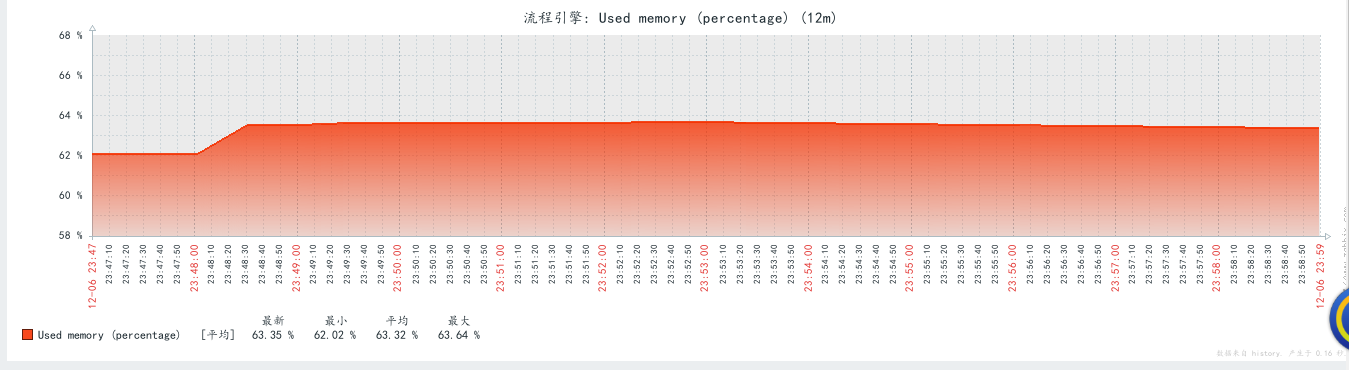
|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 并发线程数 | Sample | Average | Median | 90% line | Min | Max | Error | Thougtput | CPU use time | 内存使用率 |
| 10 | 10000 | 727ms | 739ms | 909ms | 253ms | 1275ms | 0% | 13.5/s | 94.37% | 63.32% |

（10个线程的cpu use time）

Start\_time 06 23:47:24 CST 2017

End\_time 06 23:59:43 CST 2017





**总结:** 测试场景5登录（BPM自身接口，实际业务没有调用）

1. 并发数在10的时候CPU use time高于90%所以，不满足500并发的要求。
2. 原因分析：1.此接口除了有登陆鉴权业务还包含了构建用户的所有操作权限缓存的业务，由于bpm是柔性开发平台，权限的粒度可以控制得很细，此业务运算复杂度相对较高，比较消耗cup，但时间复杂度还是能接受的；2.登陆接口压10000次相当于短期内有10000在线用户，bpm平台登陆用户是记录在session的，默认30分钟超时；3.此接口在实际业务场景中并没有调用到，目前是通过ice平台登陆的。