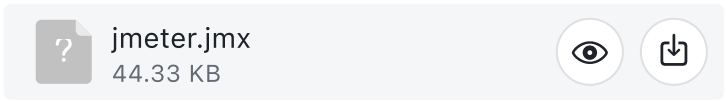
压测报告

压测环境

```
mac Pro m1 pro 16GB
```

使用JDK21 jar 包启动，本地启动jmeter 压测，jmeter任务配置：



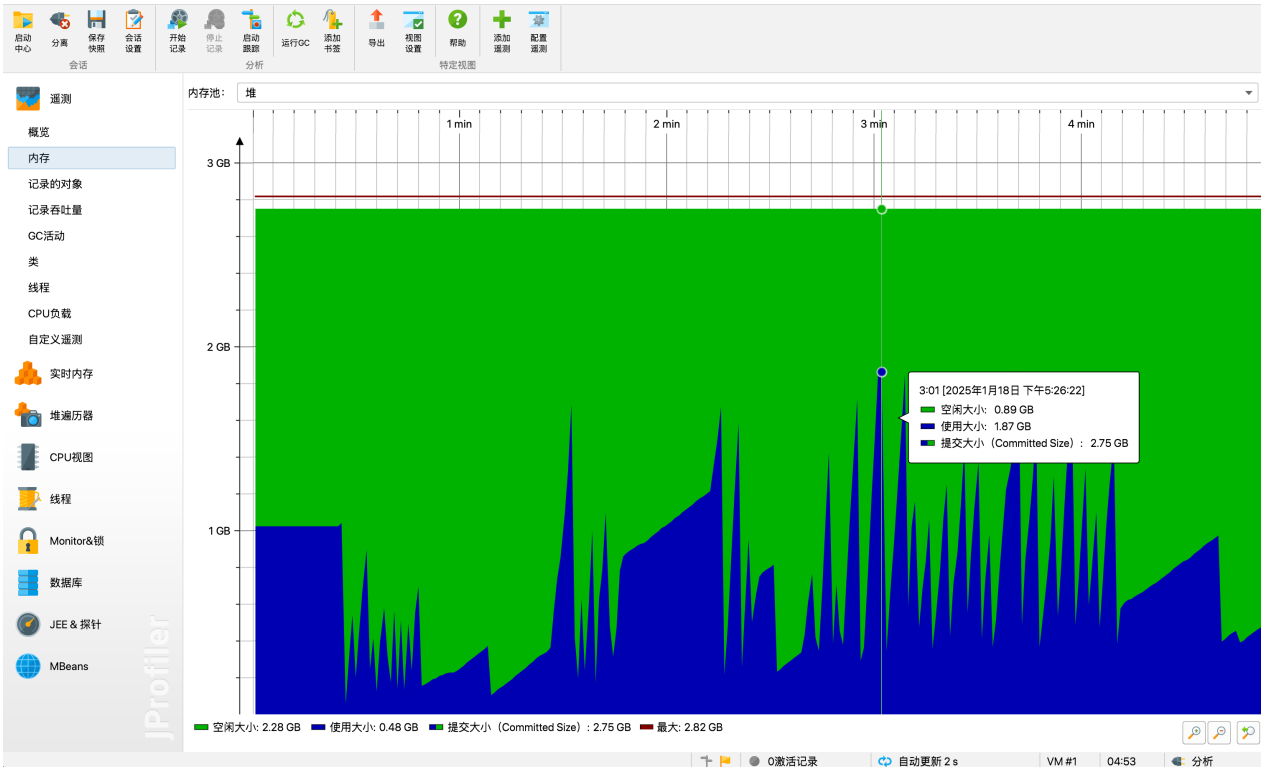
同时开jprofile分析线程和CPU，GC，内存情况是否正常

启动JVM参数

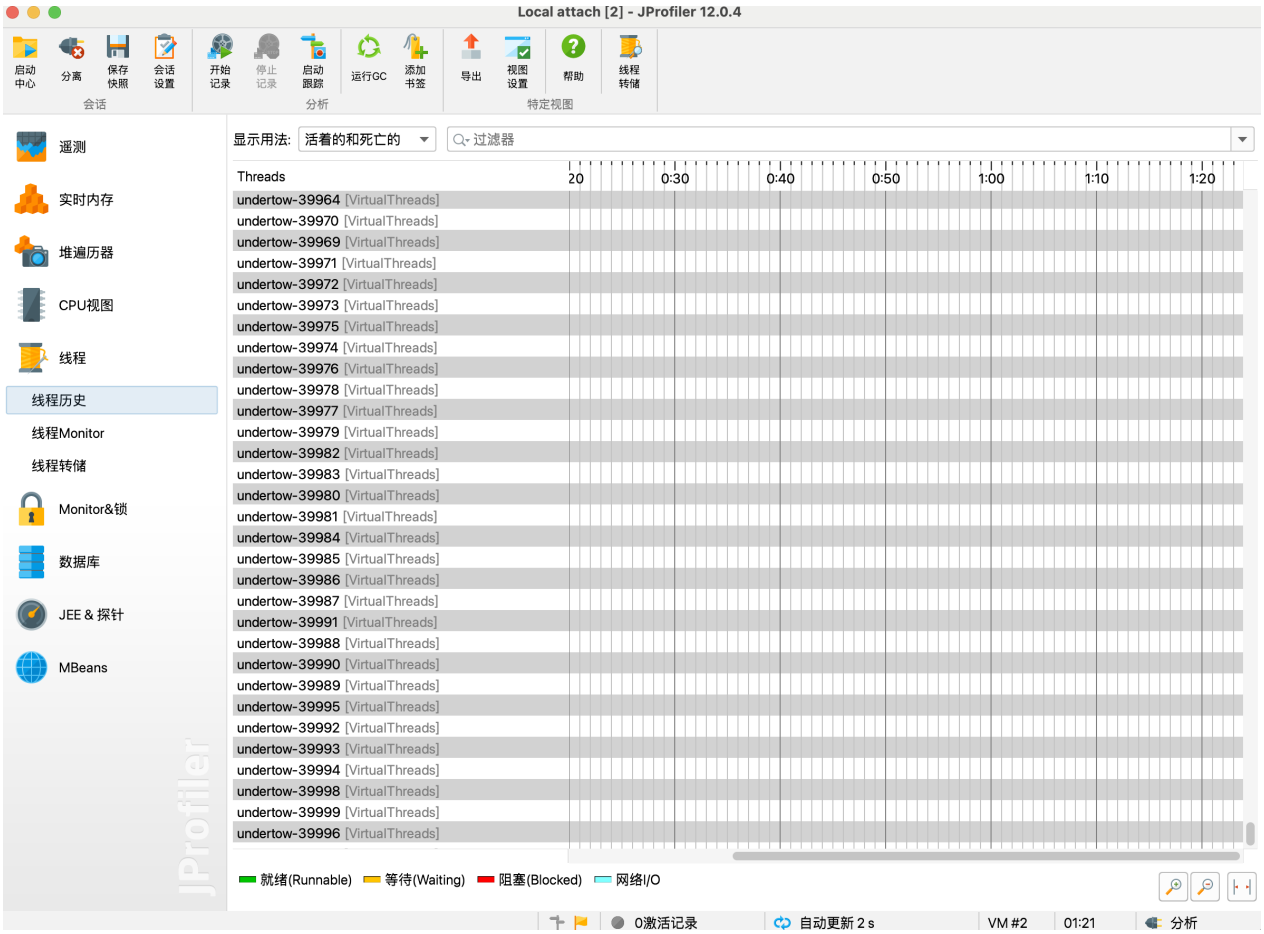
```
/Users/zhangdaochuan/Library/Java/JavaVirtualMachines/azul-21.0.5/Contents/Home/bin/java --add-opens java.base/java.lang=ALL-UNNAMED -Denv=dev -Dprocess_num= -Xmx2688M -Xms2688M -XX:MaxMetaspaceSize=256M -XX:MetaspaceSize=256M -XX:+DisableExplicitGC -XX:MaxGCPauseMillis=100 -XX:+UseG1GC -XX:+ParallelRefProcEnabled -server -Duser.timezone=GMT+08 -XX:+HeapDumpOnOutOfMemoryError -XX:HeapDumpPath=/Users/zhangdaochuan/Documents/git_project/hsbc/transaction/target/transaction/logs/dump.hprof -XX:ErrorFile=/Users/zhangdaochuan/Documents/git_project/hsbc/transaction/target/transaction/logs/hs_err_pid%p%t.log -jar /Users/zhangdaochuan/Documents/git_project/hsbc/transaction/target/transaction/transaction-1.0-SNAPSHOT.jar --spring.profiles.active=dev
```

JVM堆内存2.75G

GC情况



开启虚拟线程后，不论Tomcat还是undertow都没有线程池限制，这里还是需要进一步评估不限制虚拟线程的影响

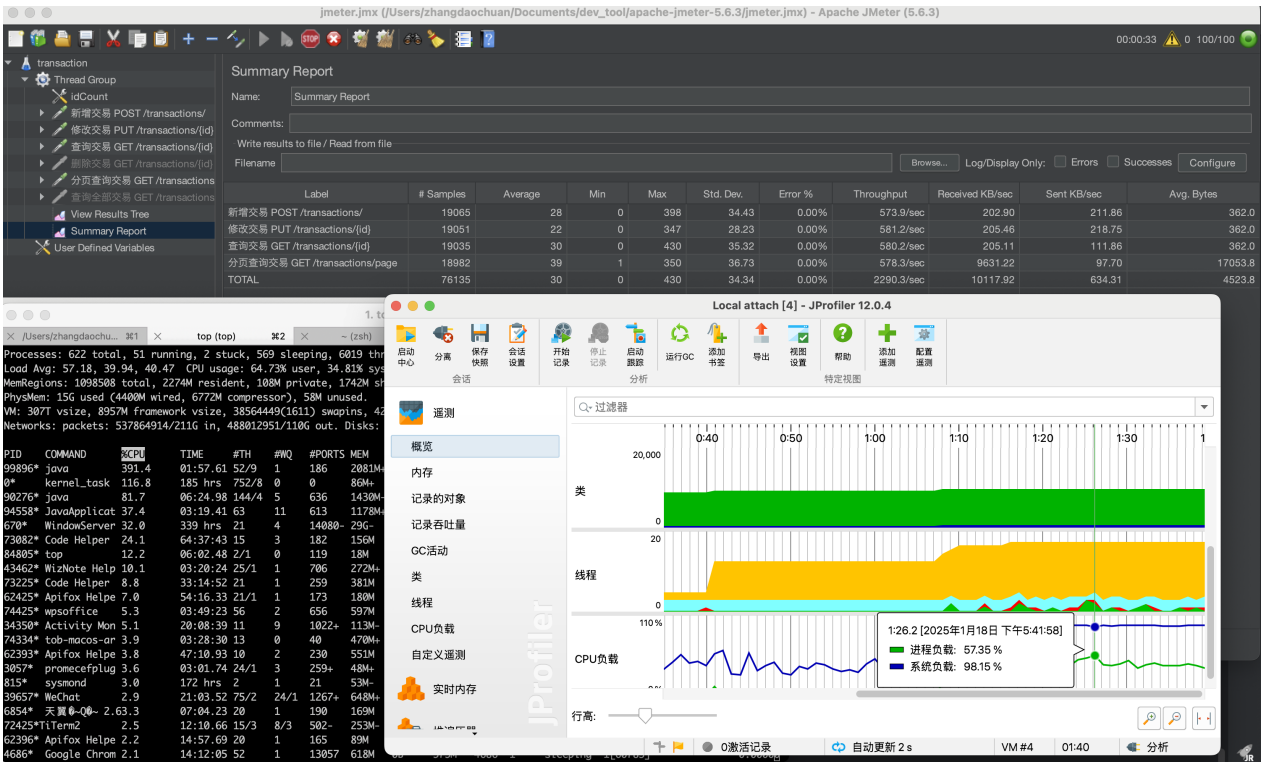


在压测中，真实线程一直很稳定，总线程在20个，没有线程泄漏问题

用jemete 禁止了删除和查询全部接口，性能可以到580/s，总请求可以到2290/s

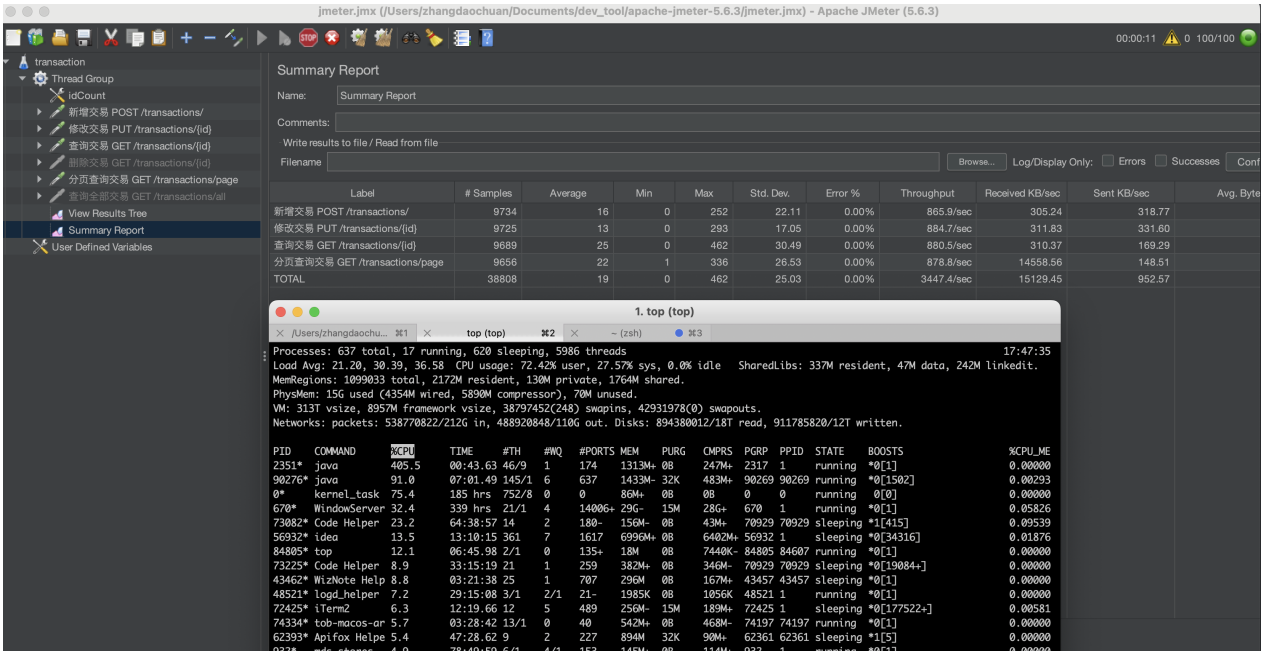
高峰CPU消耗400%，占本机总CPU约57%

可以看到线程那里



去除jprpfile在进行压测

CPU400%情况下，每个请求可以达到870/s，总请求3447/s 耗时 avg 13~25ms


jmeter.jmx (/Users/zhangdaochuan/Documents/dev_tool/apache-jmeter-5.6.3/jmeter.jmx) - Apache JMeter (5.6.3)
00:00:11 0 100/100
transaction
Thread Group
idCount
新增交易 POST /transactions/
修改交易 PUT /transactions/{id}
查询交易 GET /transactions/{id}
删除交易 GET /transactions/{id}
分页查询交易 GET /transactions/page
查询全部交易 GET /transactions/all
View Results Tree
Summary Report
User Defined Variables
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. Byte
新增交易 POST /transactions/ 9734 16 0 252 22.11 0.00% 865.9/sec 305.24 318.77
修改交易 PUT /transactions/{id} 9725 13 0 293 17.05 0.00% 884.7/sec 311.83 331.60
查询交易 GET /transactions/{id} 9689 25 0 462 30.49 0.00% 880.5/sec 310.37 169.29
分页查询交易 GET /transactions/page 9656 22 1 336 26.53 0.00% 878.8/sec 14558.56 148.51
TOTAL 38808 19 0 462 25.03 0.00% 3447.4/sec 15129.45 952.57
1. top (top)
/Users/zhangdaochu... ⌘1
top (top) ⌘2
~ (zsh) ⌘3
Processes: 637 total, 17 running, 620 sleeping, 5986 threads 17:47:35
Load Avg: 21.20, 30.39, 36.58 CPU usage: 72.42% user, 27.57% sys, 0.0% idle SharedLibs: 337M resident, 47M data, 242M linkedit.
MemRegions: 1099033 total, 2172M resident, 130M private, 1764M shared.
PhysMem: 15G used (4354M wired, 5890M compressor), 70M unused.
VM: 313T vsize, 8957M framework vsize, 38797452(248) swapins, 42931978(0) swapouts.
Networks: packets: 538770822/212G in, 488920848/110G out. Disks: 894380012/18T read, 911785820/12T written.
PID COMMAND %CPU TIME #TH #WQ #PORTS MEM PURG CMPRS PGRP PPID STATE BOOSTS %CPU_ME
2351* java 405.5 00:43.63 46/9 1 174 1313M+ 0B 247M+ 2317 1 running *0[1] 0.00000
90276* java 91.0 07:01.49 145/1 6 637 1433M- 32K 483M+ 90269 90269 running *0[1502] 0.00293
0* kernel_task 75.4 185 hrs 752/8 0 0 86M+ 0B 0B 0 0 running 0[0] 0.00000
670* WindowServer 32.4 339 hrs 21/1 4 14006+ 29G- 15M 28G+ 670 1 running *0[1] 0.05826
73082* Code Helper 23.2 64:38:57 14 2 180- 156M- 0B 43M+ 70929 70929 sleeping *1[415] 0.09539
56932* idea 13.5 13:10:15 361 7 1617 6996M+ 0B 6402M+ 56932 1 sleeping *0[34316] 0.01876
84805* top 12.1 06:45.98 2/1 0 135+ 18M 0B 7440K- 84805 84607 running *0[1] 0.00000
73225* Code Helper 8.9 33:15:19 21 1 259 382M+ 0B 346M- 70929 70929 sleeping *0[19084+] 0.00000
43462* WizNote Help 8.8 03:21:38 25 1 707 296M 0B 167M+ 43457 43457 sleeping *0[1] 0.00000
48521* logd_helper 7.2 29:15:08 3/1 2/1 21- 1985K 0B 1056K 48521 1 running *0[1] 0.00000
72425* iTerm2 6.3 12:19.66 12 5 489 256M- 15M 189M+ 72425 1 sleeping *0[177522+] 0.00581
74334* tob-macos-ar 5.7 03:28:42 13/1 0 40 542M+ 0B 468M- 74197 74197 running *0[1] 0.00000
62393* Apifox Helpe 5.4 47:28.62 9 2 227 894M 32K 90M+ 62361 62361 sleeping *1[5] 0.00000