

MACO BI

并发测试报告

名 称 并发测试报告 版 号 V1.0

拟 制 杨东风 日 期 2019/10/16

一、测试环境

(1) Tomcat 8.0

(2) Nginx 关闭 Session 绑定

(3) JDK 1.8

(4) Redis 5.1

(5) MongoDB 3.0

| 服务器 | 配置 |
|---------------------|--------------------------------------|
| Tomcat 节点 1 | CPU : 8 核心 x1 , 内存 : 32G , 硬盘 : 300G |
| Tomcat 节点 2 | CPU : 8 核心 x1 , 内存 : 32G , 硬盘 : 300G |
| Tomcat 节点 3 | CPU : 8 核心 x1 , 内存 : 32G , 硬盘 : 300G |
| Tomcat 节点 4 | CPU : 8 核心 x1 , 内存 : 32G , 硬盘 : 300G |
| Nginx+Redis+MongoDB | CPU : 8 核心 x1 , 内存 : 32G , 硬盘 : 300G |

二、测试工具

测试工具 : JMeter 5.1.1

测试机器 : 4 台

| 测试机器 | 配置 |
|-------------|--------------------------|
| JMeter 节点 1 | CPU : 8 核心 x1 , 内存 : 16G |
| JMeter 节点 2 | CPU : 8 核心 x1 , 内存 : 16G |
| JMeter 节点 3 | CPU : 8 核心 x1 , 内存 : 16G |
| JMeter 节点 4 | CPU : 8 核心 x1 , 内存 : 16G |

三、测试数据与策略

3.1 测试数据

- (1) 用户数：20 万
- (2) 报表数：1 张
- (3) 权限数据：1 万
- (4) JMeter 开启线程数量：250/节点

3.2 测试策略

每个 JMeter 线程执行步骤：

- (1) 无 Cookie 请求报表
- (2) 用户认证
- (3) 权限判断
- (4) 响应报表

四、测试结果

| | JMeter 节点 1 | JMeter 节点 2 | JMeter 节点 3 | JMeter 节点 4 |
|--------|-------------|-------------|-------------|-------------|
| 请求数量 | 10 万 | 10 万 | 10 万 | 10 万 |
| 平均响应时间 | 1.2 秒 | 1.2 秒 | 1.3 秒 | 1.2 秒 |
| 最小响应时间 | 0.03 秒 | 0.06 秒 | 0.004 秒 | 0.03 秒 |
| 最大响应时间 | 260 秒 | 260 秒 | 260 秒 | 260 秒 |
| 错误率 | 0.33% | 0.29% | 0.59% | 0.33% |
| TPS | 193/秒 | 196/秒 | 170/秒 | 193/秒 |

| | | | | |
|----|--------|--------|--------|--------|
| 吞吐 | 146M/秒 | 146M/秒 | 145M/秒 | 146M/秒 |
|----|--------|--------|--------|--------|

View Report Request.jmx (C:\soft\maco\View Report Request.jmx) - Apache JMeter (5.1.1 r1855137)

Summary Report

Name: Summary Report

Comments:

-Write results to file / Read from file

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

| Label | # Samples | Average | Min | Max | Std. Dev. | Error % | Throughput | Received K... | Sent KB/sec | Avg. Bytes |
|--------------|-----------|---------|-----|--------|-----------|---------|------------|---------------|-------------|------------|
| View Repo... | 105276 | 1291 | 32 | 280361 | 2162.81 | 0.33% | 193.3/sec | 27612.32 | 39.74 | 146279.9 |
| TOTAL | 105276 | 1291 | 32 | 280361 | 2162.81 | 0.33% | 193.3/sec | 27612.32 | 39.74 | 146279.9 |

Include group name in label? Save Table Header

Thread Group.jmx (D:\soft\maco\Thread Group.jmx) - Apache JMeter (5.1.1 r1855137)

Summary Report

Name: Summary Report

Comments:

-Write results to file / Read from file

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

| Label | # Samples | Average | Min | Max | Std. Dev. | Error % | Throughput | Received KB/... | Sent KB/sec | Avg. Bytes |
|-----------------|-----------|---------|-----|--------|-----------|---------|------------|-----------------|-------------|------------|
| View Report ... | 101800 | 1392 | 4 | 178412 | 2409.76 | 0.59% | 170.2/sec | 24244.19 | 34.40 | 145893.8 |
| TOTAL | 101800 | 1392 | 4 | 178412 | 2409.76 | 0.59% | 170.2/sec | 24244.19 | 34.40 | 145893.8 |

激活 Windows
转到“控制面板”中的“系统”以激活 Windows

Thread Group.jmx (C:\maco\Thread Group.jmx) - Apache JMeter (5.1.1 r1855137)

File Edit Search Run Options Tools Help

Test Plan
 Thread Group
 View Report Request
 Summary Report
 View Results in Table
 View Results Tree
 Graph Results
 Aggregate Report

Summary Report

Name: Summary Report

Comments:

- Write results to file / Read from file -

Filename Browse... LogDisplay Only: Errors Successes Configure

| Label | # Samples | Average | Min | Max | Std. Dev. | Error % | Throughput | Received K... | Sent KB/sec | Avg. Bytes |
|--------------|-----------|---------|-----|--------|-----------|---------|------------|---------------|-------------|------------|
| View Repo... | 107507 | 1270 | 68 | 106794 | 1988.82 | 0.29% | 196.6/sec | 28101.18 | 39.84 | 146357.7 |
| TOTAL | 107507 | 1270 | 68 | 106794 | 1988.82 | 0.29% | 196.6/sec | 28101.18 | 39.84 | 146357.7 |

Include group name in label? Save Table Header

View Report Request.jmx (C:\son\maco\view Report Request.jmx) - Apache JMeter (5.1.1 r1855137)

File Edit Search Run Options Tools Help

Test Plan
 Thread Group
 View Report Request
 View Results in Table
 Summary Report
 View Results in Table
 View Results Tree

Summary Report

Name: Summary Report

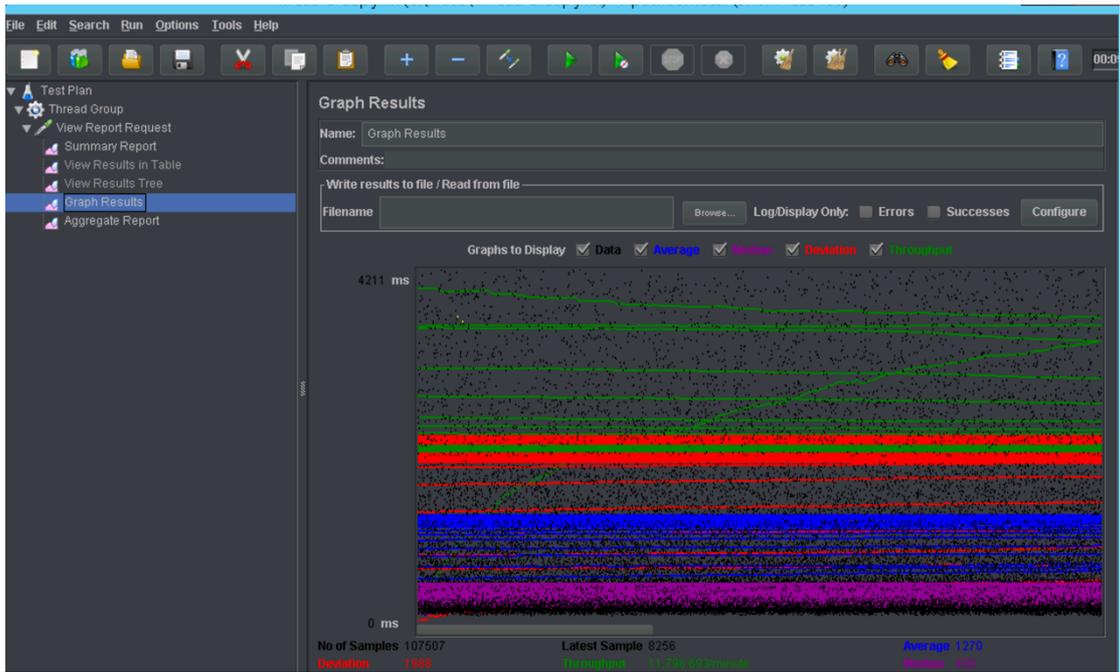
Comments:

- Write results to file / Read from file -

Filename Browse... LogDisplay Only: Errors Successes Configure

| Label | # Samples | Average | Min | Max | Std. Dev. | Error % | Throughput | Received K... | Sent KB/sec | Avg. Bytes |
|--------------|-----------|---------|-----|--------|-----------|---------|------------|---------------|-------------|------------|
| View Repo... | 105276 | 1291 | 32 | 260361 | 2162.81 | 0.33% | 193.3/sec | 27612.32 | 39.74 | 146279.9 |
| TOTAL | 105276 | 1291 | 32 | 260361 | 2162.81 | 0.33% | 193.3/sec | 27612.32 | 39.74 | 146279.9 |

Include group name in label? Save Table Header



```

top - 15:53:36 up 1 day, 23:39, 3 users, load average: 0.31, 0.41, 0.49
Tasks: 324 total, 1 running, 323 sleeping, 0 stopped, 0 zombie
%Cpu(s): 1.2 us, 3.5 sy, 0.0 ni, 89.1 id, 0.0 wa, 0.0 hi, 6.2 si, 0.0 st
KiB Mem : 32781552 total, 26947284 free, 1067028 used, 4767240 buff/cache
KiB Swap: 8257532 total, 8257532 free, 0 used, 31116396 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM     TIME+ COMMAND
 17084 nobody    20   0  98676   9040  1128  S   6.0   0.0   11:07.03 nginx
 17085 nobody    20   0  94624   10648  1132  S   5.6   0.0   11:05.62 nginx
 17083 nobody    20   0  94752   9056   1128  S   5.3   0.0   10:24.14 nginx
 17078 nobody    20   0  88300   8648   1132  S   5.0   0.0    9:17.08 nginx
 17086 nobody    20   0  87956   9760   1128  S   4.7   0.0    9:29.18 nginx
 17082 nobody    20   0  80388   7692   1128  S   3.7   0.0    7:43.92 nginx
 17081 nobody    20   0  71032   7852   1128  S   3.3   0.0    6:06.79 nginx
 17080 nobody    20   0  60964   6556   1128  S   2.3   0.0    4:26.58 nginx
 1612 root       20   0  676164 24900 12712  S   1.3  0.1   4:28.72 sdsrvd
 17077 nobody    20   0  38356   5796   1128  S   1.3   0.0    2:17.80 nginx
 17079 nobody    20   0  45800   6380   1128  S   1.3   0.0    3:12.59 nginx
 909 avahi      20   0  30492   2068   1500  S   0.7   0.0    8:42.75 avahi-daemon
 913 root      20   0   6516    668    556  S   0.7   0.0    1:55.24 rngd
 17076 nobody    20   0  32584   4076   1128  S   0.7   0.0    1:37.75 nginx
 23 root      20   0     0     0     0  S   0.3   0.0    0:06.58 ksoftirqd/3
 1518 root     20   0  514524 5052   1844  S   0.3   0.0    9:46.80 sdmonitor
 17071 nobody    20   0  25744   2184   1080  S   0.3   0.0    0:37.41 nginx
 17073 nobody    20   0  26268   2456   1128  S   0.3   0.0    0:47.31 nginx
 17074 nobody    20   0  25816   2816   1128  S   0.3   0.0    0:55.14 nginx
 17075 nobody    20   0  28956   3600   1128  S   0.3   0.0    1:10.51 nginx
 1 root     20   0 191328 4372   2528  S   0.0   0.0    0:04.00 systemd
 2 root     20   0     0     0     0  S   0.0   0.0    0:00.02 kthreadd
 3 root     20   0     0     0     0  S   0.0   0.0    0:06.26 ksoftirqd/0
 5 root     20  -0     0     0     0  S   0.0   0.0    0:00.00 kworker/0:0H
 7 root     20   0     0     0     0  S   0.0   0.0    0:00.00 migration/0

```

```

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 8
On-line CPU(s) list: 0-7
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 2
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6142 CPU @ 2.60GHz
Stepping: 4
CPU MHz: 2592.767
BogoMIPS: 5187.81
Hypervisor vendor: VMware
Virtualization type: full
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s): 0-7
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse3
2 ss ht syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts nopl xtopology tsc_re
i pclmulqdq ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsav
ahf_lm abm 3dnowprefetch fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 invpcid rtm mpx avx512f

```

```

CONTRIBUTING  dump.pyd  MANIFESTO  Fun.sh  Funtest-sentinel  stop.sh  utils
[root@ssidcmq-redistest redis]# lscpu
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 8
On-line CPU(s) list: 0-7
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 2
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6142 CPU @ 2.60GHz
Stepping: 4
CPU MHz: 2592.767
BogoMIPS: 5187.81
Hypervisor vendor: VMware
Virtualization type: full
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s): 0-7
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush d
2 ss ht syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts nopl xtopology tsc_reliable nons
i pclmulqdq ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c
ahf_lm abm 3dnowprefetch fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 invpcid rtm mpx avx512f avx512dq rd
shopt clwb avx512cd avx512bw avx512vl xsaveopt xsavec arat
[root@ssidcmq-redistest redis]# 15792:M 29 Aug 2019 15:11:53.672 * DB loaded from disk: 83.586 seconds
15792:M 29 Aug 2019 15:11:53.672 * Ready to accept connections

```

```
9-Aug-2019 15:11:57.830 INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["ajp-nio-
9-Aug-2019 15:11:57.830 INFO [main] org.apache.catalina.startup.Catalina.start Server startup in 74384 ms
```

```
CYou have mail in /var/spool/mail/root
root@localhost maco]# lscpus
ash: lscpus: command not found...
imilar command is: 'lscpu'
root@localhost maco]# lscpu
architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:             Little Endian
CPU(s):                 8
on-line CPU(s) list:   0-7
Thread(s) per core:    1
Core(s) per socket:    4
Socket(s):              2
NUMA node(s):          1
Vendor ID:              GenuineIntel
CPU family:             6
Model:                  85
Model name:             Intel(R) Xeon(R) Gold 6142 CPU @ 2.60GHz
Stepping:               4
CPU MHz:                2592.449
BogoMIPS:               5187.81
Hypervisor vendor:     VMware
Virtualization type:   full
L1d cache:              32K
L1i cache:              32K
L2 cache:               1024K
L3 cache:               22528K
NUMA node0 CPU(s):     0-7
Vulnerabilities:
  fpu_vme_de_pse_tsc_msr_pae_mce_cx8_apic_sep_mtrr_pge_mca_cmov_pat_pse36_clflush_dts_mmx_fx
  ss_ht_syscall_nx_pdp1gb_rdtscp_lm_constant_tsc_arch_perfmon_pebs_bts_nopl_xtopology_tsc_reliable_nonstop_tsc_e
  pclmuldq_ssse3_fma_cx16_pcid_sse4_1_sse4_2_x2apic_movbe_popcnt_tsc_deadline_timer_aes_xsave_avx_f16c_rdrand_hy
  hf_lm_abm_3dnowprefetch_fsgsbase_tsc_adjust_bmi1_hle_avx2_smep_bmi2_invpcid_rtm_mpx_avx512f_avx512dq_rdseed_adx
  hopt_clwb_avx512cd_avx512bw_avx512vl_xsaveopt_xsavec_arat
```

```
Tasks: 311 total, 2 running, 309 sleeping, 0 stopped, 0 zombie
%Cpu(s): 73.4 us, 2.6 sy, 0.0 ni, 22.0 id, 0.0 wa, 0.0 hi, 1.9 si, 0.0 st
KiB Mem : 32781552 total, 16490604 free, 2558168 used, 13732780 buff/cache
KiB Swap: 8257532 total, 8257532 free, 0 used. 29583056 avail Mem
```

| PID | USER | PR | NI | VIRT | RES | SHR | S | %CPU | %MEM | TIME+ | COMMAND |
|------|-------|----|----|---------|--------|-------|---|-------|------|----------|--------------|
| 2348 | root | 20 | 0 | 33.462g | 1.481g | 14044 | S | 614.6 | 4.7 | 17:14.55 | java |
| 3 | root | 20 | 0 | 0 | 0 | 0 | S | 0.3 | 0.0 | 0:03.78 | ksoftirqd/0 |
| 911 | root | 20 | 0 | 6516 | 668 | 556 | S | 0.3 | 0.0 | 0:49.22 | rngd |
| 914 | avahi | 20 | 0 | 21280 | 2088 | 1520 | S | 0.3 | 0.0 | 10:50.55 | avahi-daemon |

```
top - 15:52:57 up 22:39, 2 users, load average: 4.19, 11.45, 23.13
Tasks: 274 total, 2 running, 271 sleeping, 0 stopped, 1 zombie
%Cpu(s): 33.6 us, 7.8 sy, 0.0 ni, 51.9 id, 3.8 wa, 0.0 hi, 2.8 si, 0.0 st
KiB Mem : 32781552 total, 226916 free, 31853468 used, 701168 buff/cache
KiB Swap: 8257532 total, 2580596 free, 5676936 used. 498552 avail Mem
```

| PID | USER | PR | NI | VIRT | RES | SHR | S | %CPU | %MEM | TIME+ | COMMAND |
|-------|------|----|----|---------|--------|------|---|-------|------|-----------|--------------|
| 13245 | root | 20 | 0 | 11.335g | 5.322g | 3032 | S | 260.5 | 17.0 | 688:49.85 | mongod |
| 22823 | root | 20 | 0 | 26.047g | 0.023t | 368 | D | 59.1 | 76.0 | 2:02.68 | redis-server |
| 22187 | root | 20 | 0 | 26.047g | 0.023t | 868 | R | 21.6 | 76.7 | 2:05.64 | redis-server |
| 62 | root | 20 | 0 | 0 | 0 | 0 | D | 11.0 | 0.0 | 9:20.10 | kswapd0 |
| 19861 | root | 20 | 0 | 0 | 0 | 0 | S | 0.7 | 0.0 | 0:01.05 | kworker/2:16 |