- Test-fef-1

Number of computer	Partition topic	Replication
1	6	1

```
weston@ubuntu:~/桌面/kafka_2.11-2.0.1$ bin/kafka-topics.sh --zookeeper localhost:2181 --describe
Topic:test-ref-1        PartitionCount:6        ReplicationFactor:1     Configs:
        Topic: test-ref-1       Partition: 0    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-1       Partition: 1    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-1       Partition: 2    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-1       Partition: 3    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-1       Partition: 4    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-1       Partition: 5    Leader: 0       Replicas: 0     Isr: 0
```

- Test-fef-2

Number of computer	Partition topic	Replication
1	10	1

```
Topic:test-ref-2        PartitionCount:10       ReplicationFactor:1     Configs:
        Topic: test-ref-2       Partition: 0    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 1    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 2    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 3    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 4    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 5    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 6    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 7    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 8    Leader: 0       Replicas: 0     Isr: 0
        Topic: test-ref-2       Partition: 9    Leader: 0       Replicas: 0     Isr: 0
```

- 分析 1

Throuput	所测机器	Record size	Records number
无限制	Test-ref-1	1024MB	1,000,000

```
weston@ubuntu:~/桌面/kafka_2.11-2.0.1$ bin/kafka-producer-perf-test.sh --topic test-ref-1 --num-records 10000
00 --record-size 1024 --throughput -1 --producer.config ./config/producer.properties
71044 records sent, 13259.4 records/sec (12.95 MB/sec), 862.1 ms avg latency, 3307.0 max latency.
222750 records sent, 44550.0 records/sec (43.51 MB/sec), 1046.3 ms avg latency, 4124.0 max latency.
168090 records sent, 33069.1 records/sec (32.29 MB/sec), 868.8 ms avg latency, 1443.0 max latency.
172020 records sent, 34404.0 records/sec (33.60 MB/sec), 928.2 ms avg latency, 2710.0 max latency.
170280 records sent, 34001.6 records/sec (33.20 MB/sec), 894.7 ms avg latency, 1347.0 max latency.
155610 records sent, 31122.0 records/sec (30.39 MB/sec), 1021.2 ms avg latency, 1795.0 max latency.
1000000 records sent, 32282.015689 records/sec (31.53 MB/sec), 928.46 ms avg latency, 4124.00 ms max latency,
 808 ms 50th, 2171 ms 95th, 4006 ms 99th, 4108 ms 99.9th.
```

可以看到最高速度又达到了 43.51MB/sec，而且平均延迟集中在 1000-4000

左右，这可能是因为在只有一个核，4GB 内存的虚拟机中运行六个 topic。

- 分析 2

Throuput	所测机器	Record size	Records number
无限制	Test-ref-2	1024MB	1,000,000

```
weston@ubuntu:~/桌面/kafka_2.11-2.0.1$ bin/kafka-producer-perf-test.sh --topic test-ref-2 --num-records 10000
00 --record-size 1024 --throughput -1 --producer.config ./config/producer.properties
171036 records sent, 34186.7 records/sec (33.39 MB/sec), 647.6 ms avg latency, 1184.0 max latency.
240600 records sent, 48120.0 records/sec (46.99 MB/sec), 661.3 ms avg latency, 1133.0 max latency.
216300 records sent, 43225.4 records/sec (42.21 MB/sec), 716.0 ms avg latency, 1797.0 max latency.
169350 records sent, 33601.2 records/sec (32.81 MB/sec), 923.3 ms avg latency, 2991.0 max latency.
1000000 records sent, 39885.130823 records/sec (38.95 MB/sec), 737.51 ms avg latency, 2991.00 ms max latency,
 616 ms 50th, 1594 ms 95th, 2811 ms 99th, 2983 ms 99.9th.
```

可以看到平均延迟、最大延迟、吞吐量相比分析 1 都上升了许多。

● 分析 3

Throuput	所测机器	Record size	Records number
10,000	Test-ref-1	1024MB	1,000,000

```
weston@ubuntu:~/桌面/kafka_2.11-2.0.1$ bin/kafka-producer-perf-test.sh --topic test-ref-1 --num-records 100
0000 --record-size 1024 --throughput 10000 --producer.config ./config/producer.properties
50002 records sent, 9998.4 records/sec (9.76 MB/sec), 15.3 ms avg latency, 253.0 max latency.
50030 records sent, 10004.0 records/sec (9.77 MB/sec), 1.0 ms avg latency, 20.0 max latency.
50030 records sent, 10006.0 records/sec (9.77 MB/sec), 1.3 ms avg latency, 35.0 max latency.
50010 records sent, 9996.0 records/sec (9.76 MB/sec), 3.8 ms avg latency, 42.0 max latency.
50080 records sent, 10012.0 records/sec (9.78 MB/sec), 748.1 ms avg latency, 2240.0 max latency.
50020 records sent, 10004.0 records/sec (9.77 MB/sec), 1.5 ms avg latency, 48.0 max latency.
50020 records sent, 10004.0 records/sec (9.77 MB/sec), 1.1 ms avg latency, 16.0 max latency.
50030 records sent, 10002.0 records/sec (9.77 MB/sec), 38.1 ms avg latency, 576.0 max latency.
50027 records sent, 10001.4 records/sec (9.77 MB/sec), 4.5 ms avg latency, 166.0 max latency.
50053 records sent, 10006.6 records/sec (9.77 MB/sec), 0.9 ms avg latency, 8.0 max latency.
50060 records sent, 10010.0 records/sec (9.78 MB/sec), 0.9 ms avg latency, 10.0 max latency.
50040 records sent, 10002.0 records/sec (9.77 MB/sec), 0.9 ms avg latency, 9.0 max latency.
50050 records sent, 10006.0 records/sec (9.77 MB/sec), 11.6 ms avg latency, 288.0 max latency.
50009 records sent, 10001.8 records/sec (9.77 MB/sec), 95.1 ms avg latency, 896.0 max latency.
50051 records sent, 10008.2 records/sec (9.77 MB/sec), 0.9 ms avg latency, 9.0 max latency.
50020 records sent, 10004.0 records/sec (9.77 MB/sec), 0.9 ms avg latency, 7.0 max latency.
50010 records sent, 10002.0 records/sec (9.77 MB/sec), 8.3 ms avg latency, 241.0 max latency.
48530 records sent, 9661.6 records/sec (9.44 MB/sec), 33.1 ms avg latency, 447.0 max latency.
51750 records sent, 10343.8 records/sec (10.10 MB/sec), 2.4 ms avg latency, 54.0 max latency.
1000000 records sent, 9998.400256 records/sec (9.76 MB/sec), 48.53 ms avg latency, 2240.00 ms max latency,
1 ms 50th, 214 ms 95th, 1427 ms 99th, 2201 ms 99.9th.
```

可以看到平均延迟和最大延迟都有了大幅下降，大约下降了一百倍。

● 分析 4

Throuput	所测机器	Record size	Records number
10,000	Test-ref-1	258MB	1,000,000

```
weston@ubuntu:~/桌面/kafka_2.11-2.0.1$ bin/kafka-producer-perf-test.sh --topic test-ref-1 --num-records
1000000 --record-size 258 --throughput 10000 --producer.config ./config/producer.properties
49992 records sent, 9994.4 records/sec (2.46 MB/sec), 3.4 ms avg latency, 225.0 max latency.
50040 records sent, 10008.0 records/sec (2.46 MB/sec), 0.8 ms avg latency, 9.0 max latency.
50010 records sent, 10002.0 records/sec (2.46 MB/sec), 0.7 ms avg latency, 7.0 max latency.
50040 records sent, 10004.0 records/sec (2.46 MB/sec), 1.0 ms avg latency, 24.0 max latency.
50019 records sent, 10003.8 records/sec (2.46 MB/sec), 0.8 ms avg latency, 24.0 max latency.
50031 records sent, 10002.2 records/sec (2.46 MB/sec), 0.8 ms avg latency, 6.0 max latency.
50020 records sent, 10002.0 records/sec (2.46 MB/sec), 7.4 ms avg latency, 329.0 max latency.
50020 records sent, 10002.0 records/sec (2.46 MB/sec), 0.9 ms avg latency, 17.0 max latency.
50030 records sent, 10004.0 records/sec (2.46 MB/sec), 0.9 ms avg latency, 13.0 max latency.
50050 records sent, 10008.0 records/sec (2.46 MB/sec), 0.7 ms avg latency, 10.0 max latency.
50010 records sent, 10002.0 records/sec (2.46 MB/sec), 0.9 ms avg latency, 34.0 max latency.
50060 records sent, 10010.0 records/sec (2.46 MB/sec), 1.1 ms avg latency, 32.0 max latency.
50070 records sent, 10012.0 records/sec (2.46 MB/sec), 14.5 ms avg latency, 324.0 max latency.
50020 records sent, 10002.0 records/sec (2.46 MB/sec), 1.0 ms avg latency, 38.0 max latency.
50070 records sent, 10010.0 records/sec (2.46 MB/sec), 0.8 ms avg latency, 20.0 max latency.
50030 records sent, 10004.0 records/sec (2.46 MB/sec), 0.9 ms avg latency, 37.0 max latency.
50020 records sent, 10002.0 records/sec (2.46 MB/sec), 0.6 ms avg latency, 12.0 max latency.
50030 records sent, 10002.0 records/sec (2.46 MB/sec), 0.7 ms avg latency, 13.0 max latency.
50020 records sent, 10000.0 records/sec (2.46 MB/sec), 8.6 ms avg latency, 255.0 max latency.
1000000 records sent, 9997.900441 records/sec (2.46 MB/sec), 2.37 ms avg latency, 329.00 ms max latency,
 1 ms 50th, 2 ms 95th, 39 ms 99th, 258 ms 99.9th.
```

可以看到延迟又大幅下降，可以知道调节 record size 和 throughput 对延迟

的影响是很大的。

● 分析 5

Throuput	所测机器	Record size	Records number
无限制	Test-ref-1	258MB	1,000,000

```
weston@ubuntu:~/桌面/kafka_2.11-2.0.1$ bin/kafka-producer-perf-test.sh --topic test-re
f-1 --num-records 1000000 --record-size 258 --throughput -1 --producer.config ./config
/producer.properties
505576 records sent, 100352.5 records/sec (24.69 MB/sec), 547.5 ms avg latency, 1177.0
 max latency.
1000000 records sent, 118231.260345 records/sec (29.09 MB/sec), 735.05 ms avg latency,
 1659.00 ms max latency, 656 ms 50th, 1353 ms 95th, 1645 ms 99th, 1651 ms 99.9th.
```

在将 throuput 调到无限制之后，虽然速度有所上升，但是延迟也有大幅上升。