Benchmark Test For Caffeine vs Concurrent HashMap

KA Owned by Kashan Asim •••
Just a moment ago • 1 min read • ⤴ See how many people viewed this page

Estimated read time

```java
1   package com.dust.corp.cache.benchmark;
2
3   import com.github.benmanes.caffeine.cache.Cache;
4   import com.github.benmanes.caffeine.cache.Caffeine;
5   import org.openjdk.jmh.annotations.*;
6
7   import java.util.Map;
8   import java.util.concurrent.ConcurrentHashMap;
9   import java.util.concurrent.TimeUnit;
10
11
12  @BenchmarkMode(Mode.Throughput) // Measures how many operations per second
13  @State(Scope.Thread)            // Each thread gets its own state
14  @OutputTimeUnit(TimeUnit.MILLISECONDS)
15  @Threads(4) // Simulate 4 threads
16  @Warmup(iterations = 2)
17  @Measurement(iterations = 5)
18  @Fork(2)
19  public class CacheBenchmark {
20
21      private Map<String, String> concurrentHashMap;
22      private Cache<String, String> caffeineCache;
23
24      @Param({"100", "1000", "10000"}) // Varying data sizes
25      private int dataSize;
26
27      @Setup
28      public void setup() {
29          // Initialize ConcurrentHashMap
30          concurrentHashMap = new ConcurrentHashMap<>();
31
32          // Initialize Caffeine Cache
33          caffeineCache = Caffeine.newBuilder()
34                  .maximumSize(10_000)
35                  .build();
36
37          // Populate data
38          for (int i = 0; i < dataSize; i++) {
39              String key = "key" + i;
40              String value = "value" + i;
41              concurrentHashMap.put(key, value);
42              caffeineCache.put(key, value);
43          }
44      }
45
46      @Benchmark
47      public String testConcurrentHashMapGet() {
48          return concurrentHashMap.get("key50");
49      }
50
51      @Benchmark
52      public String testCaffeineCacheGet() {
```

```
53            return caffeineCache.getIfPresent("key50");
54        }
55
56        @Benchmark
57        public void testConcurrentHashMapPut() {
58            concurrentHashMap.put("newKey", "newValue");
59        }
60
61        @Benchmark
62        public void testCaffeineCachePut() {
63            caffeineCache.put("newKey", "newValue");
64        }
65
66        @Benchmark
67        public void testConcurrentHashMapRemove() {
68            concurrentHashMap.remove("key50");
69        }
70
71        @Benchmark
72        public void testCaffeineCacheInvalidate() {
73            caffeineCache.invalidate("key50");
74        }
75    }
76
```

```
1  package com.dust.corp.cache.benchmark;
2
3  public class BenchmarkRunner {
4      public static void main(String[] args) throws Exception {
5          org.openjdk.jmh.Main.main(args);
6      }
7  }
8
```

+ Add label