

web

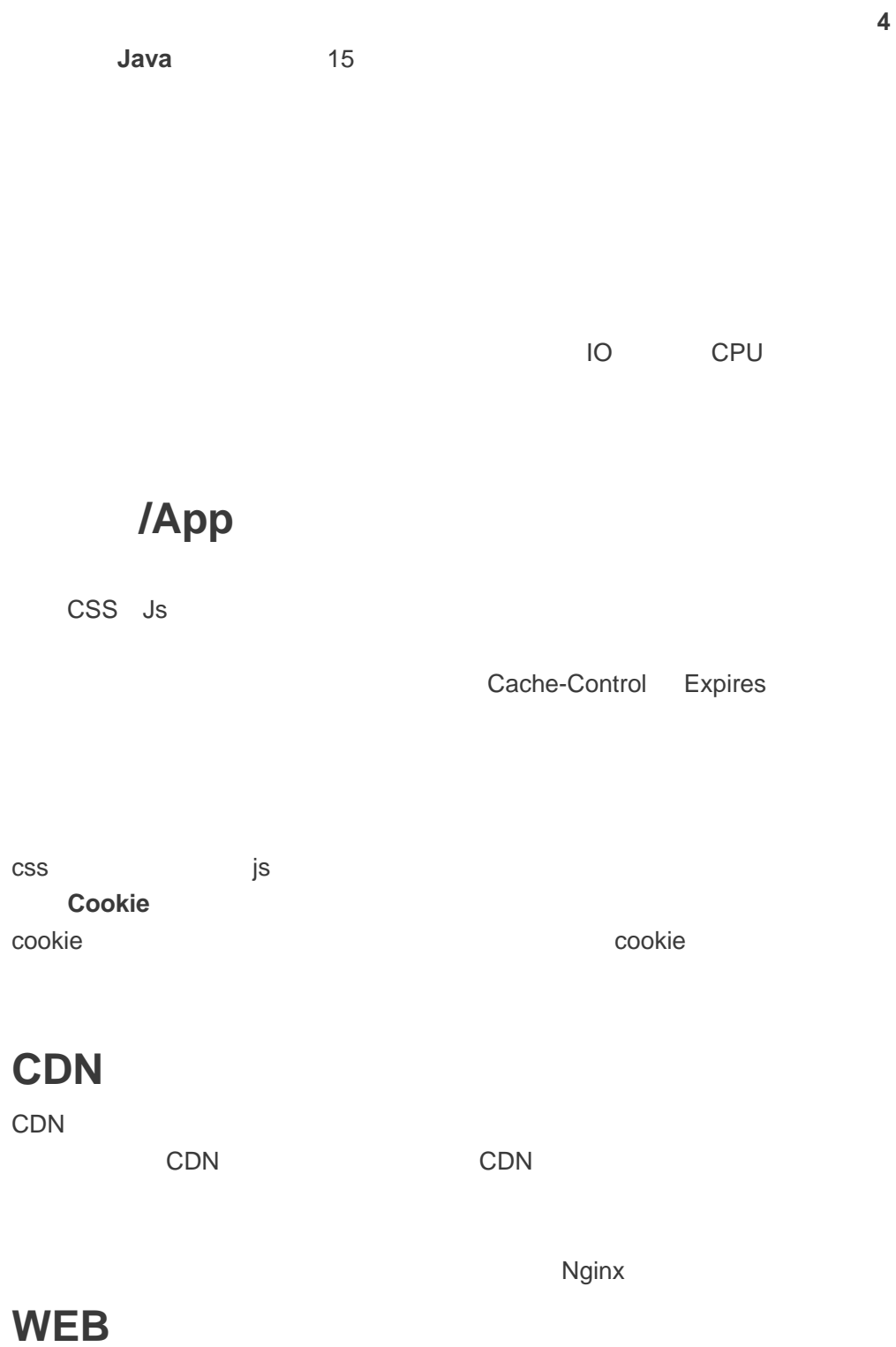
/

		4
	1M	2
SSD	1M	0.3
Redis		0.5
1M		
Java		
	2Kb	1

1000
50~150

5% 15%

()



js css

web

Mark

2:1

1

2

key = 23

key = 23

(key=23

value = null)

1

2

hash

1.

2.

3.

0 232 continuum

232

Node A

Node B

ip

Node A#1½ Node A#2½ Node A#3½ Node B#1½ Node B#2½ Node B#3½

Node A#1½ Node A#2½ Node A#3½

Node A

32

:
:

:
:

1. :

()

jdk BIO

2. :

jdk NIO

3. :

,submit

future.get()

4. :

jdk AIO

Servlet

servlet3

web

tomcat7

jetty8

ArrayList LinkedList

ArrayList

$a_0, a_1, a_2, \dots, a_n$

0

$a[1], a[2], a[3], a[4], a[5], a[6] = (-2, 11, -4, 13, -5, -2)$

20

$a[2], a[3], a[4]$

$O(n^3)$.

$O(n \log n)$.

$O(n)$

n

10000

CPU

JVM

JIT

JVM

java

server

jvm

1/2 XX:ReservedCodeCacheSize=N

—

-XX -UseCounterDecay

-XX CounterHalfLifeTime

-XX:-Inline

325

-

XX:MaxFreqInlinesSzie=N

35

-XX:MaxInlinesSzie=N

JVM

GC

GC

GC

Full GC

1. java GC
2. GC
3. GC
4. GC

GC

GC

GC

1 GC
JVM

gc

2

JVM
GC

GC

GC

GC

GC

1-3

GC

GC

Minor GC 50ms

Minor GC 10

Full GC 1s

Full GC 10 1

3 GC

GC

1 beta

4

5

GC

-Xms5m -Xmx5m -XX:+PrintGCDetails -XX:+UseSerialGC

[DefNew: 1855K->1855K(1856K), 0.0000148 secs][Tenured: 2815K->4095K(4096K), 0.0134819 secs] 4671K

DefNew

1855K->1855K(1856K)

1855K

1855K

1856K

0.0000148 secs

Tenured

2815K->4095K(4096K), 0.0134819 secs

4671K

-XX:+UseParNewGC

[ParNew: 1856K->1856K(1856K), 0.0000107 secs][Tenured: 2890K->4095K(4096K), 0.0121148 secs]

-XX:+ UseParallelGC UseParallelOldGC

[PSYoungGen: 1024K->1022K(1536K)] [ParOldGen: 3783K->3782K(4096K)]

4807K->4804K(5632K),

CMS G1

GC

GC : -verbose:gc, -XX:+PrintGC

GC -XX:+PrintGCDetails, +XX:+PrintGCTimeStamps

-Xlogger:logpath gc -Xlogger:log/gc.log gc.log

log .

gc GC

-XX:+PrintHeapAtGC

-XX +PrintHeapAtGC

Heap

-XX:+TraceClassLoading

-XX:+TraceClassLoading

class

class

-XX:+DisableExplicitGC

System.gc()

-XX:-HeapDumpOnOutOfMemoryError

java.lang.OutOfMemoryError

dump.core

-XX:HeapDumpPath=./java_pid<pid>.hprof java

1.

1. : , ().

1. : , Gbit . ,

1. : 8CPU .

1. : 1.YGC 2. YGC
FGC.

0. : , ,
 , ,
 : , ,
 :
 GC

:
 , , ,

GC

SSD

setFetchSize jdbc

mark

jvm

mark

java