



SPEC® CINT2006 Result

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Dell Inc.

SPECint®2006 = 63.2

PowerEdge R920 (Intel Xeon E7-8893 v2, 3.40 GHz)

SPECint_base2006 = 59.2

CPU2006 license: 55

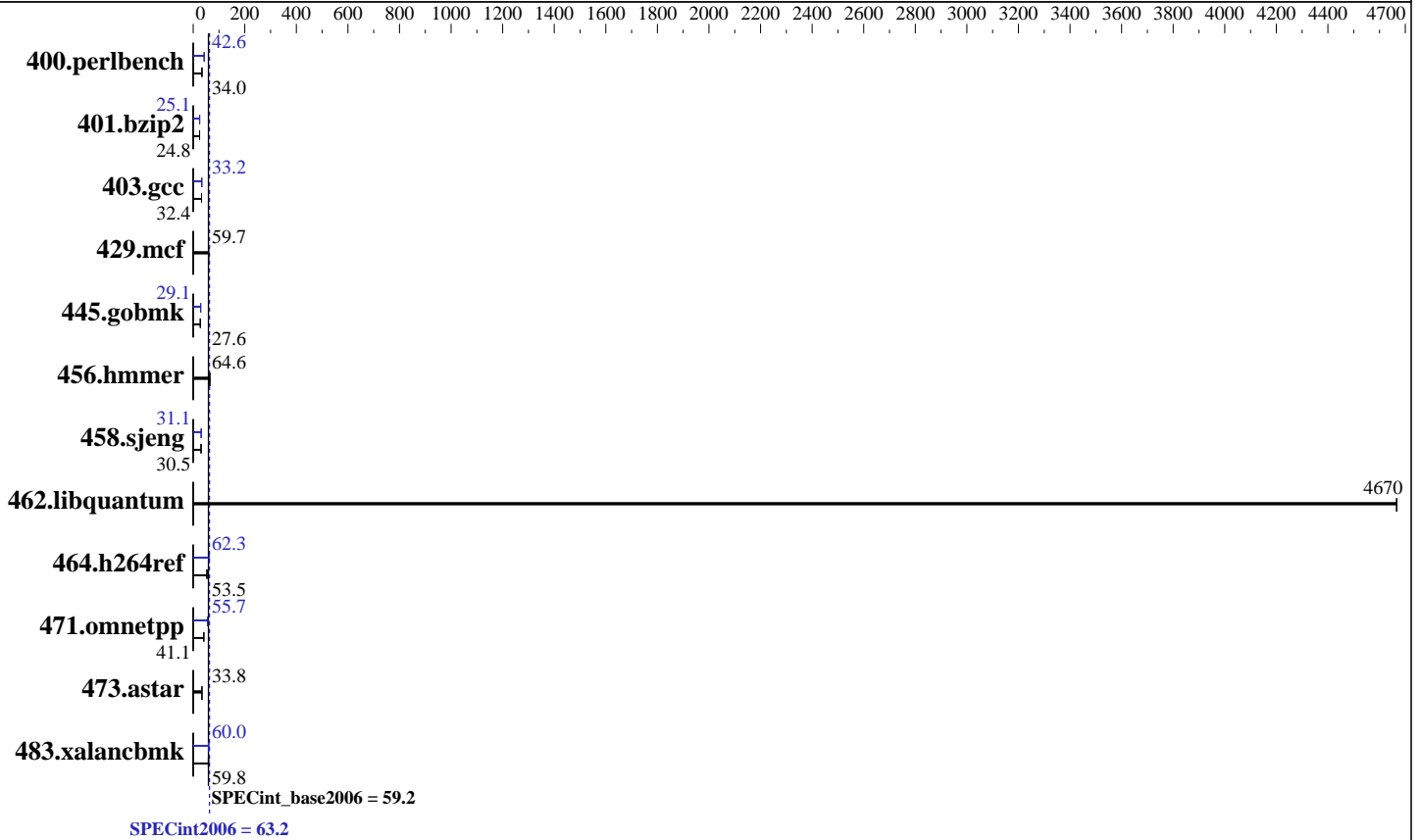
Test date: Feb-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Mar-2014



Hardware

CPU Name: Intel Xeon E7-8893 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip
 CPU(s) orderable: 2,4 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 37.5 MB I+D on chip per chip
 Other Cache: None
 Memory: 1 TB (64 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
 Disk Subsystem: 1 x 400 GB SAS6 SSD
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64)
 3.0.76-0.11-default
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.0



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Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|----------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 288 | 34.0 | 287 | 34.0 | <u>288</u> | <u>34.0</u> | 230 | 42.6 | 229 | 42.7 | <u>229</u> | <u>42.6</u> |
| 401.bzip2 | 389 | 24.8 | <u>389</u> | <u>24.8</u> | 389 | 24.8 | 385 | 25.1 | <u>385</u> | <u>25.1</u> | 385 | 25.1 |
| 403.gcc | 249 | 32.4 | <u>249</u> | <u>32.4</u> | 248 | 32.4 | 242 | 33.2 | <u>242</u> | <u>33.2</u> | 242 | 33.2 |
| 429.mcf | 153 | 59.6 | <u>153</u> | <u>59.7</u> | 153 | 59.7 | 153 | 59.6 | <u>153</u> | <u>59.7</u> | 153 | 59.7 |
| 445.gobmk | <u>380</u> | <u>27.6</u> | 380 | 27.6 | 380 | 27.6 | <u>361</u> | <u>29.1</u> | 360 | 29.1 | 361 | 29.1 |
| 456.hammer | 144 | 64.7 | <u>144</u> | <u>64.6</u> | 146 | 63.9 | 144 | 64.7 | <u>144</u> | <u>64.6</u> | 146 | 63.9 |
| 458.sjeng | 397 | 30.5 | 397 | 30.5 | <u>397</u> | <u>30.5</u> | 389 | 31.1 | <u>389</u> | <u>31.1</u> | 390 | 31.1 |
| 462.libquantum | 4.44 | 4670 | 4.44 | 4670 | <u>4.44</u> | <u>4670</u> | 4.44 | 4670 | 4.44 | 4670 | <u>4.44</u> | <u>4670</u> |
| 464.h264ref | 415 | 53.4 | 414 | 53.5 | <u>414</u> | <u>53.5</u> | 355 | 62.3 | <u>355</u> | <u>62.3</u> | 355 | 62.3 |
| 471.omnetpp | 151 | 41.3 | 152 | 41.0 | <u>152</u> | <u>41.1</u> | 111 | 56.5 | 113 | 55.4 | <u>112</u> | <u>55.7</u> |
| 473.astar | <u>208</u> | <u>33.8</u> | 208 | 33.8 | 207 | 33.8 | <u>208</u> | <u>33.8</u> | 208 | 33.8 | 207 | 33.8 |
| 483.xalancbmk | 118 | 58.5 | <u>115</u> | <u>59.8</u> | 115 | 59.9 | <u>115</u> | <u>60.0</u> | 115 | 59.9 | 115 | 60.0 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS settings:

Virtualization Technology disabled

Execute Disable disabled

Logical Processor disabled

System Profile set to Custom

Memory Patrol Scrub set to disabled

Sysinfo program

/root/Desktop/Performance/ic14.0_Oct17_2013/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191

running on slesperf2 Mon Feb 3 21:01:59 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E7-8893 v2 @ 3.40GHz

4 "physical id"s (chips)

24 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 6

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Platform Notes (Continued)

```

siblings : 6
physical 0: cores 3 4 5 6 10 11
physical 1: cores 3 4 5 6 10 11
physical 2: cores 3 4 5 6 10 11
physical 3: cores 3 4 5 6 10 11
cache size : 38400 KB

```

```

From /proc/meminfo
MemTotal:      1058789108 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3

```

```

uname -a:
Linux slesperf2 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
(ccab990) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Feb 3 20:58 last=S

```

SPEC is set to: /root/Desktop/Performance/ic14.0_Oct17_2013
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext2  365G  190G  174G  53% /

```

```

Additional information from dmidecode:
BIOS Dell Inc. 1.0.4 01/27/2014
Memory:
47x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
11x 00CE04B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
6x 00CE04B300CE M393B2G70CB0-YK0 16 GB 1333 MHz

```

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,scatter"

LD_LIBRARY_PATH = */root/Desktop/Performance/ic14.0_Oct17_2013/libs/32:/root/Desktop/Performance/ic14.0_Oct17_2013/libs/64:/root/Desktop/Performance/ic14.0_Oct17_2013/sh*

OMP_NUM_THREADS = "24"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent_hugepage/enabled

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General Notes (Continued)

runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

401.bzip2: -DSPEC_CPU_LP64

403.gcc: -DSPEC_CPU_LP64

429.mcf: -DSPEC_CPU_LP64

456.hmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

473.astar: -DSPEC_CPU_LP64

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-alloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

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Peak Optimization Flags (Continued)

456.hmmr: basepeak = yes

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.xml>



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