



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 2020

PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)

SPECint_rate_base2006 = 1960

CPU2006 license: 55

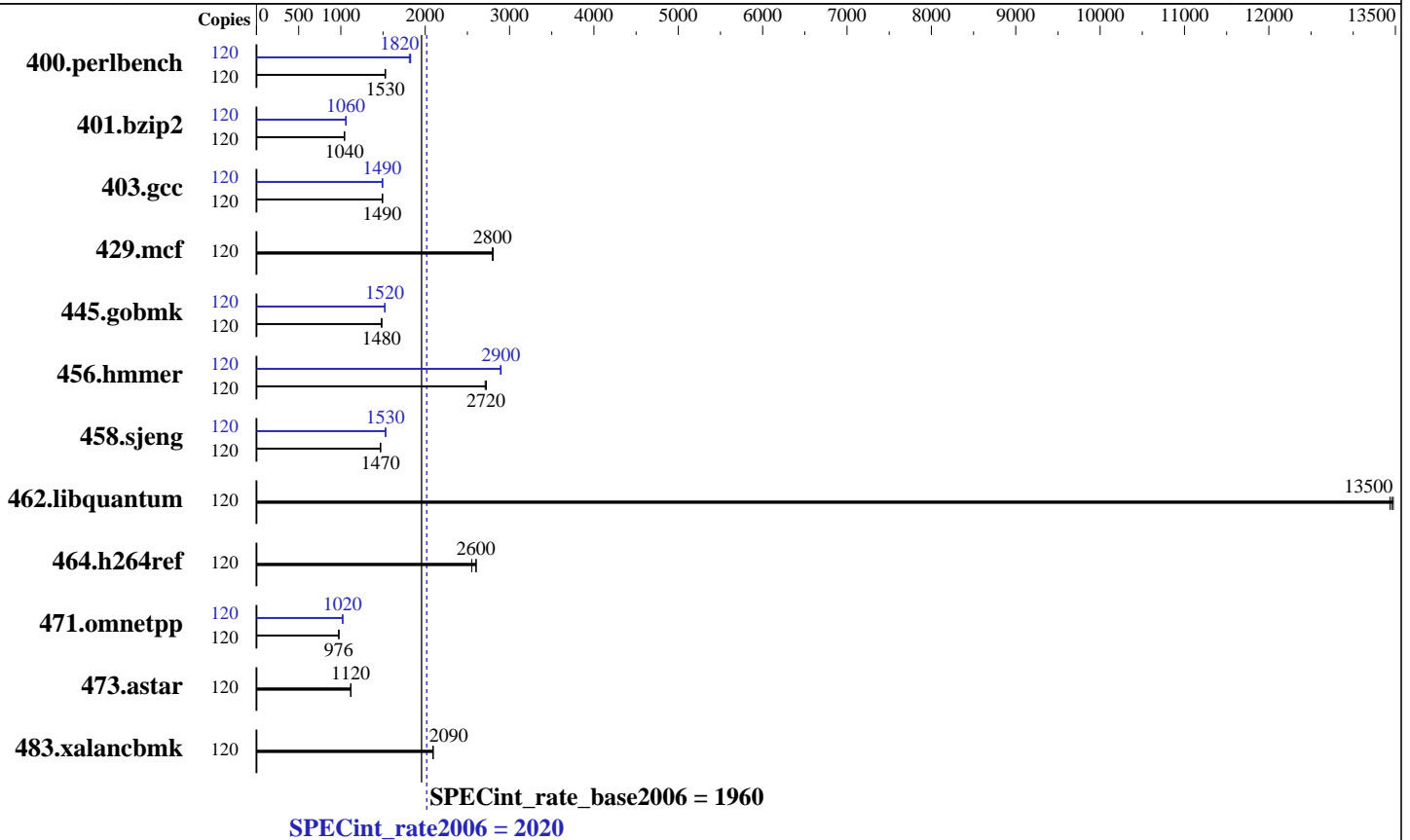
Test date: Jan-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Mar-2014



Hardware

CPU Name: Intel Xeon E7-8880L v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 60 cores, 4 chips, 15 cores/chip, 2 threads/core
 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 (58 x 16 GB 2Rx4 PC3L-12800R-11 + 6 x 16 GB 2Rx4 PC3-14900R-13, 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: No
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.0



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Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	120	769	1520	768	1530	766	1530	120	641	1830	643	1820	647	1810
401.bzip2	120	1110	1040	1109	1040	1112	1040	120	1091	1060	1092	1060	1094	1060
403.gcc	120	648	1490	645	1500	648	1490	120	648	1490	649	1490	645	1500
429.mcf	120	391	2800	391	2800	390	2810	120	391	2800	391	2800	390	2810
445.gobmk	120	850	1480	847	1490	848	1480	120	826	1520	827	1520	828	1520
456.hammer	120	411	2730	413	2710	412	2720	120	387	2890	386	2900	386	2900
458.sjeng	120	988	1470	989	1470	986	1470	120	948	1530	949	1530	949	1530
462.libquantum	120	185	13500	185	13400	185	13500	120	185	13500	185	13400	185	13500
464.h264ref	120	1040	2550	1021	2600	1019	2610	120	1040	2550	1021	2600	1019	2610
471.omnetpp	120	768	976	768	976	769	976	120	734	1020	734	1020	734	1020
473.astar	120	753	1120	752	1120	754	1120	120	753	1120	752	1120	754	1120
483.xalancbmk	120	396	2090	396	2090	395	2090	120	396	2090	396	2090	395	2090

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

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

Platform Notes

```

BIOS settings:
Virtualization Technology disabled
Execute Disable 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 Fri Jan 24 19:30:48 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 E7-8880L v2 @ 2.20GHz
4 "physical id"s (chips)

```

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Platform Notes (Continued)

120 "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 : 15
siblings  : 30
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
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 Jan 23 16:13 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. 1.0.0 12/16/2013
Memory:
41x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
6x 00CE00B300CE M393B2G70CB0-CMA 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)

Regarding the sysinfo display about the memory installed, although the information is accurate, two different types of DIMMs were used in the configuration and it may not be easy to immediately tell the difference. The following has been provided to help make the situation more clear.

DIMMs with `â€œM393B2G70BH0-YK0â€` in the name are 16 GB PC3L-12800R-11 DIMMs
DIMMs with `â€œM393B2G70CB0-CMAâ€` in the name are 16 GB PC3-14900R-13 DIMMs



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General Notes

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

LD_LIBRARY_PATH = */root/Desktop/Performance/icl4.0_Oct17_2013/libs/32:/root/Desktop/Performance/icl4.0_Oct17_2013/libs/64:/root/Desktop/Performance/icl4.0_Oct17_2013/sh*

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

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:

icc -m32

C++ benchmarks:

icpc -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

462.libquantum: -DSPEC_CPU_LINUX

483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

-Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

401.bzip2: -DSPEC_CPU_LP64

456.hmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LINUX

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)
-auto-ilp32

401.bzip2: -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 -auto-ilp32 -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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 -auto-ilp32

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

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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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 21:22:58 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 11 March 2014.