SPEC® CINT2006 Result

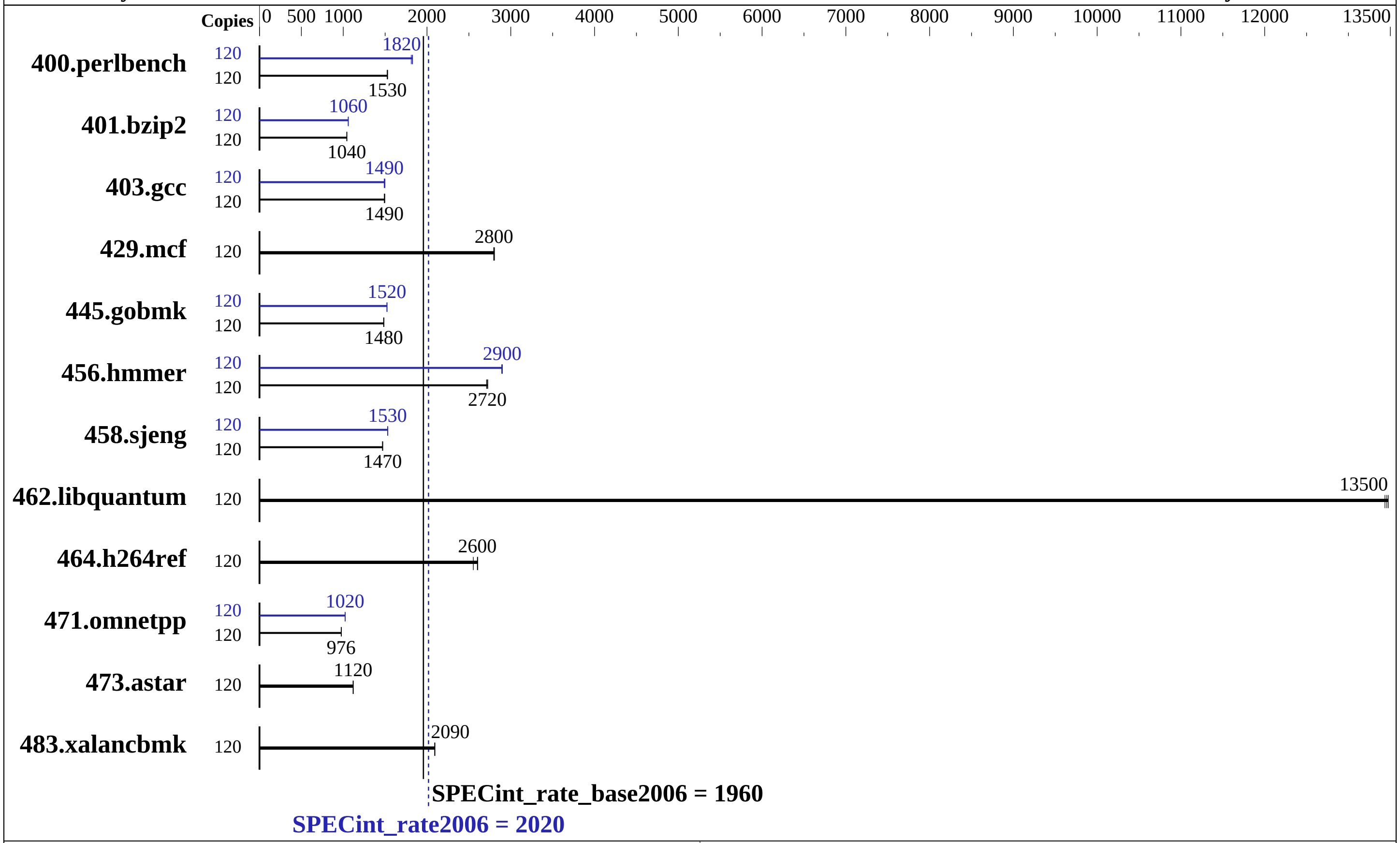
Dell Inc.

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

SPECint®_rate2006 = 2020

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

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.hmmer	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  M393B2G70BH0-YK0â   in the name are 16 GB PC3L-12800R-11 DIMMs
      DIMMs with â  M393B2G70CB0-CMAâ   in the name are 16 GB PC3-14900R-13 DIMMs
```

General Notes

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

 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

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

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