SPEC® CINT2006 Result
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Lenovo Group Limited

Lenovo System x3250 M5
(Intel Xeon E3-1231 v3, 3.40 GHz)

$SPECint^{®}\_rate2006 =$ 216

$SPECint\_rate\_base2006 =$ 210

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Jul-2014

Software Availability: Nov-2013

SPECint_rate_base2006 = 210

SPECint_rate2006 = 216

Hardware

CPU Name:	Intel Xeon E3-1231 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 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:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (4 x 4 GB 2Rx8 PC3-12800U-13)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
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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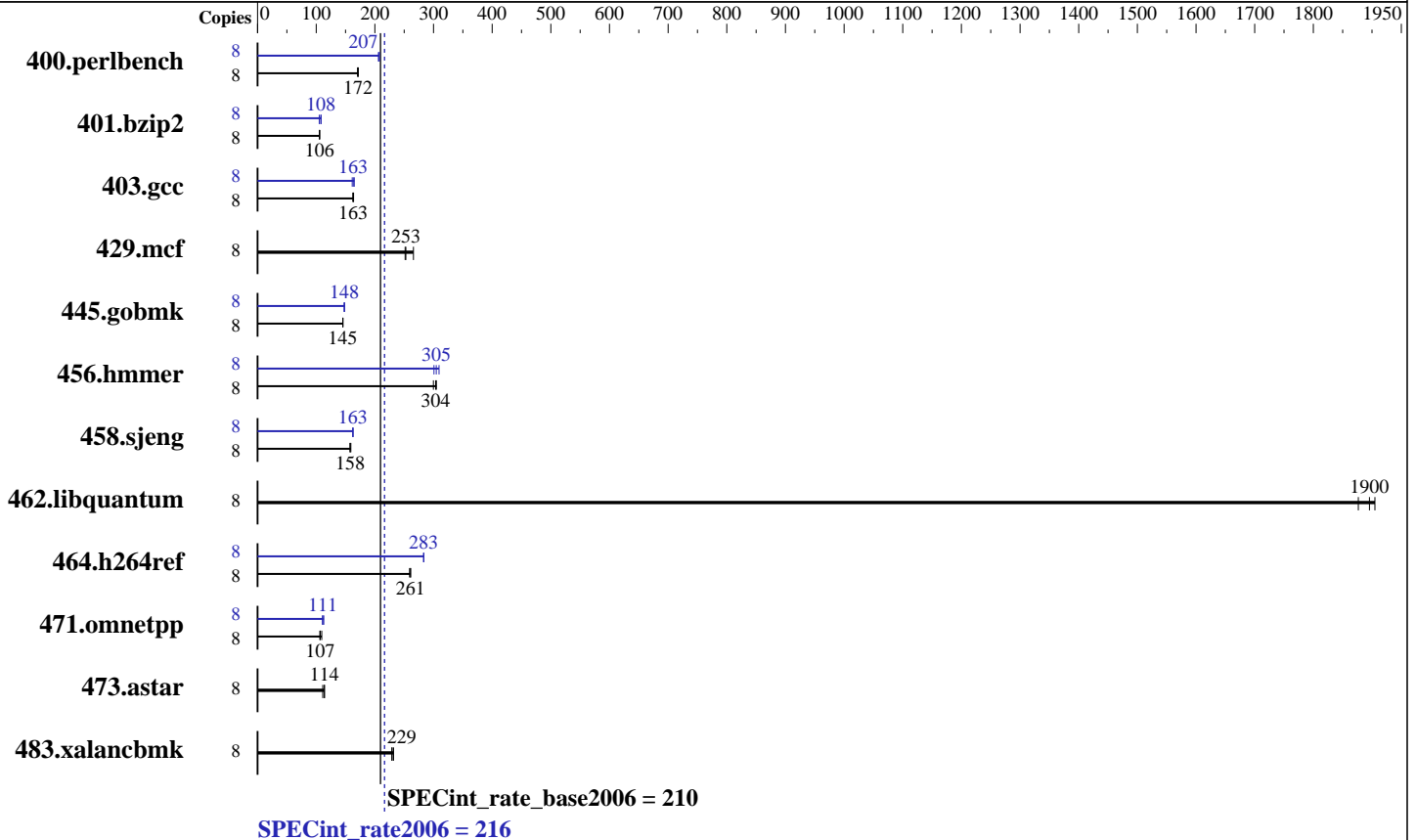|	
CPU2006 license: 9017	**Test date:** Dec-2014
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	**456**	**172**	459	170	456	172	8	379	206	**377**	**207**	377	207
401.bzip2	8	734	105	728	106	**731**	**106**	8	713	108	**716**	**108**	734	105
403.gcc	8	**394**	**163**	397	162	393	164	8	**395**	**163**	391	165	399	161
429.mcf	8	275	266	**289**	**253**	290	252	8	275	266	**289**	**253**	290	252
445.gobmk	8	576	146	**578**	**145**	578	145	8	568	148	566	148	**567**	**148**
456.hmmer	8	249	300	245	305	**246**	**304**	8	241	309	248	301	**245**	**305**
458.sjeng	8	614	158	**613**	**158**	609	159	8	595	163	**595**	**163**	596	162
462.libquantum	8	88.3	1880	87.0	1900	**87.4**	**1900**	8	88.3	1880	87.0	1900	**87.4**	**1900**
464.h264ref	8	679	261	**679**	**261**	683	259	8	625	283	625	283	**625**	**283**
471.omnetpp	8	**468**	**107**	457	109	471	106	8	443	113	**449**	**111**	452	111
473.astar	8	505	111	493	114	**493**	**114**	8	505	111	493	114	**493**	**114**
483.xalancbmk	8	**241**	**229**	241	229	238	232	8	**241**	**229**	241	229	238	232

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

Submit Notes

```
   The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset 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

```
Sysinfo program /home/SPEC_ic14/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Tue Dec 16 23:39:54 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 E3-1231 v3 @ 3.40GHz
      1 "physical id"s (chips)
      8 "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 : 4
      siblings  : 8
```

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Platform Notes (Continued)

```
      physical 0: cores 0 1 2 3
   cache size : 8192 KB

 From /proc/meminfo
   MemTotal:        16165980 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

 /usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.5 (Santiago)

 From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
   Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
   EST 2013 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Dec 16 23:19

 SPEC is set to: /home/SPEC_ic14
   Filesystem                     Type  Size  Used Avail Use% Mounted on
   /dev/mapper/VolGroup-lv_home ext4  860G  4.2G  812G   1% /home

 Additional information from dmidecode:
   BIOS IBM -[JUE115CUS-1.06]- 11/11/2014
   Memory:
   4x Hynix/Hyundai HMT351U7EFR8A-PB 4 GB 1600 MHz 2 rank

 (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/SPEC_ic14/libs/32:/home/SPEC_ic14/libs/64:/home/SPEC_ic14/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/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:
   icc   -m32

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Base Compiler Invocation (Continued)

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:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xCORE-AVX2 -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
```

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
```

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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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div

     429.mcf: basepeak = yes

   445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
               -ansi-alias -opt-mem-layout-trans=3

   456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

   458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

  464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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
```

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Peak Optimization Flags (Continued)

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/IBM-Platform-Flags-V1.2-HSW-A.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/IBM-Platform-Flags-V1.2-HSW-A.xml

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