



# SPEC® CINT2006 Result

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## Lenovo Group Limited

SPECint®\_rate2006 = 224

Lenovo System x3250 M5  
(Intel Xeon E3-1271 v3, 3.60 GHz)

SPECint\_rate\_base2006 = 216

CPU2006 license: 9017

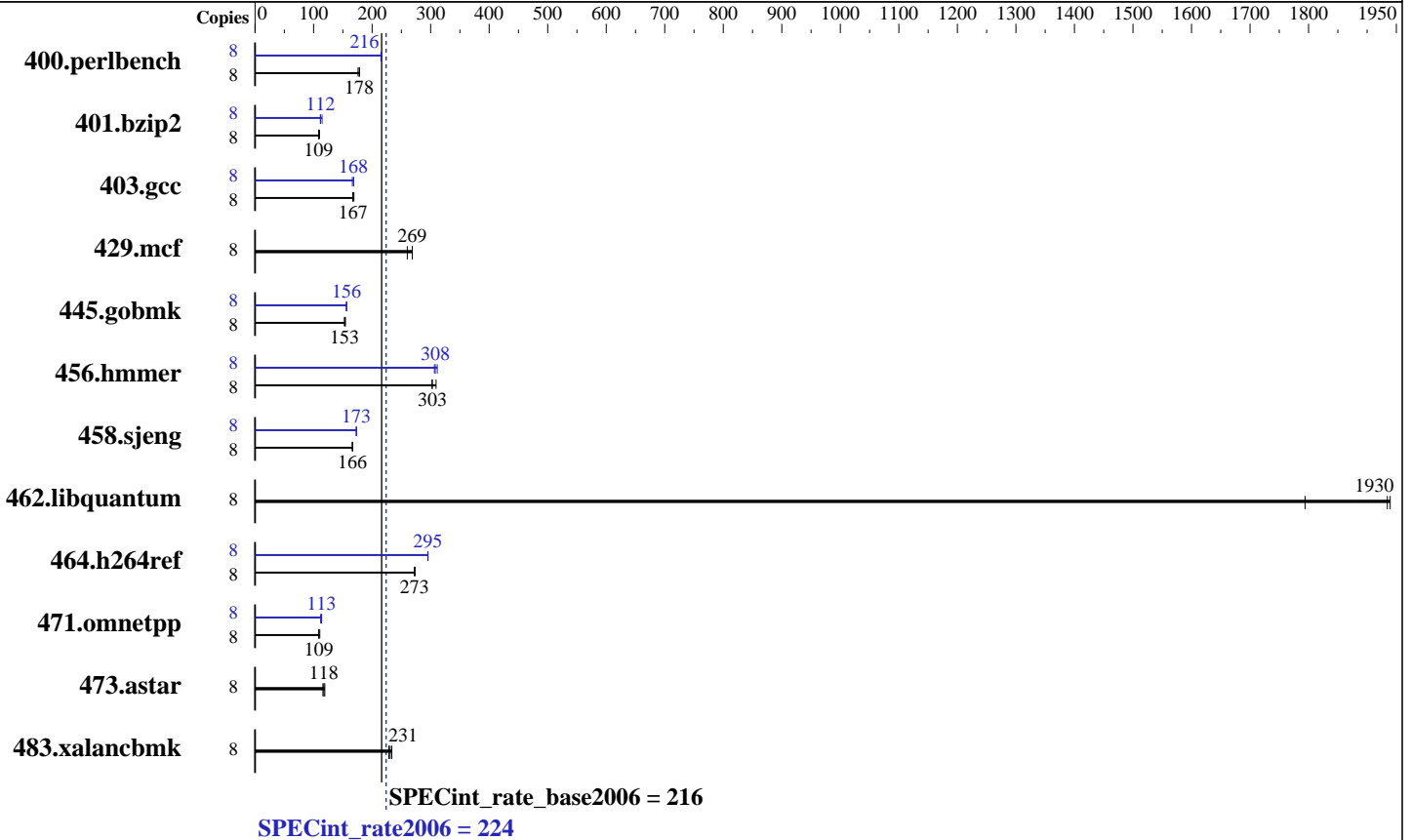
Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Jul-2014

Tested by: Lenovo Group Limited

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E3-1271 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3600  
 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 1000 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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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	438	178	<b><u>439</u></b>	<b><u>178</u></b>	444	176	8	363	215	362	216	<b><u>362</u></b>	<b><u>216</u></b>
401.bzip2	8	700	110	711	109	<b><u>710</u></b>	<b><u>109</u></b>	8	674	115	691	112	<b><u>691</u></b>	<b><u>112</u></b>
403.gcc	8	386	167	381	169	<b><u>385</u></b>	<b><u>167</u></b>	8	<b><u>383</u></b>	<b><u>168</u></b>	382	169	387	166
429.mcf	8	<b><u>272</u></b>	<b><u>269</u></b>	280	260	272	269	8	<b><u>272</u></b>	<b><u>269</u></b>	280	260	272	269
445.gobmk	8	549	153	<b><u>549</u></b>	<b><u>153</u></b>	543	154	8	538	156	<b><u>538</u></b>	<b><u>156</u></b>	535	157
456.hammer	8	241	309	247	302	<b><u>246</u></b>	<b><u>303</u></b>	8	240	311	244	306	<b><u>242</u></b>	<b><u>308</u></b>
458.sjeng	8	<b><u>582</u></b>	<b><u>166</u></b>	581	167	582	166	8	<b><u>559</u></b>	<b><u>173</u></b>	558	173	560	173
462.libquantum	8	85.5	1940	92.4	1790	<b><u>85.7</u></b>	<b><u>1930</u></b>	8	85.5	1940	92.4	1790	<b><u>85.7</u></b>	<b><u>1930</u></b>
464.h264ref	8	<b><u>649</u></b>	<b><u>273</u></b>	650	272	648	273	8	599	296	600	295	<b><u>600</u></b>	<b><u>295</u></b>
471.omnetpp	8	452	111	461	109	<b><u>459</u></b>	<b><u>109</u></b>	8	439	114	<b><u>441</u></b>	<b><u>113</u></b>	446	112
473.astar	8	484	116	471	119	<b><u>478</u></b>	<b><u>118</u></b>	8	484	116	471	119	<b><u>478</u></b>	<b><u>118</u></b>
483.xalancbmk	8	241	229	<b><u>239</u></b>	<b><u>231</u></b>	236	234	8	241	229	<b><u>239</u></b>	<b><u>231</u></b>	236	234

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

BIOS setting:

Operating Mode set to Maximum Performance

Sysinfo program /home/SPEC\_ic14/config/sysinfo.rev6818

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

running on localhost.localdomain Fri Dec 26 19:02:48 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 E3-1271 v3 @ 3.60GHz

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.)

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### Platform Notes (Continued)

```
cpu cores : 4
siblings  : 8
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 26 18:56

SPEC is set to: /home/SPEC\_ic14

```
Filesystem          Type  Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_home ext4  860G   23G  794G   3% /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.xalanbmk: 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/Lenovo-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/Lenovo-Platform-Flags-V1.2-HSW-A.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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