SPEC® CINT2006 Result

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Lenovo Group Limited

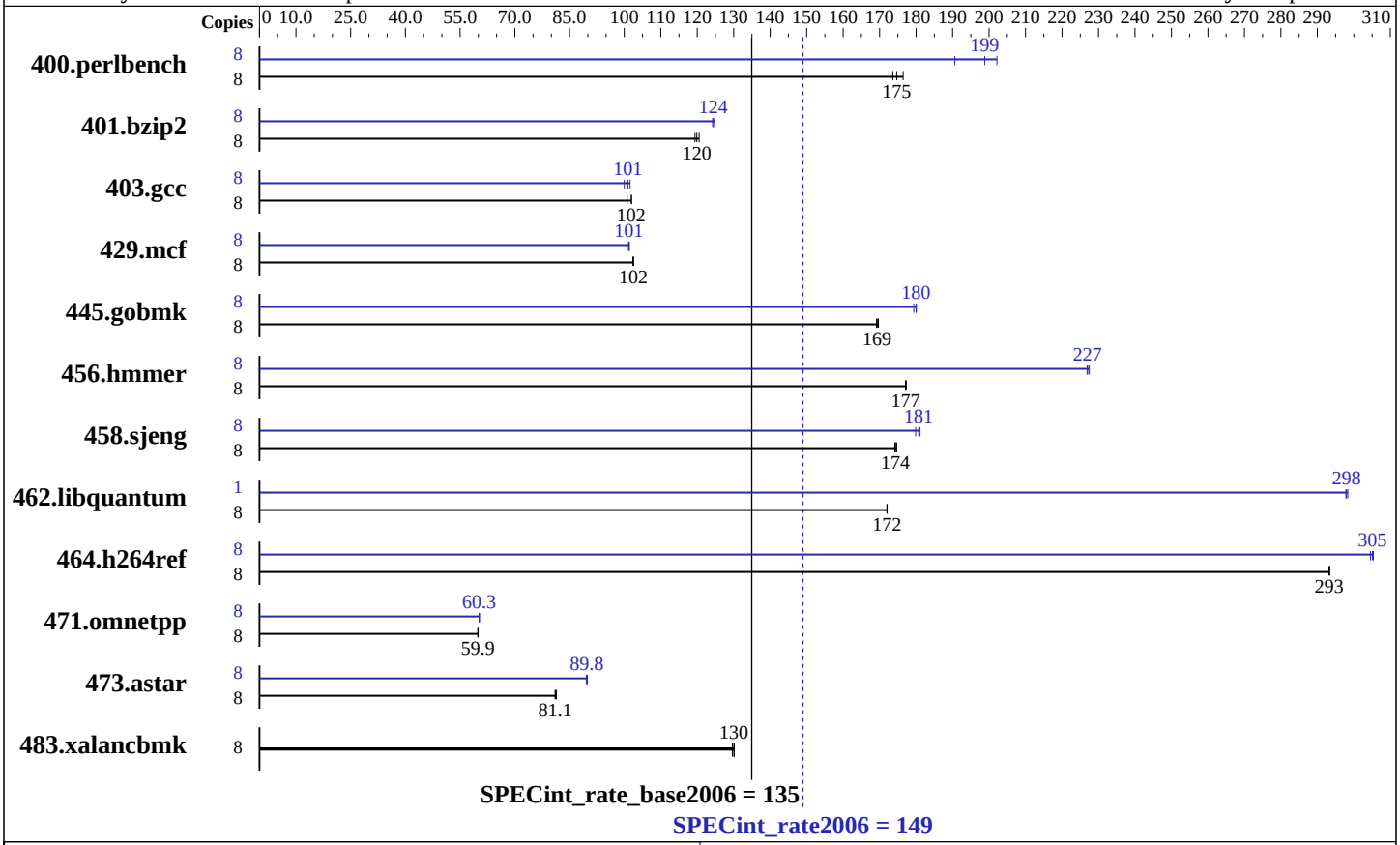
Lenovo ThinkServer RD120(Intel Xeon X5470)

SPECint®_rate2006 = 149

SPECint_rate_base2006 = 135

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: May-2009
Hardware Availability: Apr-2009
Software Availability: Apr-2009



Hardware

CPU Name:	Intel Xeon X5470
CPU Characteristics:	1333MHz system bus
CPU MHz:	3333
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8 x 2GB 2Rx8 PC2 5300F)
Disk Subsystem:	1 x 146 GB, SAS 15K RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SP2 Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20090209 Package ID: l_cproc_b_11.0.081
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.0 Binutils 2.18.50.0.7.20080502

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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	450	174	443	176	**447**	**175**	8	410	191	387	202	**393**	**199**
401.bzip2	8	641	121	647	119	**644**	**120**	8	621	124	619	125	**620**	**124**
403.gcc	8	**632**	**102**	639	101	631	102	8	634	102	644	100	**638**	**101**
429.mcf	8	**712**	**102**	712	103	713	102	8	721	101	720	101	**720**	**101**
445.gobmk	8	495	170	496	169	**496**	**169**	8	466	180	468	179	**466**	**180**
456.hmmer	8	421	177	**421**	**177**	421	177	8	329	227	**329**	**227**	328	227
458.sjeng	8	556	174	554	175	**555**	**174**	8	**536**	**181**	535	181	538	180
462.libquantum	8	**964**	**172**	963	172	964	172	1	**69.5**	**298**	69.6	298	69.4	298
464.h264ref	8	604	293	**604**	**293**	603	293	8	580	305	**580**	**305**	581	305
471.omnetpp	8	835	59.9	**835**	**59.9**	834	59.9	8	**830**	**60.3**	830	60.3	830	60.2
473.astar	8	690	81.4	693	81.1	**693**	**81.1**	8	627	89.6	625	89.9	**625**	**89.8**
483.xalancbmk	8	**424**	**130**	424	130	426	130	8	**424**	**130**	424	130	426	130

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

Submit Notes

```
The config file option 'submit' was used.
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
```

General Notes

```
taskset was used to bind processes to cores except
for 462.libquantum peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/cpu2006/lib -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/Compiler/11.0/081/bin/intel64/icc
-L/opt/intel/Compiler/11.0/081/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/081/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc
-L/opt/intel/Compiler/11.0/081/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/081/ipp/em64t/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

Continued on next page

Peak Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

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

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

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

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -parallel -par-runtime-control -opt-prefetch

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

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/cpu2006/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/cpu2006/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.15.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.15.xml`

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 03:25:19 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 July 2009.