SPEC® CINT2006 Result

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Lenovo Group Limited

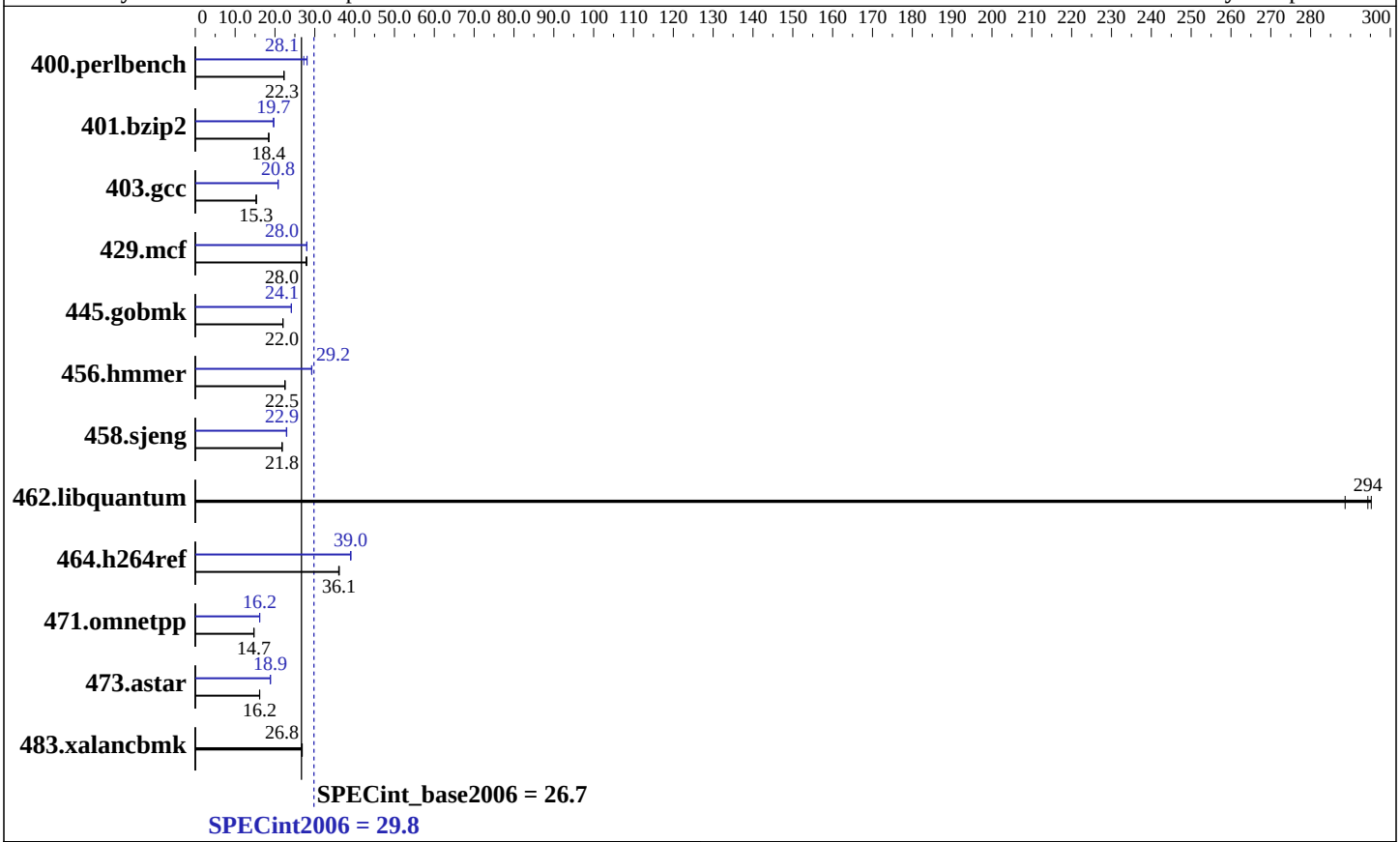
Lenovo ThinkServer TD100x(Intel Xeon X5470)

SPECint®2006 = 29.8

SPECint_base2006 = 26.7

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 20090318 Package ID: l_cproc_b_11.0.083
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 V8.1 Binutils 2.18.50.0.7.20080502

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	439	22.3	439	22.3	**439**	**22.3**	**348**	**28.1**	348	28.1	359	27.2
401.bzip2	524	18.4	**524**	**18.4**	523	18.5	**491**	**19.7**	491	19.6	490	19.7
403.gcc	526	15.3	**526**	**15.3**	525	15.3	388	20.8	387	20.8	**387**	**20.8**
429.mcf	328	27.8	**326**	**28.0**	326	28.0	326	28.0	326	28.0	**326**	**28.0**
445.gobmk	477	22.0	476	22.0	**477**	**22.0**	435	24.1	435	24.1	**435**	**24.1**
456.hmmer	415	22.5	**414**	**22.5**	414	22.5	320	29.2	319	29.3	**319**	**29.2**
458.sjeng	556	21.8	**555**	**21.8**	555	21.8	**529**	**22.9**	527	23.0	529	22.9
462.libquantum	71.8	289	70.2	295	**70.4**	**294**	71.8	289	70.2	295	**70.4**	**294**
464.h264ref	613	36.1	**613**	**36.1**	615	36.0	566	39.1	568	39.0	**567**	**39.0**
471.omnetpp	424	14.7	**425**	**14.7**	426	14.7	**387**	**16.2**	387	16.2	387	16.1
473.astar	434	16.2	435	16.1	**434**	**16.2**	**372**	**18.9**	372	18.9	373	18.8
483.xalancbmk	**258**	**26.8**	257	26.9	258	26.8	**258**	**26.8**	257	26.9	258	26.8

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

General Notes

```
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
Adjacent Cache Line Prefetcher: Enabled
```

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 -parallel -par-runtime-control -opt-prefetch`

Continued on next page

Base Optimization Flags (Continued)

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/11.0/083/bin/intel64/icc -L/opt/intel/Compiler/11.0/083/ipp/em64t/lib -I/opt/intel/Compiler/11.0/083/ipp/em64t/include`

456.hmmer: `/opt/intel/Compiler/11.0/083/bin/intel64/icc -L/opt/intel/Compiler/11.0/083/ipp/em64t/lib -I/opt/intel/Compiler/11.0/083/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`
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`

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Peak Optimization Flags (Continued)

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32 -opt-prefetch -ansi-alias

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

429.mcf: -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 -auto-ilp32

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

462.libquantum: basepeak = yes

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 03:26:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 July 2009.