SPEC® CINT2006 Result

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Intel Corporation

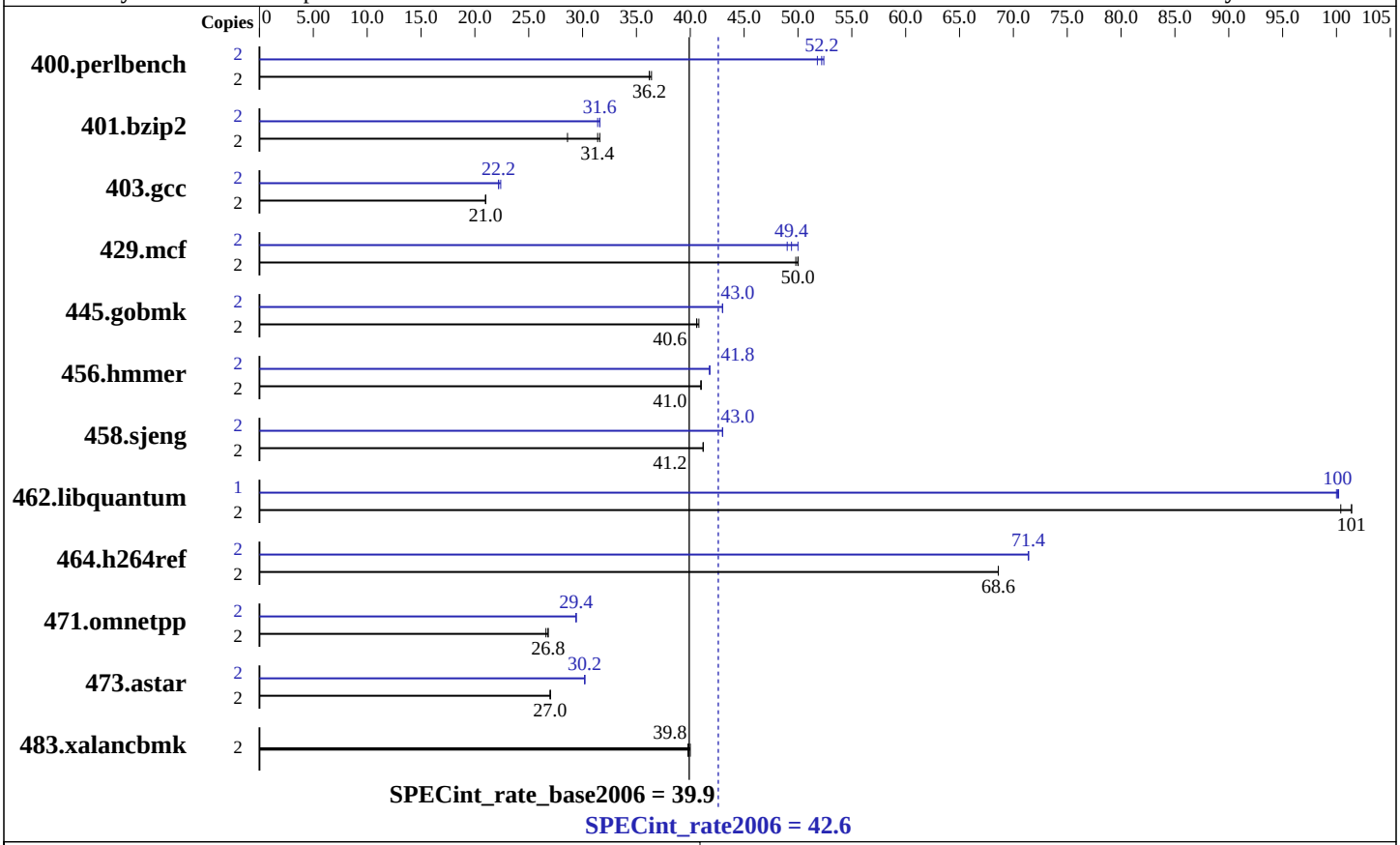
Lenovo T400 (Intel Core 2 Duo T9900)

SPECint®_rate2006 = 42.6

SPECint_rate_base2006 = 39.9

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Mar-2009
Hardware Availability: Mar-2009
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Core 2 Duo T9900
CPU Characteristics:	
CPU MHz:	3066
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	2 GB (2x1GB Micron DDR3-1066 CL7)
Disk Subsystem:	Hitachi HTS722020K9SA00 200GB SATA, 7200RPM
Other Hardware:	None

Software

Operating System:	Windows XP Professional w/ SP2 (64-bit)
Compiler:	Intel C++ Compiler Professional 11.0 for IA32 Build 20080930 Package ID: w_cproc_p_11.0.054 Microsoft Visual Studio 2008 (for libraries)
Auto Parallel:	Yes
File System:	NTFS
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	SmartHeap Library Version 8.1 from http://www.microquill.com/

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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	2	**540**	**36.2**	538	36.4	540	36.2	2	373	52.4	**375**	**52.2**	377	51.8
401.bzip2	2	674	28.6	**615**	**31.4**	612	31.6	2	**611**	**31.6**	609	31.6	616	31.4
403.gcc	2	764	21.0	766	21.0	**766**	**21.0**	2	**723**	**22.2**	727	22.2	719	22.4
429.mcf	2	**366**	**50.0**	365	50.0	366	49.8	2	**369**	**49.4**	372	49.0	366	50.0
445.gobmk	2	517	40.6	515	40.8	**516**	**40.6**	2	488	43.0	488	43.0	**488**	**43.0**
456.hmmer	2	456	41.0	**456**	**41.0**	456	41.0	2	**446**	**41.8**	446	41.8	446	41.8
458.sjeng	2	587	41.2	588	41.2	**587**	**41.2**	2	**563**	**43.0**	563	43.0	563	43.0
462.libquantum	2	**409**	**101**	408	101	413	100	1	**207**	**100**	207	100	207	100
464.h264ref	2	646	68.6	646	68.6	**646**	**68.6**	2	**619**	**71.4**	619	71.4	620	71.4
471.omnetpp	2	468	26.6	468	26.8	**468**	**26.8**	2	425	29.4	425	29.4	**425**	**29.4**
473.astar	2	520	27.0	519	27.0	**519**	**27.0**	2	**465**	**30.2**	465	30.2	466	30.2
483.xalancbmk	2	**346**	**39.8**	346	39.8	346	40.0	2	**346**	**39.8**	346	39.8	346	40.0

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

General Notes

```
The system bus runs at 1066 MHz
Binaries were built on Windows Vista Ultimate (32-bit)
OMP_NUM_THREADS set to number of logical processors as seen by the OS
KMP_AFFINITY set to physical,0
submit disabled for 462.libquantum peak
```

Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qc99
```

C++ benchmarks:

```
icl -Qvc9
```

Base Portability Flags

403.gcc: `-DSPEC_CPU_WIN32`
464.h264ref: `-DSPEC_CPU_NO_INTTYPES -DWIN32`
483.xalancbmk: `-Qoption,cpp,--no_wchar_t_keyword`

Base Optimization Flags

C benchmarks:
```
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000
```

C++ benchmarks:
```
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F512000000 shlw32m.lib            -link /FORCE:MULTIPLE
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks:
```
icl -Qvc9 -Qc99
```

C++ benchmarks:
```
icl -Qvc9
```

Peak Portability Flags

403.gcc: `-DSPEC_CPU_WIN32`
464.h264ref: `-DSPEC_CPU_NO_INTTYPES -DWIN32`
483.xalancbmk: `-Qoption,cpp,--no_wchar_t_keyword`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2)
`-Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch`
`/F512000000 shlw32m.lib            -link /FORCE:MULTIPLE`

401.bzip2: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2)
`-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias`
`/F512000000`

403.gcc: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2)
`-Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000`

Continued on next page

Peak Optimization Flags (Continued)

429.mcf: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

445.gobmk: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O2 -Qprec-div- -Qansi-alias /F512000000

456.hmmer: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F512000000

458.sjeng: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 /F512000000

462.libquantum: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qpar-runtime-control -Qvec-guard-write /F512000000

464.h264ref: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F512000000

C++ benchmarks:

471.omnetpp: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-ra-region-strategy=block /F512000000 shlw32m.lib -link /FORCE:MULTIPLE

473.astar: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-ra-region-strategy=routine /F512000000 shlw32m.lib -link /FORCE:MULTIPLE

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-win32-revA.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.xml

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