



SPEC® CINT2006 Result

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Lenovo Group Limited

(Test Sponsor: Intel Corporation)

Lenovo R630 G7 (Intel Xeon processor E7340, 2.40 GHz)

SPECint®_rate2006 = 192

SPECint_rate_base2006 = 160

CPU2006 license: 13

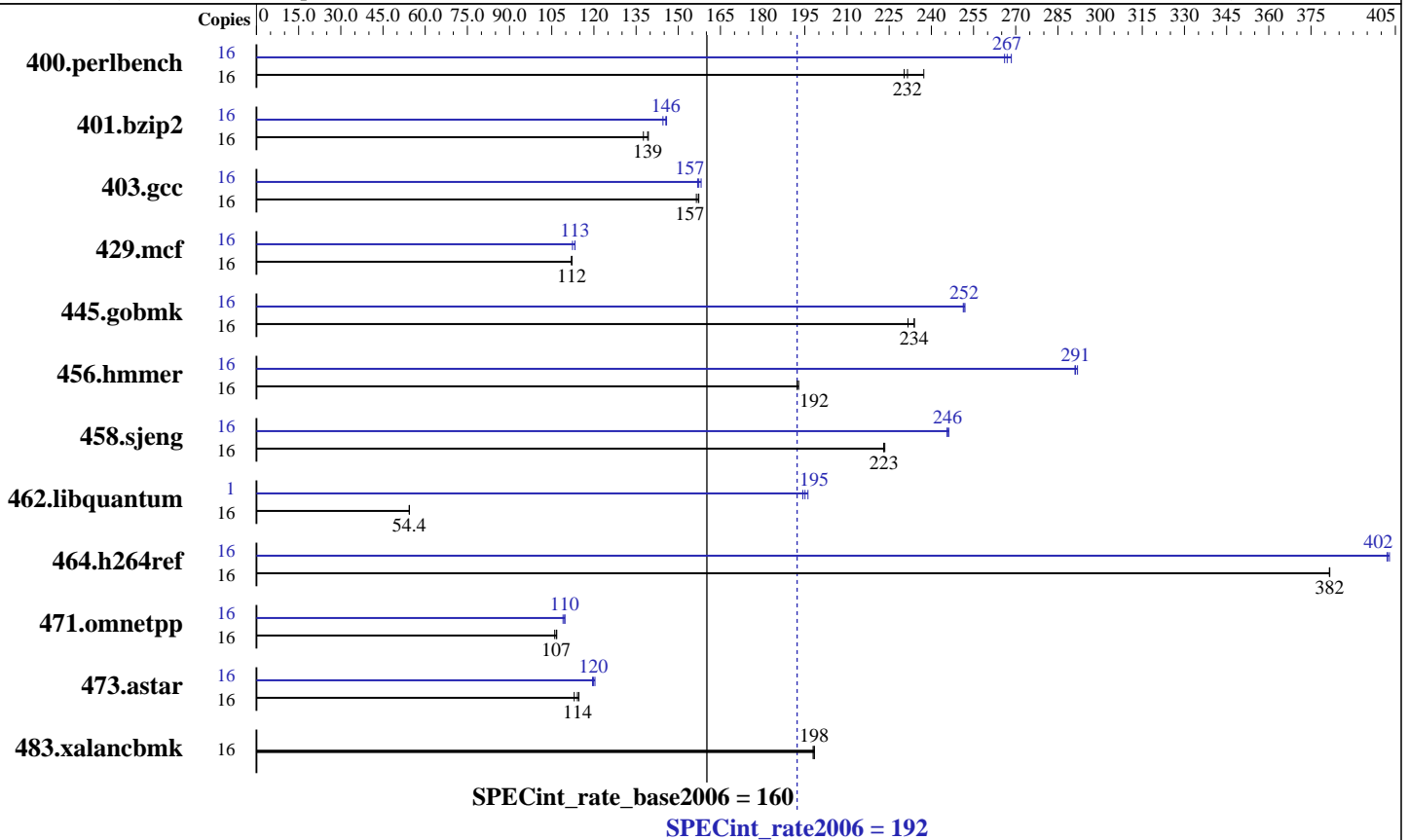
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Aug-2007

Hardware Availability: Oct-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E7340
 CPU Characteristics: Quad Core, 2.40 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip
 CPU(s) orderable: 1,2,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores
 L3 Cache: None
 Other Cache: None
 Memory: 16 GB (16 * 1GB Samsung DDR2 5300F, 2 rank, CL5-5-5, ECC)
 Disk Subsystem: Seagate, SAS, 73GB, 10Krpm, 1 disk only
 Other Hardware: None

Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10 SP1, Kernel linux-cbgn 2.6.16.43-0.5-smp for x86_64
 Compiler: Intel C++ Compiler for Linux32 and Linux64 Version 10.1 Build 20070725
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: SmartHeap library V8.1 Binutils 2.17.50.0.15



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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	16	659	237	<u>675</u>	<u>232</u>	679	230	16	582	268	<u>586</u>	<u>267</u>	588	266
401.bzip2	16	1108	139	1122	138	<u>1110</u>	<u>139</u>	16	1068	145	1059	146	<u>1061</u>	<u>146</u>
403.gcc	16	<u>820</u>	<u>157</u>	819	157	823	156	16	821	157	815	158	<u>819</u>	<u>157</u>
429.mcf	16	<u>1301</u>	<u>112</u>	1301	112	1303	112	16	1298	112	1288	113	<u>1288</u>	<u>113</u>
445.gobmk	16	724	232	<u>718</u>	<u>234</u>	717	234	16	666	252	<u>667</u>	<u>252</u>	668	251
456.hmmer	16	<u>776</u>	<u>192</u>	777	192	774	193	16	<u>512</u>	<u>291</u>	513	291	511	292
458.sjeng	16	<u>868</u>	<u>223</u>	866	223	868	223	16	<u>788</u>	<u>246</u>	786	246	788	246
462.libquantum	16	<u>6098</u>	<u>54.4</u>	6098	54.4	6099	54.4	1	107	194	<u>106</u>	<u>195</u>	106	196
464.h264ref	16	928	382	<u>928</u>	<u>382</u>	928	382	16	<u>880</u>	<u>402</u>	881	402	879	403
471.omnetpp	16	936	107	<u>938</u>	<u>107</u>	943	106	16	917	109	912	110	<u>912</u>	<u>110</u>
473.astar	16	979	115	994	113	<u>984</u>	<u>114</u>	16	933	120	940	119	<u>937</u>	<u>120</u>
483.xalancbmk	16	556	198	<u>557</u>	<u>198</u>	558	198	16	556	198	<u>557</u>	<u>198</u>	558	198

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

General Notes

Bios settings:

Hardware Prefetcher: Disabled

Adjacent Sector Prefetch: Disabled

High Bandwidth Option: Disabled

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer, for peak, are compiled in 64-bit mode

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



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Base Optimization Flags

C benchmarks:

`-fast -inline-calloc -opt-malloc-options=3`

C++ benchmarks:

`-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap`

Base Other Flags

C benchmarks:

`403.gcc: -Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks (except as noted below):

`icc`

`401.bzip2: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include`

`456.hmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/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:

Continued on next page



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Peak Optimization Flags (Continued)

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmr: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch
-opt-streaming-stores always -vec-guard-write
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/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-ic10-ia32-intel64-linux-flags.20090714.46.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.46.xml>

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