



SPEC[®] CINT2006 Result

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Intel Corporation

SPECint[®]2006 = 19.2

Intel Server System S7000FC4UR (Intel Xeon E7420)

SPECint_base2006 = 16.9

CPU2006 license: 13

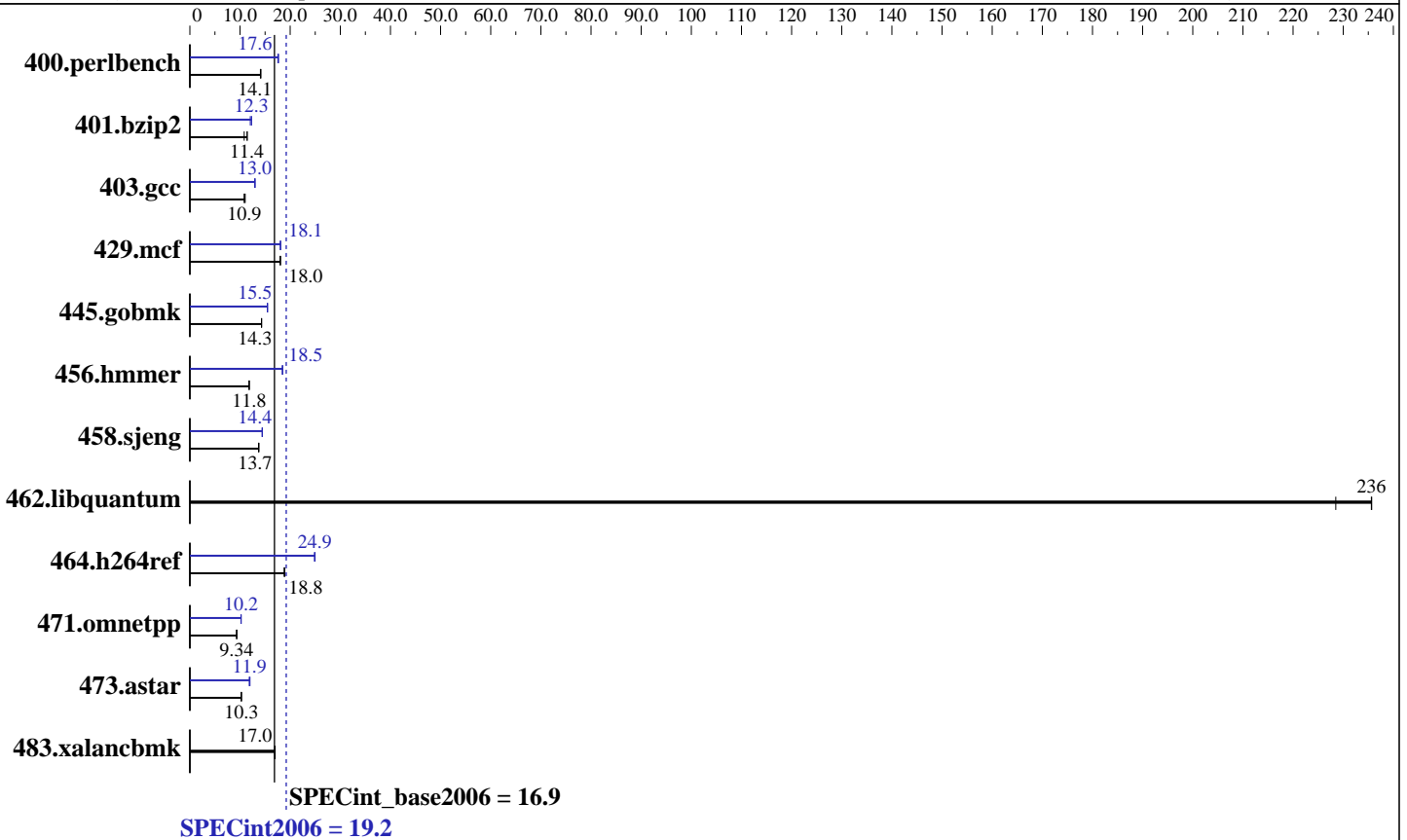
Test date: Sep-2008

Test sponsor: Intel Corporation

Hardware Availability: Sep-2008

Tested by: Intel Corporation

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E7420
 CPU Characteristics:
 CPU MHz: 2133
 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: 6 MB I+D on chip per chip, 3 MB shared / 2 cores
 L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (16x2GB Micron DDR2 5300F.2 rank, CL5-5-5, ECC)
 Disk Subsystem: 73 GB Seagate SAS, 10K 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 20080730 Package ID: l_cc_b_11.0.042
 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	695	14.1	<u>691</u>	<u>14.1</u>	691	14.1	556	17.6	<u>554</u>	<u>17.6</u>	553	17.7
401.bzip2	891	10.8	844	11.4	<u>845</u>	<u>11.4</u>	785	12.3	<u>785</u>	<u>12.3</u>	801	12.0
403.gcc	<u>739</u>	<u>10.9</u>	743	10.8	730	11.0	<u>621</u>	<u>13.0</u>	622	13.0	619	13.0
429.mcf	506	18.0	<u>505</u>	<u>18.0</u>	505	18.0	504	18.1	<u>505</u>	<u>18.1</u>	505	18.1
445.gobmk	734	14.3	<u>734</u>	<u>14.3</u>	734	14.3	678	15.5	<u>678</u>	<u>15.5</u>	678	15.5
456.hmmmer	788	11.8	<u>789</u>	<u>11.8</u>	789	11.8	<u>505</u>	<u>18.5</u>	505	18.5	506	18.4
458.sjeng	879	13.8	883	13.7	<u>883</u>	<u>13.7</u>	837	14.5	840	14.4	<u>838</u>	<u>14.4</u>
462.libquantum	90.7	229	87.9	236	<u>87.9</u>	<u>236</u>	90.7	229	87.9	236	<u>87.9</u>	<u>236</u>
464.h264ref	<u>1175</u>	<u>18.8</u>	1175	18.8	1170	18.9	886	25.0	<u>889</u>	<u>24.9</u>	891	24.9
471.omnetpp	668	9.36	<u>669</u>	<u>9.34</u>	671	9.31	611	10.2	<u>611</u>	<u>10.2</u>	613	10.2
473.astar	684	10.3	<u>684</u>	<u>10.3</u>	684	10.3	586	12.0	592	11.9	<u>590</u>	<u>11.9</u>
483.xalancbmk	<u>407</u>	<u>17.0</u>	406	17.0	408	16.9	<u>407</u>	<u>17.0</u>	406	17.0	408	16.9

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

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetcher: Enabled
High Bandwidth Option: Disabled

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:

-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/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/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/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:

Continued on next page



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Peak Optimization Flags (Continued)

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 -auto-ilp32 -opt-prefetch
-ansi-alias

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc
-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.hmmcr: -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/spec/cpu2006.1.1/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/spec/cpu2006.1.1/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.20090713.14.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-ic11.0-int-linux64-revA.20090713.14.xml>

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