SPEC® CINT2006 Result

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HITACHI

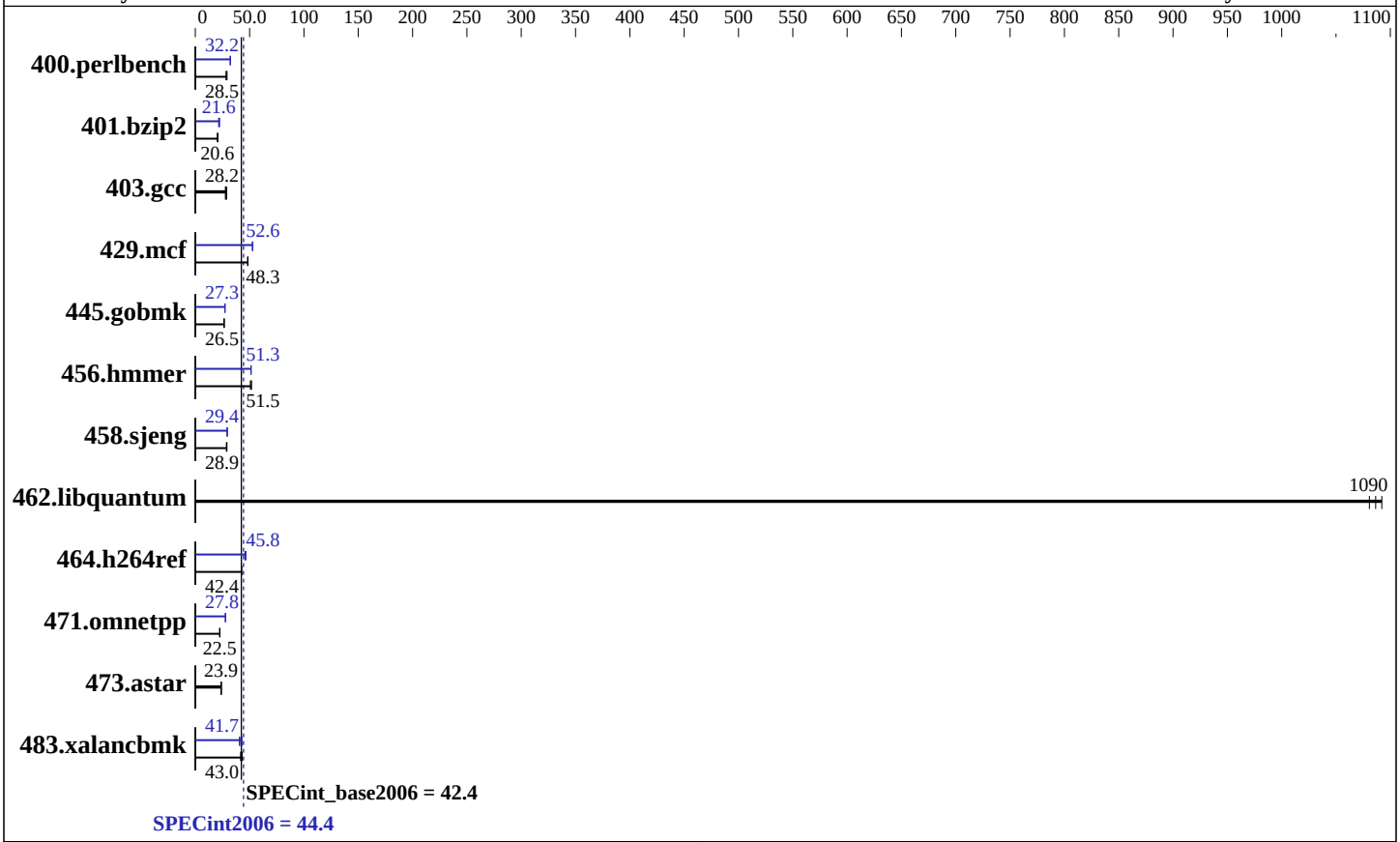
BladeSymphony BS2000 (Intel Xeon X5690)

SPECint®2006 = 44.4

SPECint_base2006 = 42.4

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Mar-2011
Hardware Availability: Feb-2011
Software Availability: Jan-2011



Hardware

CPU Name:	Intel Xeon X5690
CPU Characteristics:	Intel Turbo Boost Technology up to 3.73 GHz
CPU MHz:	3466
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip
CPU(s) orderable:	1, 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 1333 MHz)
Disk Subsystem:	2 x 146 GB 10000 rpm SAS RAID1 configuration
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 5.4.3, Advanced Platform, Kernel 2.6.18-164.9.1.el5 on an x86_64
Compiler:	Intel C++ Compiler XE for Linux Version 12.0.2.137 Build 20110112
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	334	29.2	**343**	**28.5**	343	28.4	303	32.3	303	32.2	**303**	**32.2**
401.bzip2	468	20.6	474	20.4	**468**	**20.6**	**446**	**21.6**	447	21.6	430	22.4
403.gcc	291	27.7	279	28.8	**285**	**28.2**	291	27.7	279	28.8	**285**	**28.2**
429.mcf	189	48.3	**189**	**48.3**	189	48.3	172	52.9	173	52.6	**173**	**52.6**
445.gobmk	397	26.4	393	26.7	**397**	**26.5**	**385**	**27.3**	385	27.2	383	27.4
456.hmmer	184	50.7	**181**	**51.5**	181	51.6	182	51.3	182	51.3	**182**	**51.3**
458.sjeng	423	28.6	415	29.1	**419**	**28.9**	412	29.4	412	29.3	**412**	**29.4**
462.libquantum	**19.1**	**1090**	19.2	1080	19.0	1090	**19.1**	**1090**	19.2	1080	19.0	1090
464.h264ref	523	42.3	517	42.8	**522**	**42.4**	485	45.7	**483**	**45.8**	474	46.6
471.omnetpp	**277**	**22.5**	278	22.5	277	22.6	226	27.7	**225**	**27.8**	225	27.8
473.astar	294	23.9	294	23.9	**294**	**23.9**	294	23.9	294	23.9	**294**	**23.9**
483.xalancbmk	166	41.7	**160**	**43.0**	160	43.1	**165**	**41.7**	170	40.5	161	42.9

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
Hugepages was enabled with the following:
'nodev   /mnt/hugepages   hugetlbfs  defaults   0 0' added to /etc/fstab
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS Settings:
Intel HT Technology = Disabled
Data Reuse Optimization = Disabled
```

Base Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks:

```
icpc -m64
```

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/home/bsc/smartheap/lib -lsmartheap64
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-prefetch
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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

403.gcc: basepeak = yes

429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-auto-ilp32 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-auto-ilp32
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/home/bsc/smartheap/lib -lsmartheap -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/home/bsc/smartheap/lib -lsmartheap -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/PlatformHitachi.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/PlatformHitachi.xml

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