



# SPEC® CINT2006 Result

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## HITACHI

**SPECint®2006 = 42.0**

**BladeSymphony BS320 (Intel Xeon X5675)**

**SPECint\_base2006 = 40.1**

CPU2006 license: 35

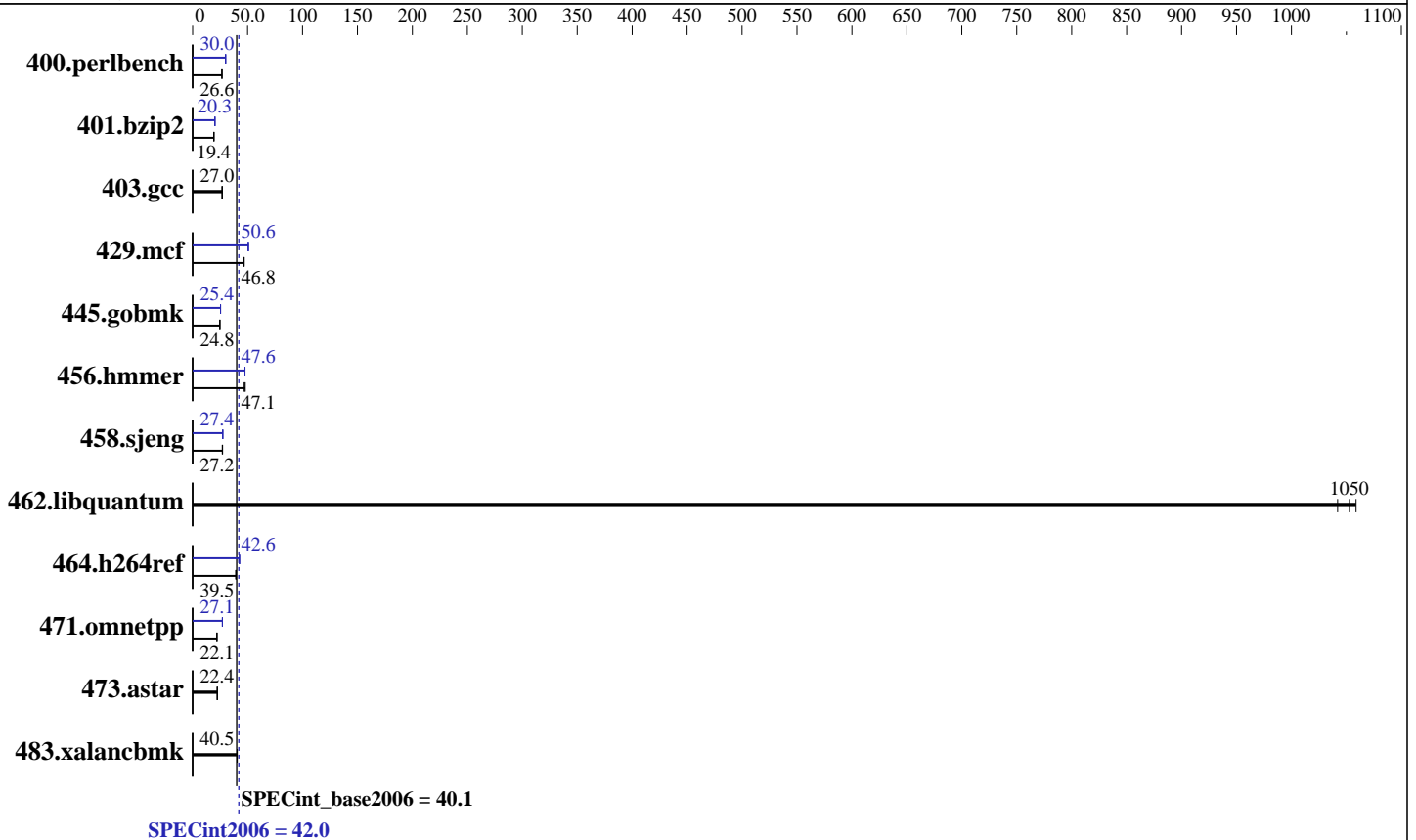
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Mar-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011



### Hardware

CPU Name: Intel Xeon X5675  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz  
 CPU MHz: 3066  
 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	364	26.8	<b><u>367</u></b>	<b><u>26.6</u></b>	368	26.6	324	30.1	<b><u>326</u></b>	<b><u>30.0</u></b>	326	29.9
401.bzip2	498	19.4	<b><u>498</u></b>	<b><u>19.4</u></b>	498	19.4	476	20.3	476	20.3	<b><u>476</u></b>	<b><u>20.3</u></b>
403.gcc	298	27.0	302	26.7	<b><u>299</u></b>	<b><u>27.0</u></b>	298	27.0	302	26.7	<b><u>299</u></b>	<b><u>27.0</u></b>
429.mcf	195	46.8	<b><u>195</u></b>	<b><u>46.8</u></b>	195	46.8	<b><u>180</u></b>	<b><u>50.6</u></b>	181	50.5	179	50.9
445.gobmk	<b><u>423</u></b>	<b><u>24.8</u></b>	422	24.9	426	24.6	<b><u>413</u></b>	<b><u>25.4</u></b>	413	25.4	413	25.4
456.hammer	198	47.1	<b><u>198</u></b>	<b><u>47.1</u></b>	195	47.9	196	47.7	<b><u>196</u></b>	<b><u>47.6</u></b>	196	47.6
458.sjeng	<b><u>445</u></b>	<b><u>27.2</u></b>	449	27.0	445	27.2	442	27.4	441	27.4	<b><u>441</u></b>	<b><u>27.4</u></b>
462.libquantum	19.6	1060	19.9	1040	<b><u>19.7</u></b>	<b><u>1050</u></b>	19.6	1060	19.9	1040	<b><u>19.7</u></b>	<b><u>1050</u></b>
464.h264ref	559	39.6	<b><u>560</u></b>	<b><u>39.5</u></b>	565	39.2	<b><u>519</u></b>	<b><u>42.6</u></b>	519	42.6	519	42.7
471.omnetpp	283	22.1	283	22.1	<b><u>283</u></b>	<b><u>22.1</u></b>	231	27.1	231	27.1	<b><u>231</u></b>	<b><u>27.1</u></b>
473.astar	313	22.4	313	22.4	<b><u>313</u></b>	<b><u>22.4</u></b>	313	22.4	313	22.4	<b><u>313</u></b>	<b><u>22.4</u></b>
483.xalancbmk	170	40.5	<b><u>170</u></b>	<b><u>40.5</u></b>	170	40.6	170	40.5	<b><u>170</u></b>	<b><u>40.5</u></b>	170	40.6

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:
'nodew /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



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## 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 -m64

471.omnetpp: icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

456.hmmmer: -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\_LP64 -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.hmmmer: -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: basepeak = yes

## 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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.

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