SPEC® CINT2006 Result
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HITACHI

BladeSymphony BS320 (Intel Xeon E5502)

$SPECint^®\_rate2006 =$ 71.0

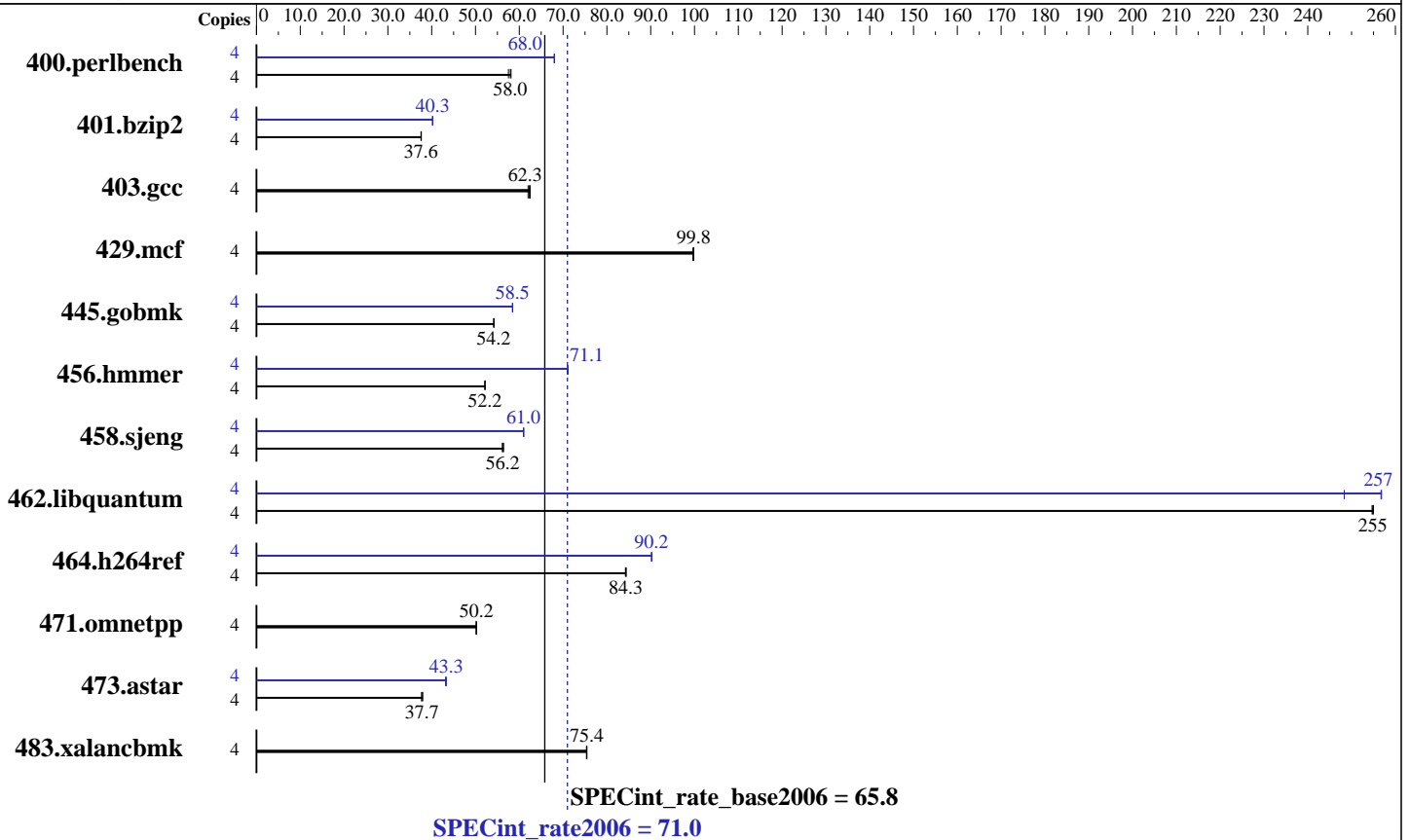$SPECint\_rate\_base2006 =$ 65.8

CPU2006 license: 872
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Aug-2009
Hardware Availability: Mar-2009
Software Availability: Feb-2009

400.perlbench 4 / 4 — 68.0 / 58.0
401.bzip2 4 / 4 — 40.3 / 37.6
403.gcc 4 — 62.3
429.mcf 4 — 99.8
445.gobmk 4 / 4 — 58.5 / 54.2
456.hmmer 4 / 4 — 71.1 / 52.2
458.sjeng 4 / 4 — 61.0 / 56.2
462.libquantum 4 / 4 — 257 / 255
464.h264ref 4 / 4 — 90.2 / 84.3
471.omnetpp 4 — 50.2
473.astar 4 / 4 — 43.3 / 37.7
483.xalancbmk 4 — 75.4

SPECint_rate_base2006 = 65.8
SPECint_rate2006 = 71.0

Hardware

CPU Name: Intel Xeon E5502
CPU Characteristics:
CPU MHz: 1866
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 2 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: 4 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB(6 x 4 GB PC3-10600R running at 800 MHz, 2 rank)
Disk Subsystem: 1 x 147 GB 10000 rpm SAS
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Advanced Platform, Kernel 2.6.18-128.el5 on an x86_64
Compiler: Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081
Auto Parallel: No
File System: ext3
System State: Multi-user run level 3
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	679	57.5	**674**	**58.0**	672	58.1	4	**575**	**68.0**	575	68.0	575	68.0
401.bzip2	4	1027	37.6	**1027**	**37.6**	1026	37.6	4	**959**	**40.3**	959	40.3	961	40.2
403.gcc	4	519	62.0	**517**	**62.3**	515	62.5	4	519	62.0	**517**	**62.3**	515	62.5
429.mcf	4	366	99.6	365	99.8	**365**	**99.8**	4	366	99.6	365	99.8	**365**	**99.8**
445.gobmk	4	774	54.2	**774**	**54.2**	774	54.2	4	718	58.5	**718**	**58.5**	718	58.5
456.hmmer	4	716	52.2	**715**	**52.2**	715	52.2	4	525	71.0	525	71.1	**525**	**71.1**
458.sjeng	4	**861**	**56.2**	862	56.1	858	56.4	4	793	61.0	**794**	**61.0**	794	61.0
462.libquantum	4	325	255	**325**	**255**	325	255	4	334	248	**323**	**257**	323	257
464.h264ref	4	1049	84.4	**1050**	**84.3**	1051	84.2	4	982	90.2	**981**	**90.2**	980	90.3
471.omnetpp	4	498	50.2	**498**	**50.2**	498	50.2	4	498	50.2	**498**	**50.2**	498	50.2
473.astar	4	**744**	**37.7**	745	37.7	740	38.0	4	648	43.3	**648**	**43.3**	650	43.2
483.xalancbmk	4	366	75.3	366	75.4	**366**	**75.4**	4	366	75.3	366	75.4	**366**	**75.4**

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

Submit Notes

```
The config file option 'submit' was used.
'/usr/bin/numactl' used to bind processes to CPUs
```

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
```

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch
```

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/home/bsc/smartheap/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/11.0/081/bin/intel64/icc
```

```
456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc
```

```
458.sjeng: /opt/intel/Compiler/11.0/081/bin/intel64/icc
```

C++ benchmarks (except as noted below):
```
icpc
```

```
473.astar: /opt/intel/Compiler/11.0/081/bin/intel64/icpc
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
   401.bzip2: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
   458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -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) -static(pass 2)
               -prof-use(pass 2) -ansi-alias -opt-prefetch
```

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Peak Optimization Flags (Continued)

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

     403.gcc: basepeak = yes

     429.mcf: basepeak = yes

   445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
             -ipo -no-prec-div -ansi-alias

   456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
             -ansi-alias -auto-ilp32

   458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
             -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
             -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static
             -opt-malloc-options=3 -opt-prefetch

   464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
             -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
             -prof-use(pass 2) -unroll2 -ansi-alias
```

C++ benchmarks:

```
   471.omnetpp: basepeak = yes

     473.astar: -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=routine -auto-ilp32
             -Wl,-z,muldefs -L/home/bsc/smartheap/lib -lsmartheap64

 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-revG.20090916.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-revG.20090916.xml

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 02:30:35 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 September 2009.