SPEC® CFP2006 Result
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HITACHI

BladeSymphony BS320 (Intel Xeon E5503)

$SPECfp^{®}\_rate2006 =$ 74.5

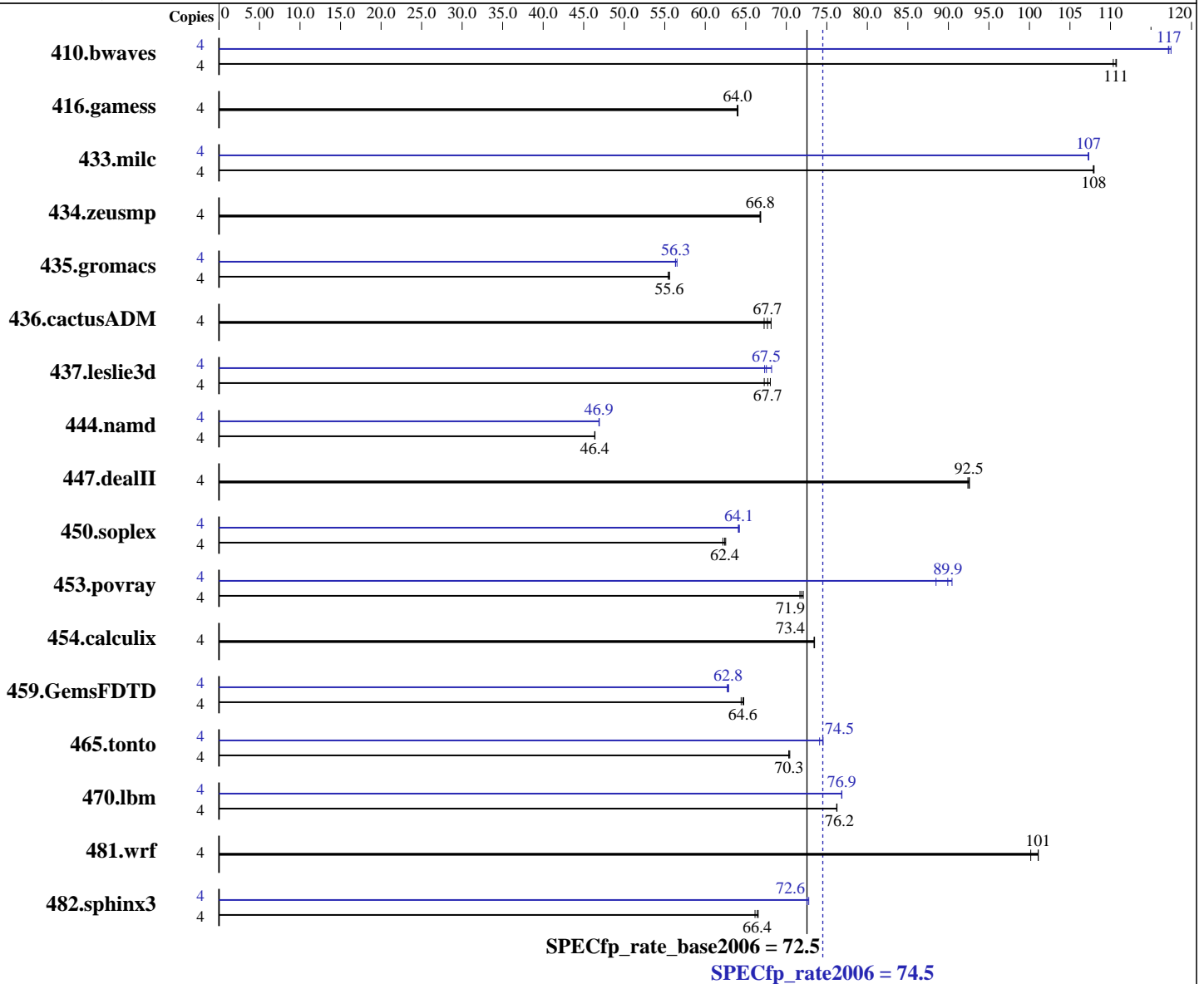$SPECfp\_rate\_base2006 =$ 72.5

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

Test date: Jul-2010
Hardware Availability: Mar-2010
Software Availability: Dec-2009

Copies scale 0 to 120

Benchmark	Copies	Value
410.bwaves	4 / 4	117 / 111
416.gamess	4	64.0
433.milc	4 / 4	107 / 108
434.zeusmp	4	66.8
435.gromacs	4 / 4	56.3 / 55.6
436.cactusADM	4	67.7
437.leslie3d	4 / 4	67.5 / 67.7
444.namd	4 / 4	46.9 / 46.4
447.dealII	4	92.5
450.soplex	4 / 4	64.1 / 62.4
453.povray	4 / 4	89.9 / 71.9
454.calculix	4	73.4
459.GemsFDTD	4 / 4	62.8 / 64.6
465.tonto	4 / 4	74.5 / 70.3
470.lbm	4 / 4	76.9 / 76.2
481.wrf	4	101
482.sphinx3	4 / 4	72.6 / 66.4

SPECfp_rate_base2006 = 72.5

SPECfp_rate2006 = 74.5

Hardware
CPU Name: Intel Xeon E5503
CPU Characteristics:
CPU MHz: 2000
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

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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 11.1 for Linux
Build 20091012 Package ID: l_cproc_p_11.1.059
Intel Fortran Compiler 11.1 for Linux
Build 20091012 Package ID: l_cprof_p_11.1.059
Auto Parallel: No
File System: ext3

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L3 Cache:	4 MB I+D on chip per chip	System State:	Multi-user run level 3
Other Cache:	None	Base Pointers:	64-bit
Memory:	24 GB (6 x 4 GB PC3-10600R, 2 rank, CL9-9-9)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x 73 GB 10000 rpm SAS		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	493	110	491	111	**491**	**111**	4	463	117	**464**	**117**	464	117
416.gamess	4	**1224**	**64.0**	1225	63.9	1223	64.0	4	**1224**	**64.0**	1225	63.9	1223	64.0
433.milc	4	340	108	**340**	**108**	340	108	4	342	107	342	107	**342**	**107**
434.zeusmp	4	545	66.8	545	66.8	**545**	**66.8**	4	545	66.8	545	66.8	**545**	**66.8**
435.gromacs	4	515	55.4	**514**	**55.6**	514	55.6	4	**507**	**56.3**	505	56.5	507	56.3
436.cactusADM	4	711	67.3	**706**	**67.7**	702	68.1	4	711	67.3	**706**	**67.7**	702	68.1
437.leslie3d	4	553	68.0	559	67.3	**555**	**67.7**	4	**557**	**67.5**	558	67.3	551	68.2
444.namd	4	691	46.4	**692**	**46.4**	692	46.4	4	**684**	**46.9**	684	46.9	684	46.9
447.dealII	4	**495**	**92.5**	495	92.4	494	92.6	4	**495**	**92.5**	495	92.4	494	92.6
450.soplex	4	537	62.2	534	62.5	**535**	**62.4**	4	520	64.2	**520**	**64.1**	521	64.1
453.povray	4	**296**	**71.9**	297	71.7	295	72.1	4	241	88.5	**237**	**89.9**	235	90.4
454.calculix	4	449	73.5	**449**	**73.4**	449	73.4	4	449	73.5	**449**	**73.4**	449	73.4
459.GemsFDTD	4	655	64.8	659	64.4	**657**	**64.6**	4	675	62.9	**676**	**62.8**	677	62.7
465.tonto	4	**560**	**70.3**	559	70.4	560	70.3	4	**528**	**74.5**	531	74.1	528	74.5
470.lbm	4	721	76.3	**721**	**76.2**	721	76.2	4	715	76.9	**715**	**76.9**	715	76.8
481.wrf	4	446	100	**442**	**101**	442	101	4	446	100	**442**	**101**	442	101
482.sphinx3	4	1179	66.1	1172	66.5	**1174**	**66.4**	4	1071	72.8	1075	72.6	**1074**	**72.6**

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
```

Operating System Notes

```
    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Base Compiler Invocation

```
    C benchmarks:
        icc -m64
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
      icpc -m64

Fortran benchmarks:
      ifort -m64

Benchmarks using both Fortran and C:
      icc -m64 ifort -m64

Base Portability Flags

         410.bwaves: -DSPEC_CPU_LP64
         416.gamess: -DSPEC_CPU_LP64
           433.milc: -DSPEC_CPU_LP64
         434.zeusmp: -DSPEC_CPU_LP64
        435.gromacs: -DSPEC_CPU_LP64 -nofor_main
      436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
        437.leslie3d: -DSPEC_CPU_LP64
          444.namd: -DSPEC_CPU_LP64
         447.dealII: -DSPEC_CPU_LP64
         450.soplex: -DSPEC_CPU_LP64
         453.povray: -DSPEC_CPU_LP64
        454.calculix: -DSPEC_CPU_LP64 -nofor_main
      459.GemsFDTD: -DSPEC_CPU_LP64
          465.tonto: -DSPEC_CPU_LP64
           470.lbm: -DSPEC_CPU_LP64
            481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
         482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

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Peak Compiler Invocation

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

    482.sphinx3: icc -m32

C++ benchmarks (except as noted below):
    icpc -m64

    450.soplex: icpc -m32

Fortran benchmarks:
    ifort -m64

Benchmarks using both Fortran and C:
    icc -m64 ifort -m64

Peak Portability Flags

        410.bwaves: -DSPEC_CPU_LP64
        416.gamess: -DSPEC_CPU_LP64
          433.milc: -DSPEC_CPU_LP64
        434.zeusmp: -DSPEC_CPU_LP64
       435.gromacs: -DSPEC_CPU_LP64 -nofor_main
      436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
       437.leslie3d: -DSPEC_CPU_LP64
          444.namd: -DSPEC_CPU_LP64
        447.dealII: -DSPEC_CPU_LP64
        453.povray: -DSPEC_CPU_LP64
       454.calculix: -DSPEC_CPU_LP64 -nofor_main
      459.GemsFDTD: -DSPEC_CPU_LP64
          465.tonto: -DSPEC_CPU_LP64
           470.lbm: -DSPEC_CPU_LP64
           481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

        433.milc: -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)
                -fno-alias -opt-prefetch

         470.lbm: -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-malloc-options=3 -ansi-alias -auto-ilp32

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Peak Optimization Flags (Continued)

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`

C++ benchmarks:

    444.namd: `-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)`
        `-fno-alias -auto-ilp32`

    447.dealII: `basepeak = yes`

    450.soplex: `-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-malloc-options=3`

    453.povray: `-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 -ansi-alias`

Fortran benchmarks:

    410.bwaves: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

    416.gamess: `basepeak = yes`

    434.zeusmp: `basepeak = yes`

    437.leslie3d: `-xSSE4.2 -ipo -O3 -no-prec-div -static`

  459.GemsFDTD: `-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 -Ob0`

    465.tonto: `-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 -inline-calloc -opt-malloc-options=3`

Benchmarks using both Fortran and C:

    435.gromacs: `-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 -auto-ilp32`

  436.cactusADM: `basepeak = yes`

    454.calculix: `basepeak = yes`

      481.wrf: `basepeak = yes`

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$SPECfp\_rate2006 = \quad 74.5$

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The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.03.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.03.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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