



SPEC[®] CFP2006 Result

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HITACHI

SPECfp[®]2006 = 44.2

BladeSymphony BS520A (Intel Xeon E5-2403)

SPECfp_base2006 = 42.4

CPU2006 license: 35

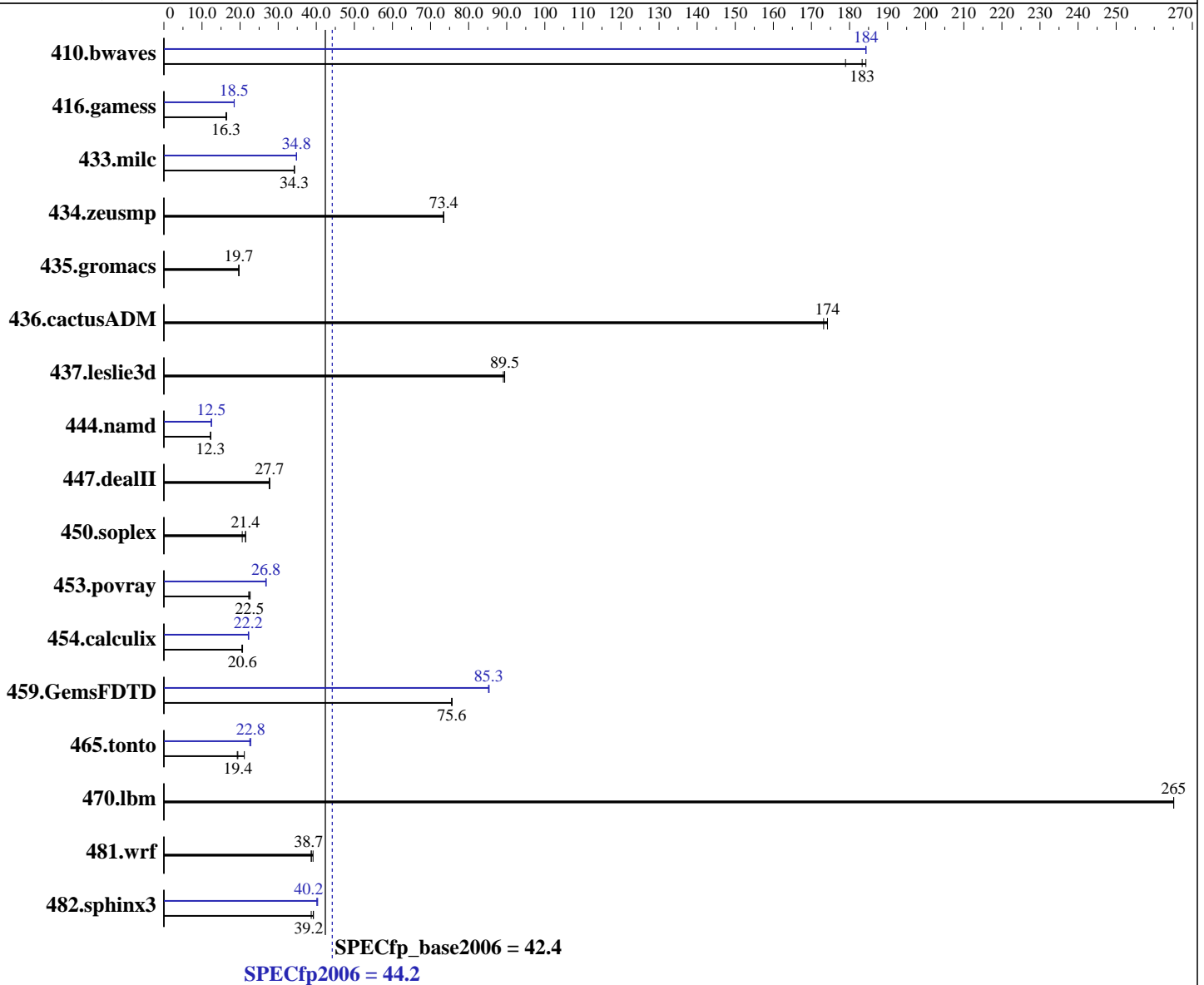
Test sponsor: HITACHI

Tested by: HITACHI

Test date: Jul-2012

Hardware Availability: Jun-2012

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2403
 CPU Characteristics:
 CPU MHz: 1800
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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 6.2, Kernel 2.6.32-220.4.2.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)

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L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-10600R-9, ECC, running at 1066 MHz)
 Disk Subsystem: 2 x 147 GB SAS, 15000 RPM RAID1 configuration
 Other Hardware: None

Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	75.9	179	<u>74.1</u>	<u>183</u>	73.7	184	73.7	184	<u>73.7</u>	<u>184</u>	73.7	184
416.gamess	<u>1199</u>	<u>16.3</u>	1201	16.3	1189	16.5	1060	18.5	<u>1061</u>	<u>18.5</u>	1062	18.4
433.milc	268	34.2	<u>268</u>	<u>34.3</u>	268	34.3	<u>264</u>	<u>34.8</u>	264	34.8	264	34.8
434.zeusmp	<u>124</u>	<u>73.4</u>	124	73.4	124	73.4	<u>124</u>	<u>73.4</u>	124	73.4	124	73.4
435.gromacs	362	19.7	363	19.7	<u>363</u>	<u>19.7</u>	362	19.7	363	19.7	<u>363</u>	<u>19.7</u>
436.cactusADM	<u>68.6</u>	<u>174</u>	69.0	173	68.6	174	<u>68.6</u>	<u>174</u>	69.0	173	68.6	174
437.leslie3d	105	89.1	<u>105</u>	<u>89.5</u>	105	89.5	105	89.1	<u>105</u>	<u>89.5</u>	105	89.5
444.namd	654	12.3	654	12.3	<u>654</u>	<u>12.3</u>	<u>644</u>	<u>12.5</u>	644	12.5	643	12.5
447.dealII	414	27.6	412	27.8	<u>413</u>	<u>27.7</u>	414	27.6	412	27.8	<u>413</u>	<u>27.7</u>
450.soplex	406	20.6	389	21.4	<u>389</u>	<u>21.4</u>	406	20.6	389	21.4	<u>389</u>	<u>21.4</u>
453.povray	239	22.3	235	22.6	<u>237</u>	<u>22.5</u>	<u>199</u>	<u>26.8</u>	198	26.9	199	26.7
454.calculix	399	20.7	<u>401</u>	<u>20.6</u>	403	20.5	372	22.2	<u>372</u>	<u>22.2</u>	370	22.3
459.GemsFDTD	140	75.7	140	75.6	<u>140</u>	<u>75.6</u>	124	85.2	<u>124</u>	<u>85.3</u>	124	85.4
465.tonto	<u>507</u>	<u>19.4</u>	466	21.1	511	19.3	432	22.8	437	22.5	<u>432</u>	<u>22.8</u>
470.lbm	51.8	265	51.8	265	<u>51.8</u>	<u>265</u>	51.8	265	51.8	265	<u>51.8</u>	<u>265</u>
481.wrf	289	38.7	<u>289</u>	<u>38.7</u>	285	39.2	289	38.7	<u>289</u>	<u>38.7</u>	285	39.2
482.sphinx3	504	38.7	<u>497</u>	<u>39.2</u>	496	39.3	483	40.4	<u>485</u>	<u>40.2</u>	485	40.2

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Sysinfo program /home/cpu2006/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on localhost.localdomain Fri Jul 6 07:36:50 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

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Platform Notes (Continued)

```

model name : Intel(R) Xeon(R) CPU E5-2403 0 @ 1.80GHz
  2 "physical id"s (chips)
  8 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores : 4
  siblings  : 4
  physical 0: cores 0 1 2 3
  physical 1: cores 0 1 2 3
cache size : 10240 KB

```

```

From /proc/meminfo
MemTotal:      99046424 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux localhost.localdomain 2.6.32-220.4.2.el6.x86_64 #1 SMP Mon Feb 6
16:39:28 EST 2012 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jul 5 23:43

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

```

KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "8"

```

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled

```

HITACHI BladeSymphony BS520A and HITACHI Compute Blade 520A are electronically equivalent. The results have been measured on a HITACHI BladeSymphony BS520A.



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Base Compiler Invocation

C benchmarks:

icc -m64

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.lelie3d: -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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias



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Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

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Peak Optimization Flags (Continued)

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120829.html>

<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120829.xml>

<http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.xml>

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For other inquiries, please contact webmaster@spec.org.

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