



SPEC[®] CFP2006 Result

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HITACHI

SPECfp[®]2006 = 66.0

BladeSymphony BS2000 (Intel Xeon E5-2630L)

SPECfp_base2006 = 62.8

CPU2006 license: 35

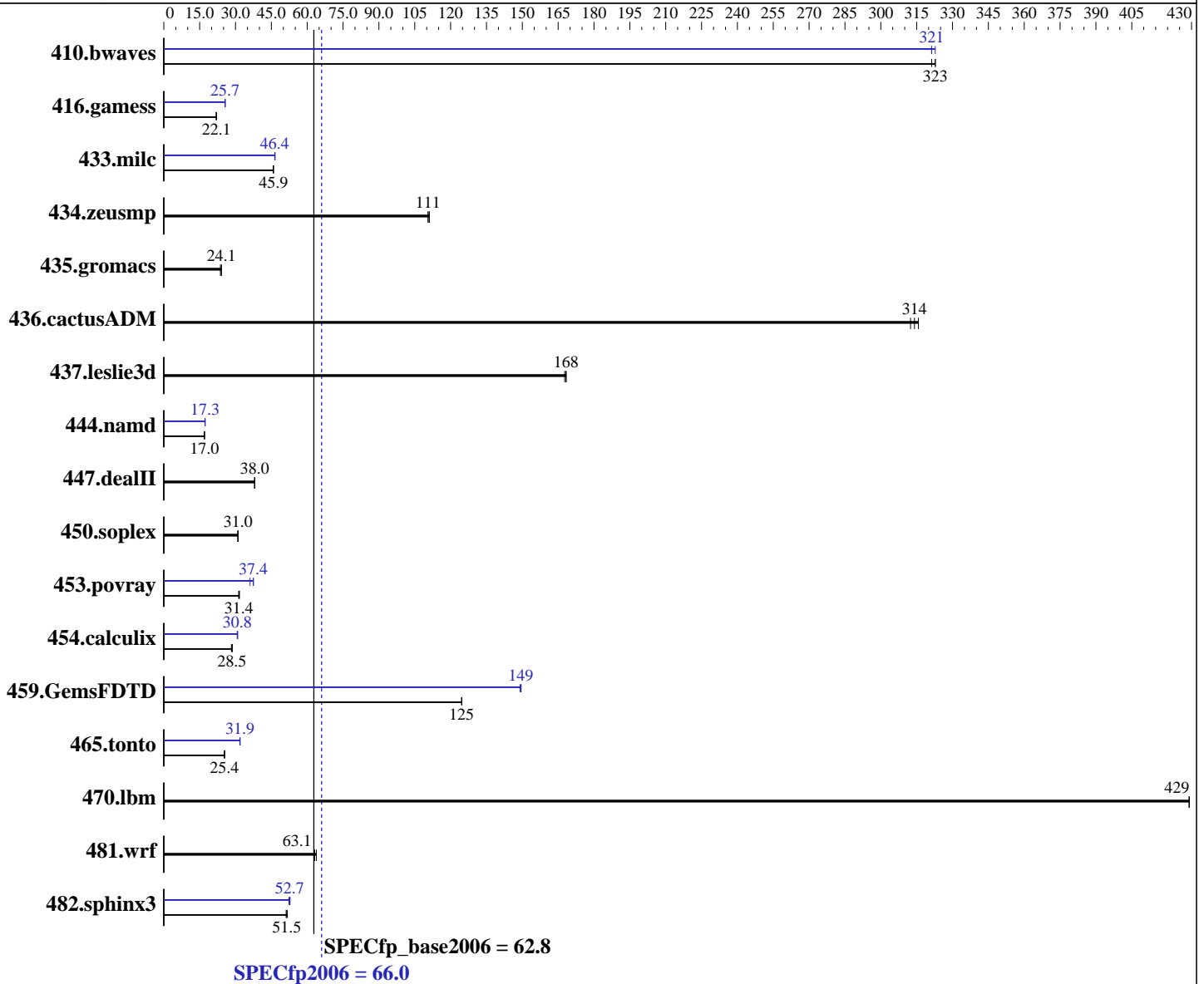
Test date: May-2012

Test sponsor: HITACHI

Hardware Availability: Apr-2012

Tested by: HITACHI

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2630L
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 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

Continued on next page

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)

Continued on next page



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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3L-10600R-9, ECC)
Disk Subsystem: 2 x 300 GB SAS, 10000 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 | 42.3 | 321 | 42.1 | 323 | <u>42.1</u> | <u>323</u> | <u>42.3</u> | <u>321</u> | 42.1 | 323 | 42.3 | 321 |
| 416.gamess | 896 | 21.9 | <u>887</u> | <u>22.1</u> | 886 | 22.1 | <u>763</u> | <u>25.7</u> | 763 | 25.7 | 764 | 25.6 |
| 433.milc | <u>200</u> | <u>45.9</u> | 201 | 45.8 | 200 | 45.9 | <u>198</u> | <u>46.4</u> | 198 | 46.4 | 197 | 46.6 |
| 434.zeusmp | <u>82.3</u> | <u>111</u> | 82.3 | 111 | 81.9 | 111 | <u>82.3</u> | <u>111</u> | 82.3 | 111 | 81.9 | 111 |
| 435.gromacs | 301 | 23.7 | 296 | 24.1 | <u>296</u> | <u>24.1</u> | 301 | 23.7 | 296 | 24.1 | <u>296</u> | <u>24.1</u> |
| 436.cactusADM | 37.8 | 316 | <u>38.0</u> | <u>314</u> | 38.2 | 312 | 37.8 | 316 | <u>38.0</u> | <u>314</u> | 38.2 | 312 |
| 437.leslie3d | 56.0 | 168 | 55.8 | 168 | <u>55.8</u> | <u>168</u> | 56.0 | 168 | 55.8 | 168 | <u>55.8</u> | <u>168</u> |
| 444.namd | 472 | 17.0 | <u>472</u> | <u>17.0</u> | 471 | 17.0 | <u>464</u> | <u>17.3</u> | 465 | 17.3 | 464 | 17.3 |
| 447.dealII | 302 | 37.9 | 300 | 38.1 | <u>301</u> | <u>38.0</u> | 302 | 37.9 | 300 | 38.1 | <u>301</u> | <u>38.0</u> |
| 450.soplex | <u>269</u> | <u>31.0</u> | 269 | 31.0 | 269 | 31.0 | <u>269</u> | <u>31.0</u> | 269 | 31.0 | 269 | 31.0 |
| 453.povray | <u>169</u> | <u>31.4</u> | 168 | 31.7 | 170 | 31.4 | <u>142</u> | <u>37.4</u> | 142 | 37.5 | 147 | 36.1 |
| 454.calculix | 291 | 28.3 | <u>289</u> | <u>28.5</u> | 288 | 28.7 | <u>268</u> | <u>30.8</u> | 268 | 30.7 | 267 | 30.9 |
| 459.GemsFDTD | 85.1 | 125 | 85.1 | 125 | <u>85.1</u> | <u>125</u> | <u>71.0</u> | <u>149</u> | 71.2 | 149 | 71.0 | 149 |
| 465.tonto | <u>387</u> | <u>25.4</u> | 388 | 25.3 | 387 | 25.4 | 309 | 31.8 | 308 | 31.9 | <u>309</u> | <u>31.9</u> |
| 470.lbm | 32.0 | 429 | <u>32.0</u> | <u>429</u> | 32.0 | 429 | 32.0 | 429 | <u>32.0</u> | <u>429</u> | 32.0 | 429 |
| 481.wrf | 178 | 62.8 | 175 | 63.8 | <u>177</u> | <u>63.1</u> | 178 | 62.8 | 175 | 63.8 | <u>177</u> | <u>63.1</u> |
| 482.sphinx3 | <u>379</u> | <u>51.5</u> | 381 | 51.2 | 377 | 51.7 | 369 | 52.8 | <u>370</u> | <u>52.7</u> | 372 | 52.4 |

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 Wed May 23 16:41:10 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
model name : Intel(R) Xeon(R) CPU E5-2630L 0 @ 2.00GHz
Continued on next page



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Platform Notes (Continued)

```

2 "physical id"s (chips)
24 "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 : 6
  siblings  : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB

From /proc/meminfo
MemTotal:      132148312 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 May 23 16:33

(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 = "12"

```

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 BS2000 and HITACHI Compute Blade 2000 are electronically equivalent. The results have been measured on a HITACHI BladeSymphony BS2000.



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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.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:

-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

Continued on next page



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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-linux64.20111122.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-linux64.20111122.xml>

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

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

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