## SPEC® CFP2006 Result

**HITACHI**

**Compute Blade 520H (Intel Xeon E5-2620)**

**SPECfp® _rate2006 = 335**

**SPECfp_rate_base2006 = 328**

- **CPU2006 license:** 35
- **Test sponsor:** HITACHI
- **Tested by:** HITACHI
- **Software Availability:** Feb-2012
- **Hardware Availability:** Apr-2012
- **Test date:** May-2012

### Hardware

<table>
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<th>SPECfp_rate2006</th>
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<td>410.bwaves</td>
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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:** No
- **File System:** ext4
- **System State:** Run level 3 (multi-user)
**SPEC CFP2006 Result**

**HITACHI**

**Compute Blade 520H (Intel Xeon E5-2620)**

**SPECfp_rate2006 = 335**

**SPECfp_rate_base2006 = 328**

<table>
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<td><strong>Software Availability</strong></td>
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</tbody>
</table>

**L3 Cache:** 15 MB I+D on chip per chip

**Base Pointers:** 32/64-bit

**Peak Pointers:** 32/64-bit

**Other Cache:** None

**Other Software:** None

**Memory:** 128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz)

**Disk Subsystem:** 1 x 146 GB SAS, 15000 RPM

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<th>Ratio</th>
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</tbody>
</table>

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

**Submit Notes**

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

**Operating System Notes**

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

Compute Blade 520H (Intel Xeon E5-2620)

SPECfp_rate2006 = 335
SPECfp_rate_base2006 = 328

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI
Test date: May-2012
Hardware Availability: Apr-2012
Software Availability: Feb-2012

Platform Notes

Sysinfo program /home/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebd7f503d2aaa42e583f96b07f99d3
running on localhost.localdomain Thu May 10 09:25:12 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 E5-2620 0 @ 2.00GHz
 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
cautions.)
  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:       132138076 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)

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 10 08:28

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

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**SPEC CFP2006 Result**

<table>
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<tr>
<th>HITACHI Compute Blade 520H (Intel Xeon E5-2620)</th>
<th>SPECfp_rate2006 = 335</th>
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**CPU2006 license:** 35
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**General Notes (Continued)**

Filesystem page cache cleared with:
- echo 1 > /proc/sys/vm/drop_caches
- runspec command invoked through numactl i.e.:
- numactl --interleave=all runspec <etc>

HITACHI BladeSymphony BS520H and HITACHI Compute Blade 520H are electronically equivalent. The results have been measured on a HITACHI BladeSymphony BS520H.

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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`
- 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 -03` `-no-prec-div` `-static` `-opt-prefetch` `-auto-p32`
- `-ansi-alias` `-opt-mem-layout-trans=3`

Continued on next page
## Base Optimization Flags (Continued)

C++ benchmarks:
- `-xAVX -ipo -03 -no-prec-div -static -opt-prefetch -auto-p32`  
  `-ansi-alias -opt-mem-layout-trans=3`

Fortran benchmarks:
- `-xAVX -ipo -03 -no-prec-div -static -opt-prefetch`

Benchmarks using both Fortran and C:
- `-xAVX -ipo -03 -no-prec-div -static -opt-prefetch -auto-p32`  
  `-ansi-alias -opt-mem-layout-trans=3`

## Peak Compiler Invocation

C benchmarks:
- `icc -m64`

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.games: -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`
- `465.tonto: -DSPEC_CPU_LP64`
- `470.lbm: -DSPEC_CPU_LP64`
- `481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

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HITACHI

Compute Blade 520H (Intel Xeon E5-2620)

SPECfp_rate2006 = 335
SPECfp_rate_base2006 = 328

CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: May-2012
Hardware Availability: Apr-2012
Software Availability: Feb-2012

Peak Portability Flags (Continued)

482.sphinx3: -DSPEC_CPU_LP64

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
-opt-mem-layout-trans=3

470.lbm: basepeak = yes
482.sphinx3: basepeak = yes

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.dealII: basepeak = yes
450.soplex: -xAVX (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
-no-prec-div (pass 2) -prof-use (pass 2) -opt-malloc-options=3

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 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
-no-prec-div (pass 2) -prof-use (pass 2) -static

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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
459.GemsFDTD: -xAVX (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
-no-prec-div (pass 2) -prof-use (pass 2) -opt-malloc-options=3

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

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HITACHI

Compute Blade 520H (Intel Xeon E5-2620)

SPECfp_rate2006 = 335
SPECfp_rate_base2006 = 328

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
-static -auto-ilp32 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

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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