SPEC® CFP2006 Result
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HITACHI

BladeSymphony BS2000 (Intel Xeon E5649)

$SPECfp®\_rate2006 = 215$

$SPECfp\_rate\_base2006 = 211$

CPU2006 license: 35　　　　　　　　　　　　**Test date:** Apr-2011
Test sponsor: HITACHI　　　　　　　　　　**Hardware Availability:** Feb-2011
Tested by: HITACHI　　　　　　　　　　　　**Software Availability:** Jan-2011

Benchmark	Copies	Result
410.bwaves	12	164
410.bwaves	24	166
416.gamess	24	256
433.milc	24	177
433.milc	24	177
434.zeusmp	24	250
435.gromacs	24	243
436.cactusADM	24	270
437.leslie3d	12	121
437.leslie3d	24	119
444.namd	24	232
444.namd	24	228
447.dealII	24	320
450.soplex	12	139
450.soplex	24	128
453.povray	24	406
453.povray	24	343
454.calculix	24	293
459.GemsFDTD	24	112
465.tonto	24	235
465.tonto	24	232
470.lbm	12	249
470.lbm	24	241
481.wrf	24	195
482.sphinx3	24	197
482.sphinx3	24	188

SPECfp_rate_base2006 = 211

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Hardware

CPU Name: Intel Xeon E5649
CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz: 2533
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

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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 XE for Linux
Version 12.0.2.137 Build 20110112
Intel Fortran Compiler XE for Linux
Version 12.0.2.137 Build 20110112
Auto Parallel: No
File System: ext3

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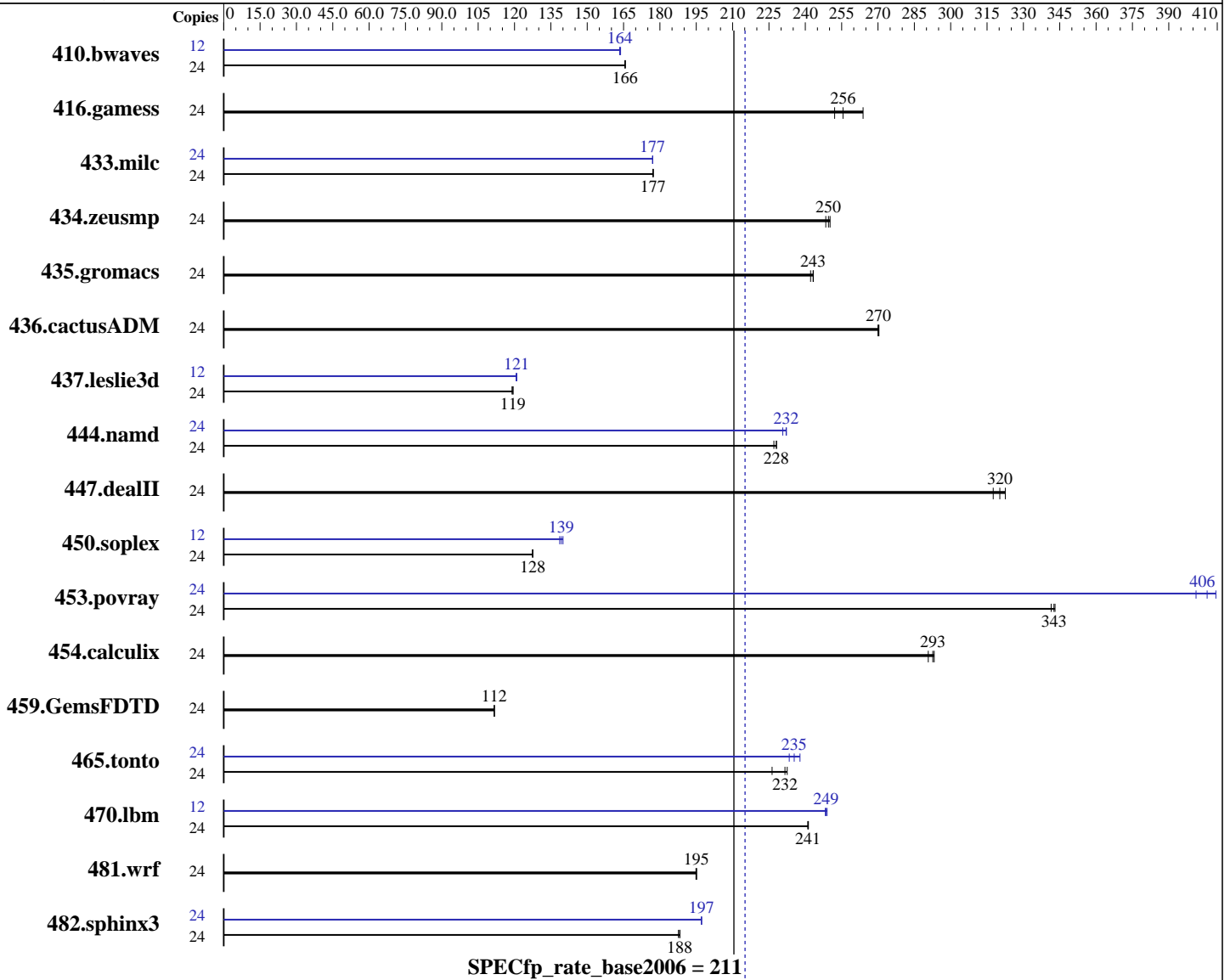$SPECfp\_rate\_base2006 =$ 211

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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	2 x 147 GB 10000 rpm SAS RAID1 configuration
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1968	166	1970	166	**1969**	**166**	12	996	164	998	163	**997**	**164**
416.gamess	24	1864	252	**1839**	**256**	1781	264	24	1864	252	**1839**	**256**	1781	264
433.milc	24	1244	177	**1243**	**177**	1243	177	24	**1245**	**177**	1245	177	1244	177
434.zeusmp	24	**875**	**250**	879	248	873	250	24	**875**	**250**	879	248	873	250
435.gromacs	24	704	243	**705**	**243**	708	242	24	704	243	**705**	**243**	708	242
436.cactusADM	24	**1062**	**270**	1062	270	1061	270	24	**1062**	**270**	1062	270	1061	270
437.leslie3d	24	1890	119	**1890**	**119**	1896	119	12	935	121	933	121	**933**	**121**
444.namd	24	**844**	**228**	844	228	848	227	24	**829**	**232**	834	231	829	232
447.dealII	24	851	323	**857**	**320**	865	318	24	851	323	**857**	**320**	865	318
450.soplex	24	1570	128	**1570**	**128**	1571	127	12	**718**	**139**	722	139	715	140
453.povray	24	374	341	372	343	**373**	**343**	24	**315**	**406**	318	401	312	409
454.calculix	24	675	293	681	291	**677**	**293**	24	675	293	681	291	**677**	**293**
459.GemsFDTD	24	2282	112	2280	112	**2280**	**112**	24	2282	112	2280	112	**2280**	**112**
465.tonto	24	1016	233	**1020**	**232**	1044	226	24	993	238	1012	233	**1003**	**235**
470.lbm	24	**1368**	**241**	1367	241	1368	241	12	664	248	**663**	**249**	662	249
481.wrf	24	1374	195	1376	195	**1374**	**195**	24	1374	195	1376	195	**1374**	**195**
482.sphinx3	24	2493	188	**2486**	**188**	2484	188	24	**2372**	**197**	2372	197	2373	197

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
     Large pages were disabled for this run

Platform Notes

    BIOS Settings:
    Data Reuse Optimization = Disabled

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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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias
```

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

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

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

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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) -prof-use(pass 2) -static -auto-ilp32`

        470.lbm: `-xSSE4.2(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`
                `-ansi-alias -opt-prefetch -static -auto-ilp32`

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Peak Optimization Flags (Continued)

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

C++ benchmarks:

       444.namd: `-xSSE4.2(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: `-xSSE4.2(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`
             `-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

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

       416.gamess: basepeak = yes

       434.zeusmp: basepeak = yes

       437.leslie3d: `-xSSE4.2 -ipo -O3 -no-prec-div`
             `-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

   459.GemsFDTD: basepeak = yes

       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: basepeak = yes

   436.cactusADM: basepeak = yes

       454.calculix: basepeak = yes

         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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/PlatformHitachi.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/PlatformHitachi.xml

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

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