SPEC® CFP2006 Result
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Huawei

Huawei BH620, Intel Xeon E5620

$SPECfp^{®}\_rate2006 = \quad 170$

$SPECfp\_rate\_base2006 = \quad 164$
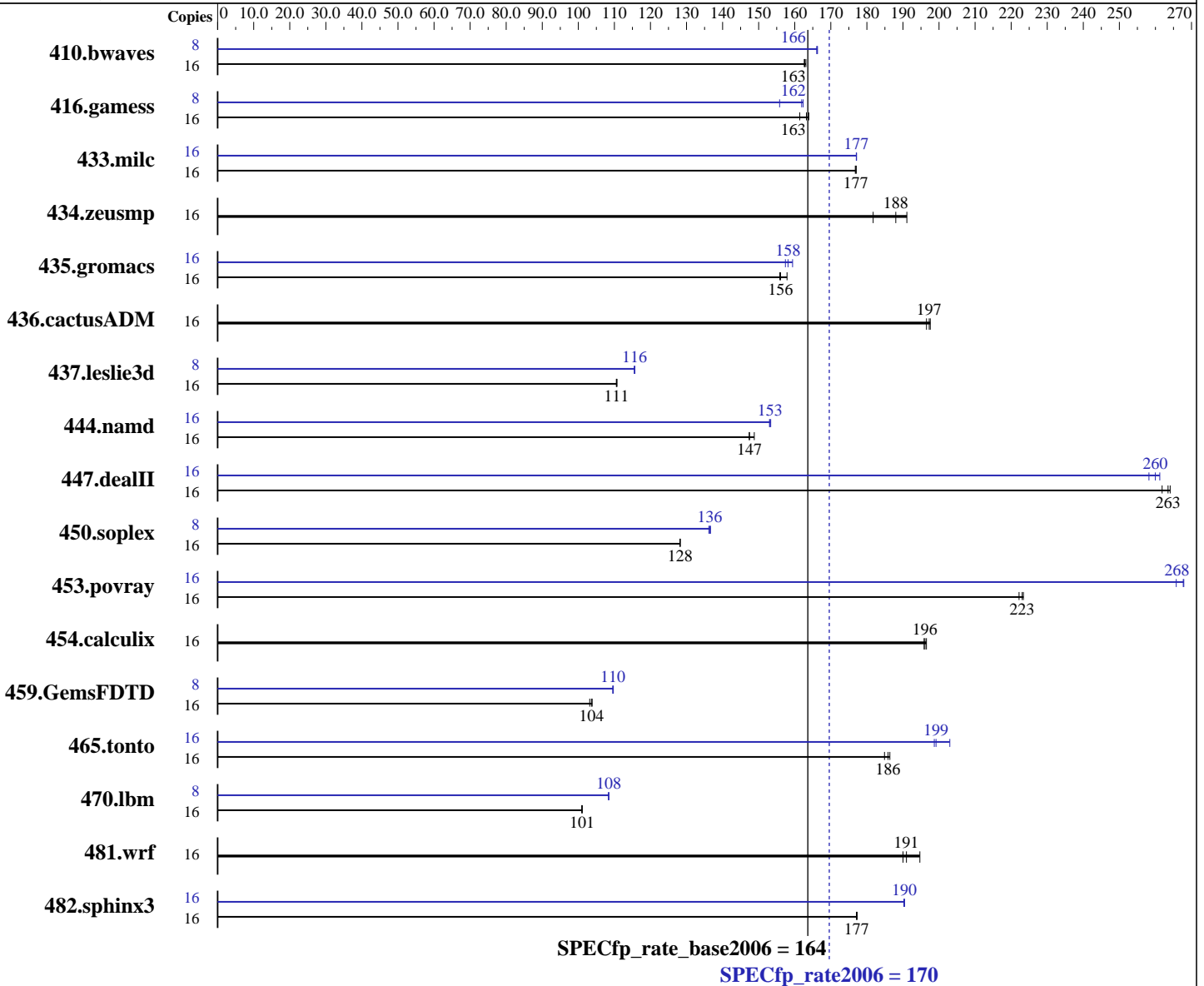
CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2010

Hardware Availability: Jan-2010

Software Availability: Feb-2010

	Copies		
410.bwaves	8	166	
	16	163	
416.gamess	8	162	
	16	163	
433.milc	16	177	
	16	177	
434.zeusmp	16	188	
435.gromacs	16	158	
	16	156	
436.cactusADM	16	197	
437.leslie3d	8	116	
	16	111	
444.namd	16	153	
	16	147	
447.dealII	16	260	
	16	263	
450.soplex	8	136	
	16	128	
453.povray	16	268	
	16	223	
454.calculix	16	196	
459.GemsFDTD	8	110	
	16	104	
465.tonto	16	199	
	16	186	
470.lbm	8	108	
	16	101	
481.wrf	16	191	
482.sphinx3	16	190	
	16	177	

SPECfp_rate_base2006 = 164

SPECfp_rate2006 = 170

Hardware

CPU Name: Intel Xeon E5620

CPU Characteristics: Intel Turbo Boost Technology up to 2.66 GHz

CPU MHz: 2400

FPU: Integrated

CPU(s) enabled: 8 cores, 2 chips, 4 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: SUSE Linux Enterprise Server 11 (x86_64) Kernel 2.6.27.19-5-default

Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064

Auto Parallel: No

File System: ext3

System State: Run level 3 (multi-user)

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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 x 4 GB PC3 10600R, dual rank, CL9, ECC,running at 1066 MHz)
Disk Subsystem:	1 x 146GB SAS,10k RPM
Other Hardware:	None
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1333	163	**1336**	**163**	1337	163	8	654	166	**654**	**166**	654	166
416.gamess	16	1941	161	1911	164	**1919**	**163**	8	**967**	**162**	965	162	1005	156
433.milc	16	830	177	831	177	**830**	**177**	16	**829**	**177**	830	177	829	177
434.zeusmp	16	762	191	**774**	**188**	801	182	16	762	191	**774**	**188**	801	182
435.gromacs	16	733	156	724	158	**732**	**156**	16	717	159	**722**	**158**	726	157
436.cactusADM	16	973	197	**969**	**197**	968	198	16	973	197	**969**	**197**	968	198
437.leslie3d	16	1361	111	1358	111	**1360**	**111**	8	651	116	650	116	**651**	**116**
444.namd	16	862	149	**870**	**147**	871	147	16	**838**	**153**	837	153	839	153
447.dealII	16	**695**	**263**	699	262	693	264	16	**704**	**260**	701	261	709	258
450.soplex	16	1041	128	**1041**	**128**	1041	128	8	**489**	**136**	490	136	488	137
453.povray	16	383	222	**382**	**223**	381	223	16	320	266	318	268	**318**	**268**
454.calculix	16	**673**	**196**	674	196	672	197	16	**673**	**196**	674	196	672	197
459.GemsFDTD	16	**1638**	**104**	1646	103	1635	104	8	**774**	**110**	775	110	774	110
465.tonto	16	852	185	**847**	**186**	845	186	16	792	199	**790**	**199**	776	203
470.lbm	16	2175	101	**2176**	**101**	2178	101	8	1013	108	**1014**	**108**	1015	108
481.wrf	16	918	195	**936**	**191**	941	190	16	918	195	**936**	**191**	941	190
482.sphinx3	16	1759	177	1761	177	**1760**	**177**	16	1637	190	1639	190	**1638**	**190**

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.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

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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
```

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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Test date: Sep-2010

Hardware Availability: Jan-2010

Software Availability: Feb-2010

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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Test sponsor: Huawei	**Hardware Availability:** Jan-2010
Tested by: Huawei	**Software Availability:** Feb-2010

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: `-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 -ansi-alias -scalar-rep-`

    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: `-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 -ansi-alias -scalar-rep-`

    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`

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Peak Optimization Flags (Continued)

481.wrf: `basepeak = yes`

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.20100316.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.20100316.xml`

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

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