SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX620 S6, Intel Xeon E5645, 2.40 GHz

$SPECfp^{®}\_rate2006 =$ 216

$SPECfp\_rate\_base2006 =$ 211

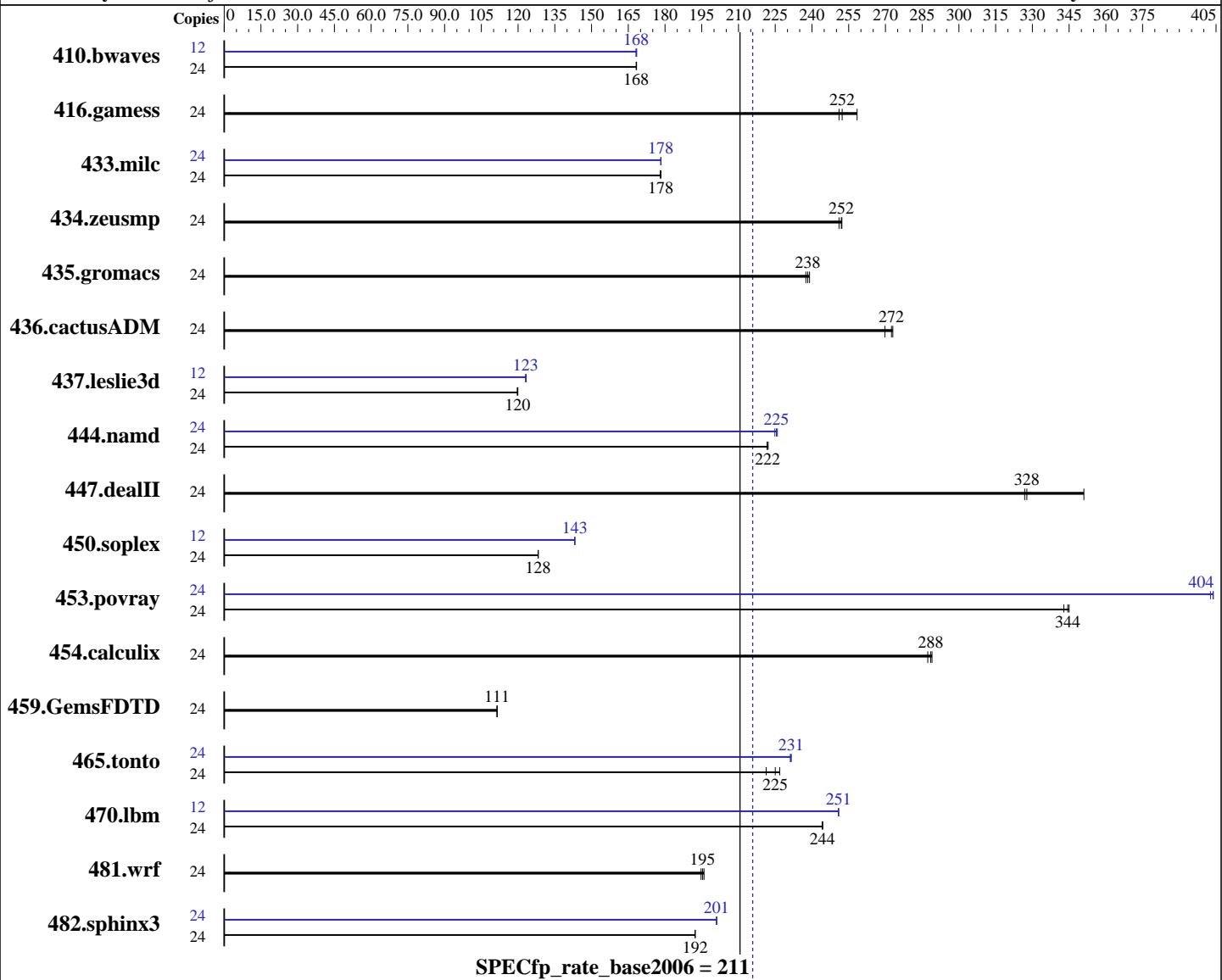| **CPU2006 license:** 19 | **Test date:** Jan-2011 |
| **Test sponsor:** Fujitsu | **Hardware Availability:** Feb-2011 |
| **Tested by:** Fujitsu | **Software Availability:** Jan-2011 |

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Hardware

CPU Name:	Intel Xeon E5645
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
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:	SUSE Linux Enterprise Server 11 (x86_64) with SP1, Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache:	12 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC)		
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM		
Other Hardware:	--		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1937	168	1939	168	**1938**	**168**	12	968	168	**969**	**168**	970	168
416.gamess	24	**1862**	**252**	1818	258	1872	251	24	**1862**	**252**	1818	258	1872	251
433.milc	24	1236	178	**1236**	**178**	1237	178	24	1236	178	1235	178	**1236**	**178**
434.zeusmp	24	**867**	**252**	870	251	866	252	24	**867**	**252**	870	251	866	252
435.gromacs	24	717	239	**719**	**238**	721	238	24	717	239	**719**	**238**	721	238
436.cactusADM	24	**1053**	**272**	1050	273	1063	270	24	**1053**	**272**	1050	273	1063	270
437.leslie3d	24	1885	120	**1883**	**120**	1881	120	12	916	123	915	123	**916**	**123**
444.namd	24	867	222	**868**	**222**	868	222	24	856	225	**854**	**225**	852	226
447.dealII	24	840	327	782	351	**838**	**328**	24	840	327	782	351	**838**	**328**
450.soplex	24	1562	128	**1561**	**128**	1561	128	12	699	143	**699**	**143**	699	143
453.povray	24	372	343	**371**	**344**	370	345	24	317	403	316	404	**316**	**404**
454.calculix	24	689	287	685	289	**686**	**288**	24	689	287	685	289	**686**	**288**
459.GemsFDTD	24	2285	111	**2285**	**111**	2286	111	24	2285	111	**2285**	**111**	2286	111
465.tonto	24	1067	221	1041	227	**1050**	**225**	24	1022	231	**1021**	**231**	1020	232
470.lbm	24	1351	244	1349	244	**1350**	**244**	12	657	251	657	251	**657**	**251**
481.wrf	24	1377	195	1368	196	**1372**	**195**	24	1377	195	1368	196	**1372**	**195**
482.sphinx3	24	2432	192	2434	192	**2432**	**192**	24	2327	201	2326	201	**2327**	**201**

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 stacksize to unlimited prior to run
    Hugepages were not configured on the system
```

Platform Notes

```
    BIOS configuration:
    Data Reuse Optimization = Disable
    Performance/Power Setting = Traditional
```

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General Notes

```
For information about Fujitsu please visit: http://www.fujitsu.com
Binaries were compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5
```

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
```

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Base Optimization Flags (Continued)

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
```

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
```

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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
>
>   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) -prof-use(pass 2) -unroll4 -ansi-alias
>   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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) -prof-use(pass 2) -unroll4 -auto
>   -inline-calloc -opt-malloc-options=3
>   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

>   435.gromacs: basepeak = yes

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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-ic12.0-linux64-revA.20110222.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.xml

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

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