SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX300 S6, Intel Xeon E5649, 2.53 GHz

$SPECfp^{®}\_rate2006 =$ 221

$SPECfp\_rate\_base2006 =$ 215

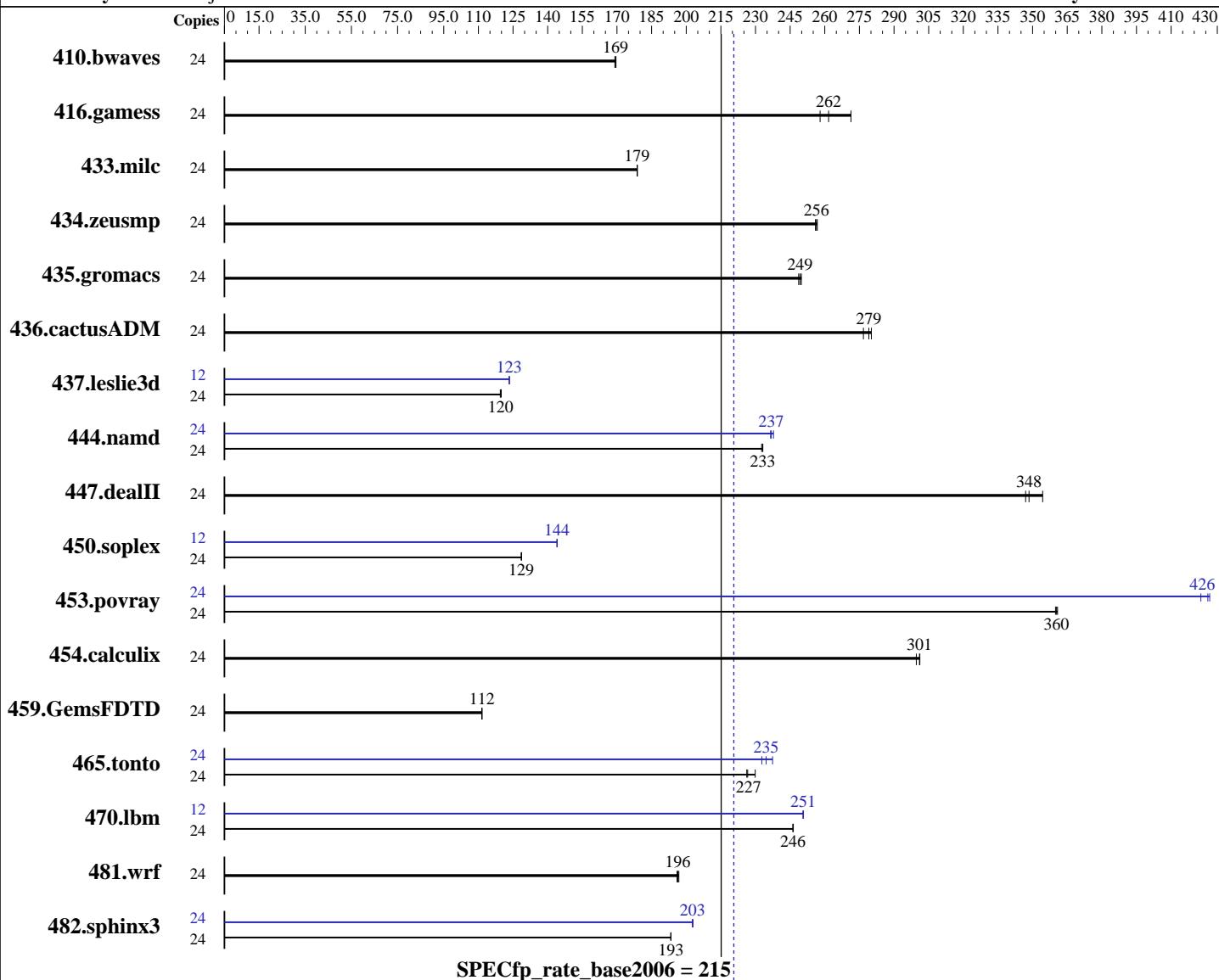| **CPU2006 license:** 19 | **Test date:** Jan-2011 |
| **Test sponsor:** Fujitsu | **Hardware Availability:** Feb-2011 |
| **Tested by:** Fujitsu | **Software Availability:** Nov-2010 |

Copies 0 15.0 35.0 55.0 75.0 95.0 110 125 140 155 170 185 200 215 230 245 260 275 290 305 320 335 350 365 380 395 410 430

Benchmark	Copies	Result
410.bwaves	24	169
416.gamess	24	262
433.milc	24	179
434.zeusmp	24	256
435.gromacs	24	249
436.cactusADM	24	279
437.leslie3d	12	123
437.leslie3d	24	120
444.namd	24	237
444.namd	24	233
447.dealII	24	348
450.soplex	12	144
450.soplex	24	129
453.povray	24	426
453.povray	24	360
454.calculix	24	301
459.GemsFDTD	24	112
465.tonto	24	235
465.tonto	24	227
470.lbm	12	251
470.lbm	24	246
481.wrf	24	196
482.sphinx3	24	203
482.sphinx3	24	193

SPECfp_rate_base2006 = 215

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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:	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 12.0.0.082 Build 20101006
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:	48 GB (12 x 4 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	1923	170	**1925**	**169**	1929	169	24	1923	170	**1925**	**169**	1929	169
416.gamess	24	1732	271	1822	258	**1796**	**262**	24	1732	271	1822	258	**1796**	**262**
433.milc	24	1232	179	**1232**	**179**	1233	179	24	1232	179	**1232**	**179**	1233	179
434.zeusmp	24	853	256	**852**	**256**	851	257	24	853	256	**852**	**256**	851	257
435.gromacs	24	686	250	689	249	**687**	**249**	24	686	250	689	249	**687**	**249**
436.cactusADM	24	1024	280	**1028**	**279**	1036	277	24	1024	280	**1028**	**279**	1036	277
437.leslie3d	24	**1885**	**120**	1888	119	1882	120	12	914	123	**914**	**123**	914	123
444.namd	24	**826**	**233**	825	233	827	233	24	**813**	**237**	814	237	809	238
447.dealII	24	**788**	**348**	775	354	791	347	24	**788**	**348**	775	354	791	347
450.soplex	24	1556	129	1556	129	**1556**	**129**	12	695	144	**695**	**144**	695	144
453.povray	24	354	361	355	360	**354**	**360**	24	302	423	299	427	**300**	**426**
454.calculix	24	657	301	**658**	**301**	661	300	24	657	301	**658**	**301**	661	300
459.GemsFDTD	24	2285	111	**2283**	**112**	2282	112	24	2285	111	**2283**	**112**	2282	112
465.tonto	24	1027	230	**1042**	**227**	1044	226	24	**1007**	**235**	995	237	1015	233
470.lbm	24	1340	246	**1339**	**246**	1338	246	12	657	251	**658**	**251**	658	251
481.wrf	24	1368	196	**1365**	**196**	1362	197	24	1368	196	**1365**	**196**	1362	197
482.sphinx3	24	2420	193	2418	193	**2419**	**193**	24	2305	203	2308	203	**2308**	**203**

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
     Large pages were not enabled for this run

Platform Notes

     BIOS configuration:
     Data Reuse Optimization = Disable

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General Notes

This result was measured on the PRIMERGY RX300 S6. The PRIMERGY TX300 S6
and the PRIMERGY RX300 S6 are electronically equivalent.

For information about Fujitsu please visit: http://www.fujitsu.com
Binaries were compiled on SLES 10 SP1 with Binutils 2.18.50.0.7.20080502

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 -ansi-alias

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Base Optimization Flags (Continued)

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

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

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -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: basepeak = yes

> 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 -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`

> 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`

Fortran benchmarks:

> 410.bwaves: basepeak = yes

> 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`

Benchmarks using both Fortran and C:

> 435.gromacs: basepeak = yes

> 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-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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