SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX600 S5, Intel Xeon X7560, 2.26 GHz

$SPECfp^{®}\_rate2006 = \quad 559$

$SPECfp\_rate\_base2006 = \quad 538$

CPU2006 license: 19	**Test date:** Mar-2010
Test sponsor: Fujitsu	**Hardware Availability:** Jun-2010
Tested by: Fujitsu	**Software Availability:** Jan-2010

SPECfp_rate_base2006 = 538

SPECfp_rate2006 = 559

Hardware

CPU Name:	Intel Xeon X7560
CPU Characteristics:	Intel Turbo Boost Technology up to 2.66 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,3,4 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, l_cprof_p_11.1.064
Auto Parallel:	No
File System:	ext3
System State:	Multi-User Run Level 3

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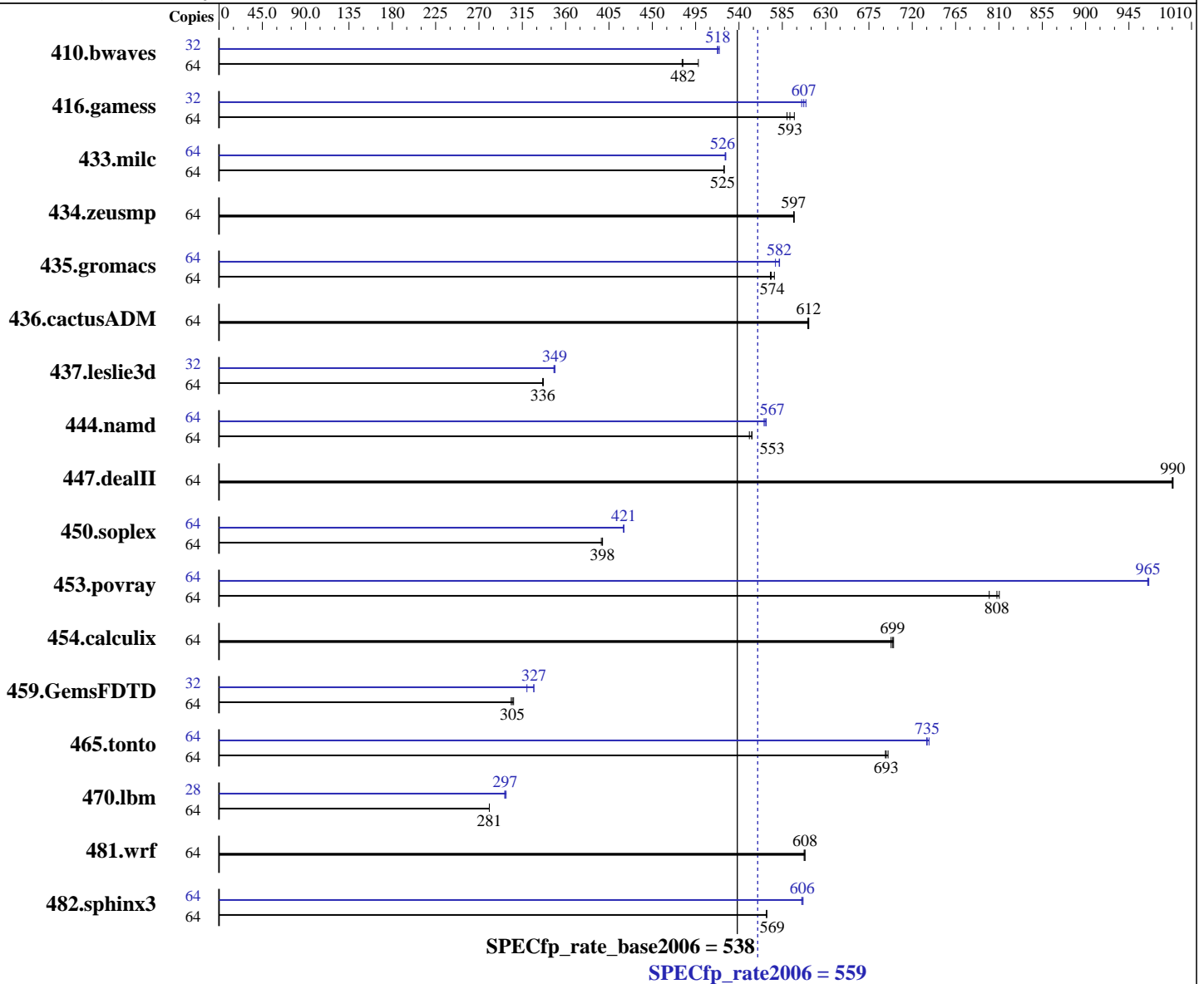$SPECfp\_rate\_base2006 =$ 538

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L3 Cache:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64x16 GB PC3-8500R, 4 rank, CL7-7-7, ECC)
Disk Subsystem:	1 x SAS, 300 GB, 10 krpm
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	64	1747	498	1808	481	**1805**	**482**	32	**839**	**518**	837	520	840	518
416.gamess	64	2124	590	2097	597	**2113**	**593**	32	**1032**	**607**	1035	605	1028	610
433.milc	64	1120	524	**1120**	**525**	1120	525	64	1118	526	1116	526	**1117**	**526**
434.zeusmp	64	**976**	**597**	976	597	975	597	64	**976**	**597**	976	597	975	597
435.gromacs	64	**797**	**574**	792	577	798	573	64	785	582	**785**	**582**	791	578
436.cactusADM	64	1251	611	1249	613	**1249**	**612**	64	1251	611	1249	613	**1249**	**612**
437.leslie3d	64	**1789**	**336**	1789	336	1786	337	32	865	348	**863**	**349**	862	349
444.namd	64	932	551	**928**	**553**	927	554	64	**905**	**567**	907	566	903	568
447.dealII	64	**739**	**990**	740	990	739	991	64	**739**	**990**	740	990	739	991
450.soplex	64	1340	398	**1340**	**398**	1344	397	64	1269	421	1271	420	**1269**	**421**
453.povray	64	**421**	**808**	420	810	426	800	64	353	964	**353**	**965**	353	966
454.calculix	64	754	701	**755**	**699**	756	698	64	754	701	**755**	**699**	756	698
459.GemsFDTD	64	2237	303	**2229**	**305**	2219	306	32	**1038**	**327**	1062	320	1038	327
465.tonto	64	**909**	**693**	906	695	910	692	64	**856**	**735**	854	737	857	735
470.lbm	64	3132	281	**3132**	**281**	3132	281	28	**1295**	**297**	1296	297	1290	298
481.wrf	64	1176	608	1175	609	**1175**	**608**	64	1176	608	1175	609	**1175**	**608**
482.sphinx3	64	2193	569	**2193**	**569**	2194	569	64	2061	605	**2059**	**606**	2056	607

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

General Notes

For information about Fujitsu please visit: http://www.fujitsu.com

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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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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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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: `basepeak = yes`

        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`

          481.wrf: `basepeak = yes`

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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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