SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX924 S2, Intel Xeon E5506, 2.13 GHz

$SPECfp^{®}2006 =$ 27.9

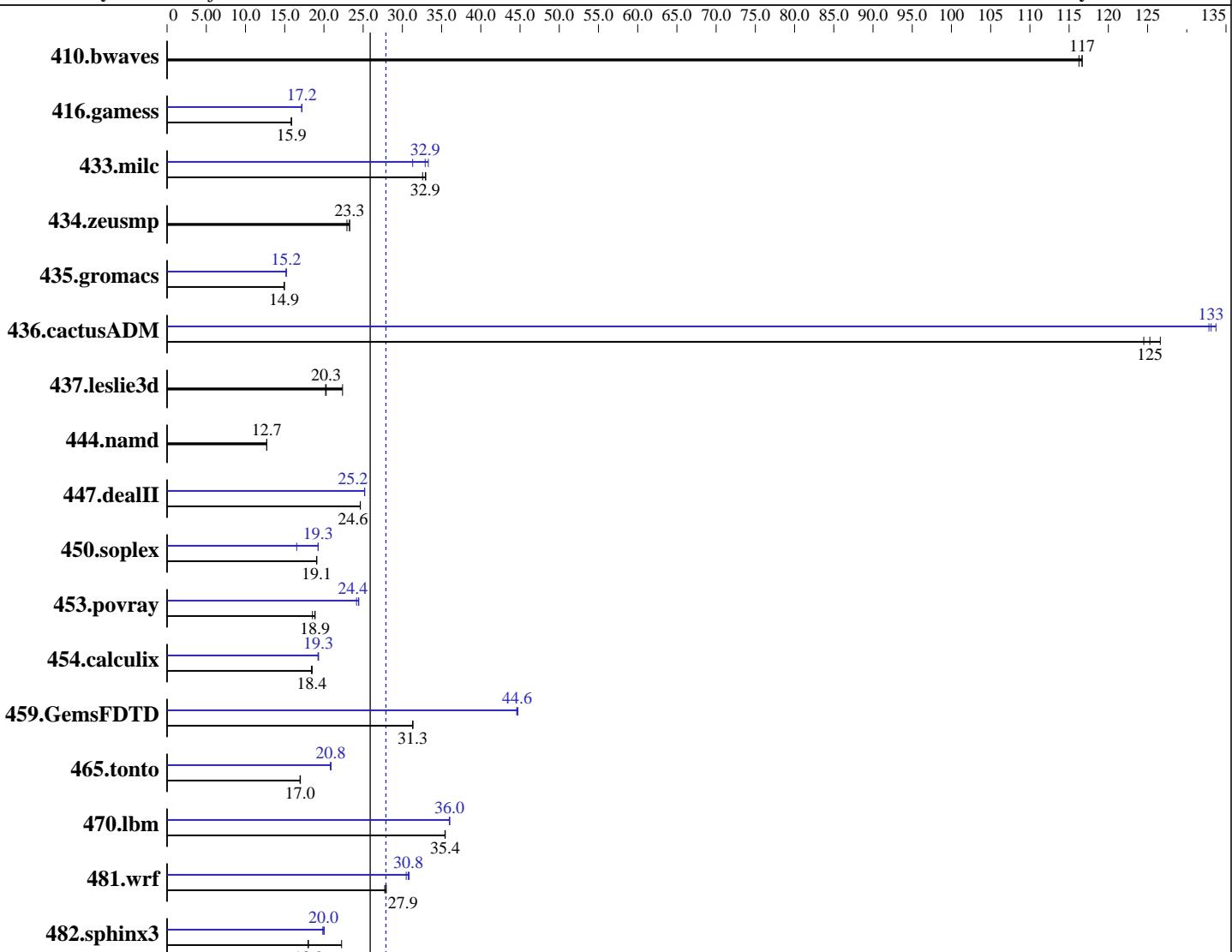$SPECfp\_base2006 =$ 25.9

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Aug-2010
Hardware Availability: Jun-2010
Software Availability: Jan-2010

Benchmark	Result
410.bwaves	117
416.gamess	17.2 / 15.9
433.milc	32.9 / 32.9
434.zeusmp	23.3
435.gromacs	15.2 / 14.9
436.cactusADM	133 / 125
437.leslie3d	20.3
444.namd	12.7
447.dealII	25.2 / 24.6
450.soplex	19.3 / 19.1
453.povray	24.4 / 18.9
454.calculix	19.3 / 18.4
459.GemsFDTD	44.6 / 31.3
465.tonto	20.8 / 17.0
470.lbm	36.0 / 35.4
481.wrf	30.8 / 27.9
482.sphinx3	20.0 / 18.0

SPECfp_base2006 = 25.9
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Hardware

CPU Name: Intel Xeon E5506
CPU Characteristics:
CPU MHz: 2133
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
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,
l_cprof_p_11.1.064
Auto Parallel: Yes
File System: ext3
System State: Run level 3 (multi-user)

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L3 Cache:	4 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)	Other Software:	None
Disk Subsystem:	1 x SATA, 160 GB, 5400 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**117**	**117**	116	117	117	116	**117**	**117**	116	117	117	116
416.gamess	**1234**	**15.9**	1237	15.8	1234	15.9	1139	17.2	**1140**	**17.2**	1140	17.2
433.milc	282	32.6	278	33.0	**279**	**32.9**	**279**	**32.9**	276	33.3	293	31.3
434.zeusmp	**391**	**23.3**	391	23.3	397	22.9	**391**	**23.3**	391	23.3	397	22.9
435.gromacs	478	14.9	**478**	**14.9**	478	14.9	470	15.2	**470**	**15.2**	470	15.2
436.cactusADM	94.4	127	96.0	125	**95.4**	**125**	90.0	133	89.4	134	**89.8**	**133**
437.leslie3d	**463**	**20.3**	465	20.2	420	22.4	**463**	**20.3**	465	20.2	420	22.4
444.namd	631	12.7	**631**	**12.7**	631	12.7	631	12.7	**631**	**12.7**	631	12.7
447.dealII	**464**	**24.6**	465	24.6	464	24.6	**454**	**25.2**	454	25.2	454	25.2
450.soplex	**437**	**19.1**	437	19.1	437	19.1	433	19.3	**433**	**19.3**	505	16.5
453.povray	**282**	**18.9**	282	18.9	287	18.5	**218**	**24.4**	218	24.4	220	24.2
454.calculix	446	18.5	**447**	**18.4**	448	18.4	**428**	**19.3**	427	19.3	429	19.2
459.GemsFDTD	339	31.3	339	31.3	**339**	**31.3**	237	44.7	**238**	**44.6**	238	44.6
465.tonto	**580**	**17.0**	579	17.0	580	17.0	471	20.9	472	20.8	**472**	**20.8**
470.lbm	387	35.5	**388**	**35.4**	388	35.4	381	36.0	382	36.0	**381**	**36.0**
481.wrf	403	27.8	400	27.9	**401**	**27.9**	**363**	**30.8**	362	30.9	366	30.5
482.sphinx3	**1081**	**18.0**	1085	18.0	876	22.3	982	19.8	**976**	**20.0**	973	20.0

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

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

Platform Notes

The system automatically configures the memory to run at 800 MHz.

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
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 -parallel -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

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

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

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Peak Compiler Invocation

C benchmarks:
    `icc    -m64`

C++ benchmarks:
    `icpc   -m64`

Fortran benchmarks:
    `ifort -m64`

Benchmarks using both Fortran and C:
    `icc    -m64 ifort -m64`

Peak Portability Flags

`Same as Base Portability Flags`

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)`
          `-ansi-alias`

  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)`
          `-parallel -ansi-alias -auto-ilp32`

  482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`
          `-unroll2`

C++ benchmarks:

  444.namd: `basepeak = yes`

  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- -auto-ilp32`

  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 -auto-ilp32`

  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`

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Peak Optimization Flags (Continued)

Fortran benchmarks:

    410.bwaves: `basepeak = yes`

    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: `basepeak = yes`

  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 -opt-prefetch -parallel`

    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)`
          `-inline-calloc -opt-malloc-options=3 -auto -unroll4`

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: `-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 -opt-prefetch -parallel -auto-ilp32`

    454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

    481.wrf: `Same as 454.calculix`

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.20100330.02.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.20100330.02.xml

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

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