SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX200 S6, Intel Xeon E5503, 2.0 GHz

$SPECfp®2006 =$ 26.0
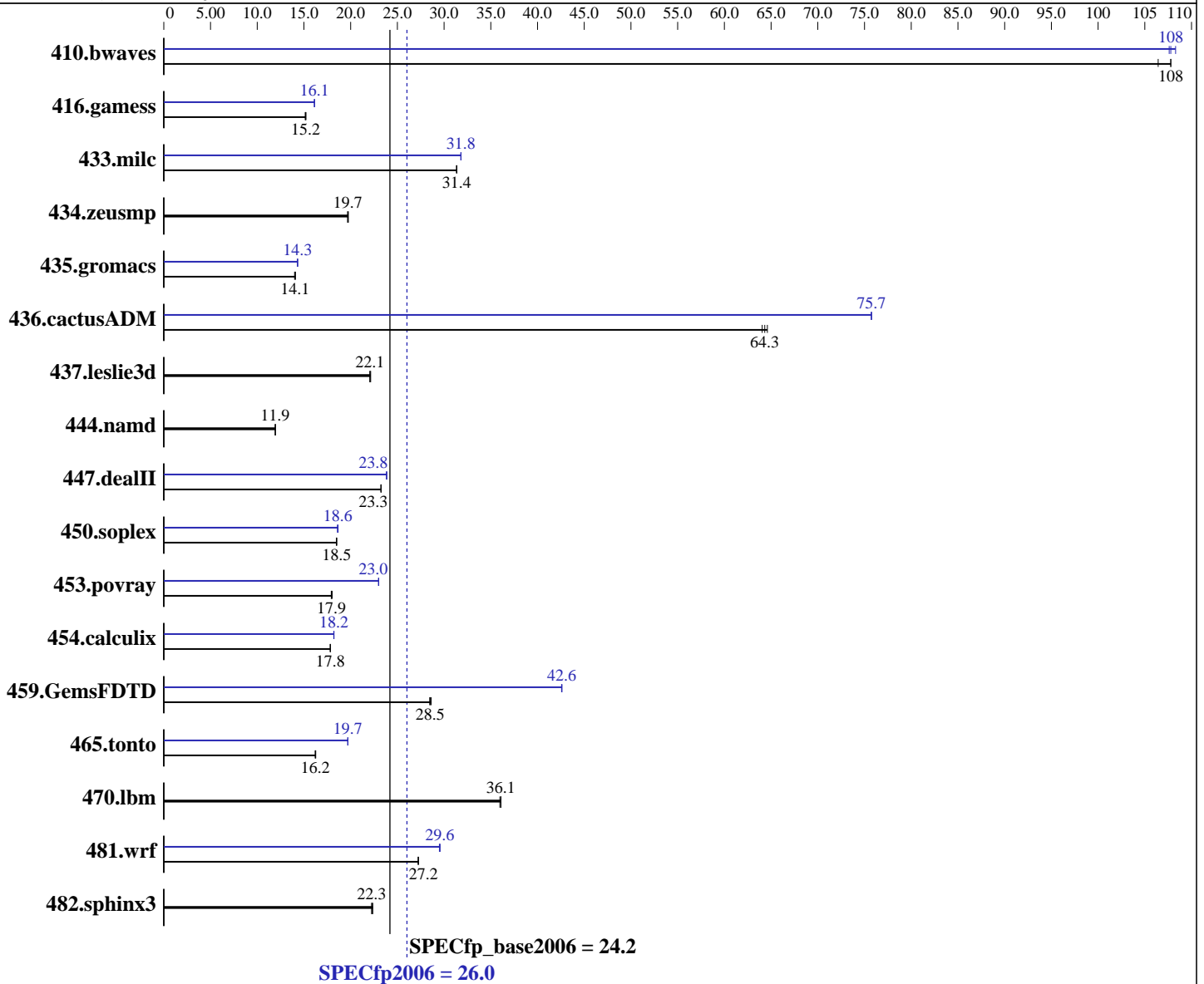
$SPECfp\_base2006 =$ 24.2

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

Test date: Apr-2010
Hardware Availability: May-2010
Software Availability: Jan-2010

Benchmark	base	peak
410.bwaves	108	108
416.gamess	15.2	16.1
433.milc	31.4	31.8
434.zeusmp	19.7	
435.gromacs	14.1	14.3
436.cactusADM	64.3	75.7
437.leslie3d	22.1	
444.namd	11.9	
447.dealII	23.3	23.8
450.soplex	18.5	18.6
453.povray	17.9	23.0
454.calculix	17.8	18.2
459.GemsFDTD	28.5	42.6
465.tonto	16.2	19.7
470.lbm	36.1	
481.wrf	27.2	29.6
482.sphinx3	22.3	

SPECfp_base2006 = 24.2
SPECfp2006 = 26.0

Hardware

CPU Name: Intel Xeon E5503
CPU Characteristics:
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 2 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

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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: Multi-User Run Level 3

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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	128	106	**126**	**108**	126	108	**126**	**108**	126	108	125	108
416.gamess	1287	15.2	**1290**	**15.2**	1294	15.1	**1214**	**16.1**	1215	16.1	1213	16.1
433.milc	293	31.3	293	31.4	**293**	**31.4**	**289**	**31.8**	289	31.8	289	31.8
434.zeusmp	461	19.8	**462**	**19.7**	462	19.7	461	19.8	**462**	**19.7**	462	19.7
435.gromacs	**507**	**14.1**	510	14.0	507	14.1	499	14.3	**499**	**14.3**	499	14.3
436.cactusADM	185	64.6	187	64.0	**186**	**64.3**	**158**	**75.7**	158	75.7	158	75.7
437.leslie3d	**426**	**22.1**	426	22.0	425	22.1	**426**	**22.1**	426	22.0	425	22.1
444.namd	672	11.9	672	11.9	**672**	**11.9**	672	11.9	672	11.9	**672**	**11.9**
447.dealII	492	23.2	**492**	**23.3**	492	23.3	479	23.9	**480**	**23.8**	480	23.8
450.soplex	**451**	**18.5**	452	18.5	451	18.5	447	18.7	449	18.6	**448**	**18.6**
453.povray	**296**	**17.9**	295	18.0	297	17.9	231	23.0	**231**	**23.0**	232	23.0
454.calculix	463	17.8	**463**	**17.8**	462	17.8	454	18.2	453	18.2	**453**	**18.2**
459.GemsFDTD	373	28.5	**372**	**28.5**	371	28.6	249	42.6	**249**	**42.6**	249	42.6
465.tonto	**606**	**16.2**	605	16.3	607	16.2	499	19.7	500	19.7	**499**	**19.7**
470.lbm	381	36.1	382	36.0	**381**	**36.1**	381	36.1	382	36.0	**381**	**36.1**
481.wrf	**410**	**27.2**	410	27.2	410	27.2	378	29.6	**378**	**29.6**	379	29.5
482.sphinx3	876	22.3	871	22.4	**876**	**22.3**	876	22.3	871	22.4	**876**	**22.3**

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.
BIOS configuration:
Data Reuse Optimization = Disable

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

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General Notes (Continued)

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

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

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Base Optimization Flags (Continued)

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

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: `basepeak = yes`

    482.sphinx3: `basepeak = yes`

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`

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Peak Optimization Flags (Continued)

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
-parallel

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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