SPEC® CFP2006 Result
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Fujitsu

PRIMERGY RX600 S5, Intel Xeon E7540, 2.0 GHz

$SPECfp^{®}2006 =$ 34.7

$SPECfp\_base2006 =$ 32.1

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

Results chart:
- **410.bwaves** 399 / 399
- **416.gamess** 18.2 / 15.4
- **433.milc** 26.3 / 26.0
- **434.zeusmp** 20.7
- **435.gromacs** 16.1 / 15.8
- **436.cactusADM** 308 / 299
- **437.leslie3d** 22.8
- **444.namd** 13.5
- **447.dealII** 25.5
- **450.soplex** 20.1 / 19.7
- **453.povray** 25.8 / 19.8
- **454.calculix** 20.3 / 18.8
- **459.GemsFDTD** 70.8 / 45.1
- **465.tonto** 22.6 / 17.1
- **470.lbm** 69.8 / 69.4
- **481.wrf** 28.2 / 27.3
- **482.sphinx3** 30.7

SPECfp_base2006 = 32.1
SPECfp2006 = 34.7

Hardware

CPU Name:	Intel Xeon E7540
CPU Characteristics:	Intel Turbo Boost Technology up to 2.26 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip
CPU(s) orderable:	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

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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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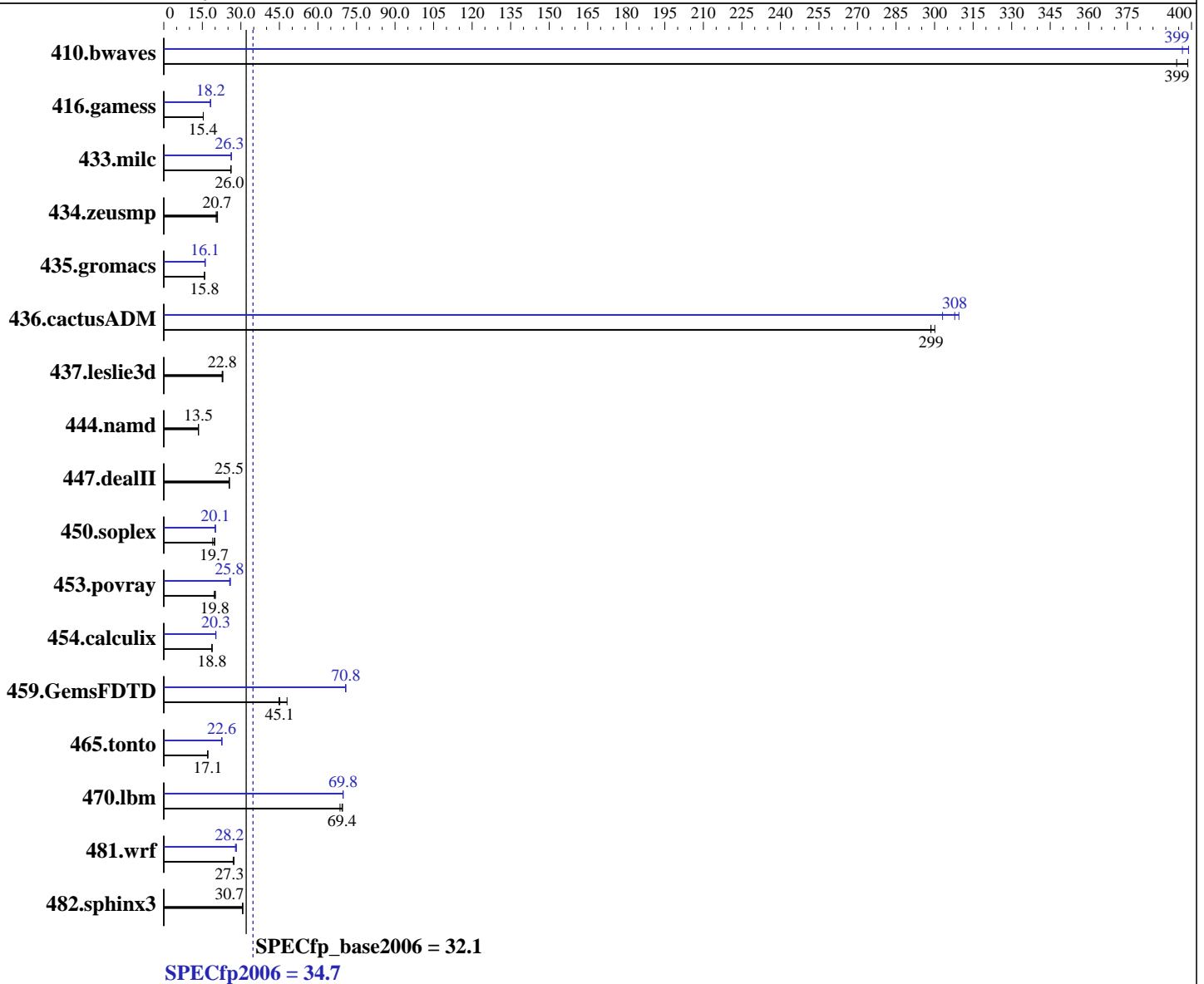|	
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L3 Cache:	18 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (64x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	34.5	394	**34.1**	**399**	34.1	399	34.3	396	34.1	399	**34.1**	**399**
416.gamess	**1274**	**15.4**	1274	15.4	1276	15.3	**1077**	**18.2**	1076	18.2	1077	18.2
433.milc	**352**	**26.0**	352	26.0	350	26.2	349	26.3	**350**	**26.3**	350	26.3
434.zeusmp	**440**	**20.7**	435	20.9	446	20.4	**440**	**20.7**	435	20.9	446	20.4
435.gromacs	451	15.8	**451**	**15.8**	450	15.9	**444**	**16.1**	443	16.1	445	16.1
436.cactusADM	**40.0**	**299**	40.0	299	39.8	300	**38.8**	**308**	38.6	309	39.4	303
437.leslie3d	413	22.8	**413**	**22.8**	409	23.0	413	22.8	**413**	**22.8**	409	23.0
444.namd	595	13.5	**595**	**13.5**	595	13.5	595	13.5	**595**	**13.5**	595	13.5
447.dealII	448	25.5	**448**	**25.5**	449	25.5	448	25.5	**448**	**25.5**	449	25.5
450.soplex	439	19.0	**424**	**19.7**	420	19.8	415	20.1	**416**	**20.1**	416	20.0
453.povray	**268**	**19.8**	271	19.7	265	20.1	207	25.6	205	25.9	**206**	**25.8**
454.calculix	**439**	**18.8**	439	18.8	441	18.7	**407**	**20.3**	407	20.3	408	20.2
459.GemsFDTD	**235**	**45.1**	221	48.0	237	44.8	150	70.7	**150**	**70.8**	150	70.8
465.tonto	**575**	**17.1**	576	17.1	574	17.1	**436**	**22.6**	436	22.6	436	22.6
470.lbm	200	68.6	**198**	**69.4**	197	69.6	**197**	**69.8**	197	69.8	197	69.8
481.wrf	414	27.0	**410**	**27.3**	409	27.3	**397**	**28.2**	396	28.2	401	27.9
482.sphinx3	633	30.8	**635**	**30.7**	636	30.6	633	30.8	**635**	**30.7**	636	30.6

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 1066 MHz.
BIOS configuration:
Intel HT Technology = 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
    Binaries were compiled on SLES 10 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 -static -parallel -opt-prefetch

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

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Base Optimization Flags (Continued)

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
```

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: `basepeak = yes`

C++ benchmarks:

> 444.namd: `basepeak = yes`

> 447.dealII: `basepeak = yes`

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Peak Optimization Flags (Continued)

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`

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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