



# SPEC<sup>®</sup> CFP2006 Result

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## NTT System S. A.

SPECfp<sup>®</sup>2006 = 21.2

## NTT Tytan S8 Series (Intel Xeon E5410)

SPECfp\_base2006 = 20.3

CPU2006 license: 9013

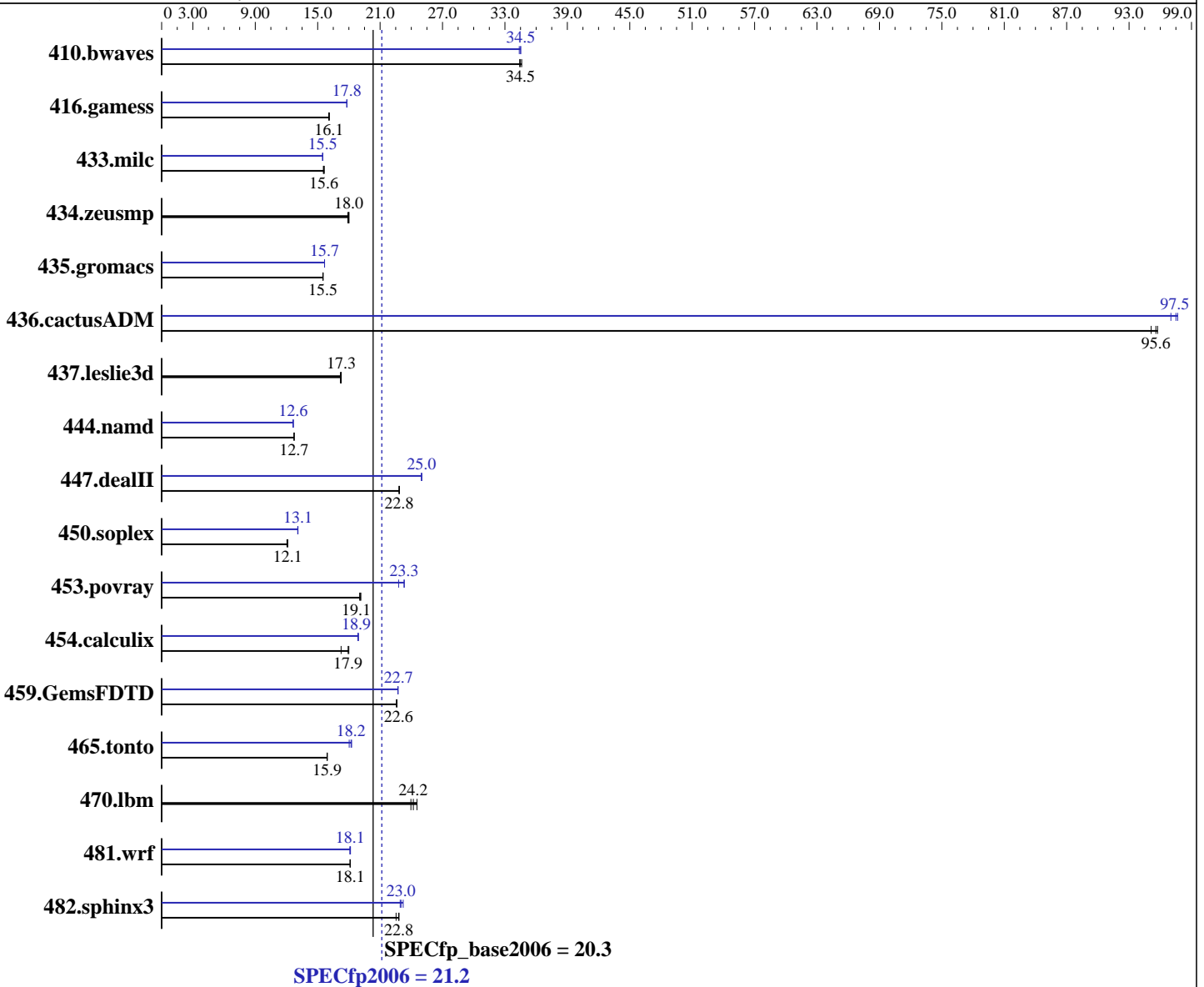
Test sponsor: NTT System S. A.

Tested by: NTT System S. A.

Test date: Jan-2009

Hardware Availability: Dec-2008

Software Availability: Dec-2008



**Hardware**

CPU Name: Intel Xeon E5410  
 CPU Characteristics: 2.33 GHz, 2x6 MB P2 shared, 1333 MHz System Bus  
 CPU MHz: 2333  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

**Software**

Operating System: SuSe Linux Enterprise Server 10 SP2, Kernel 2.6.16.60-0.21-smpt  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l\_cprof\_p\_11.0.066, l\_cprof\_p\_11.0.066  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (4 x 4GB DDR2-667 FBDIMM)  
Disk Subsystem: 300 GB SATA, 7200RPM  
Other Hardware: None

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

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>394</b>	<b>34.5</b>	395	34.4	393	34.6	395	34.4	394	34.5	<b>394</b>	<b>34.5</b>
416.gamess	1215	16.1	1219	16.1	<b>1216</b>	<b>16.1</b>	1099	17.8	<b>1100</b>	<b>17.8</b>	1100	17.8
433.milc	590	15.5	587	15.6	<b>589</b>	<b>15.6</b>	593	15.5	593	15.5	<b>593</b>	<b>15.5</b>
434.zeusmp	508	17.9	506	18.0	<b>506</b>	<b>18.0</b>	508	17.9	506	18.0	<b>506</b>	<b>18.0</b>
435.gromacs	460	15.5	461	15.5	<b>460</b>	<b>15.5</b>	456	15.7	<b>456</b>	<b>15.7</b>	456	15.7
436.cactusADM	126	95.1	125	95.7	<b>125</b>	<b>95.6</b>	<b>123</b>	<b>97.5</b>	123	97.0	122	97.7
437.leslie3d	547	17.2	<b>544</b>	<b>17.3</b>	544	17.3	547	17.2	<b>544</b>	<b>17.3</b>	544	17.3
444.namd	630	12.7	630	12.7	<b>630</b>	<b>12.7</b>	<b>634</b>	<b>12.6</b>	635	12.6	633	12.7
447.dealII	501	22.8	500	22.9	<b>501</b>	<b>22.8</b>	458	25.0	458	25.0	<b>458</b>	<b>25.0</b>
450.soplex	693	12.0	688	12.1	<b>689</b>	<b>12.1</b>	636	13.1	638	13.1	<b>637</b>	<b>13.1</b>
453.povray	278	19.1	279	19.0	<b>278</b>	<b>19.1</b>	234	22.8	228	23.3	<b>228</b>	<b>23.3</b>
454.calculix	458	18.0	478	17.3	<b>460</b>	<b>17.9</b>	436	18.9	437	18.9	<b>437</b>	<b>18.9</b>
459.GemsFDTD	470	22.6	<b>470</b>	<b>22.6</b>	469	22.6	<b>467</b>	<b>22.7</b>	467	22.7	467	22.7
465.tonto	619	15.9	618	15.9	<b>618</b>	<b>15.9</b>	546	18.0	539	18.3	<b>541</b>	<b>18.2</b>
470.lbm	573	24.0	<b>568</b>	<b>24.2</b>	560	24.5	573	24.0	<b>568</b>	<b>24.2</b>	560	24.5
481.wrf	616	18.1	616	18.1	<b>616</b>	<b>18.1</b>	<b>616</b>	<b>18.1</b>	615	18.2	617	18.1
482.sphinx3	865	22.5	854	22.8	<b>855</b>	<b>22.8</b>	839	23.2	850	22.9	<b>847</b>	<b>23.0</b>

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

## Operating System Notes

OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 200M

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

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## Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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:

-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

## Peak Compiler Invocation

C benchmarks:

icc

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## Peak Compiler Invocation (Continued)

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort

## 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: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias

470.lbm: basepeak = yes

482.sphinx3: -m32 -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-  
-opt-prefetch

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## Peak Optimization Flags (Continued)

450.soplex: -m32 -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.03.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.03.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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