



# SPEC<sup>®</sup> CFP2006 Result

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NTT System S. A.  
NTT Tytan S8 Series

SPECfp<sup>®</sup>2006 = 23.0  
SPECfp\_base2006 = 22.1

CPU2006 license: 9013

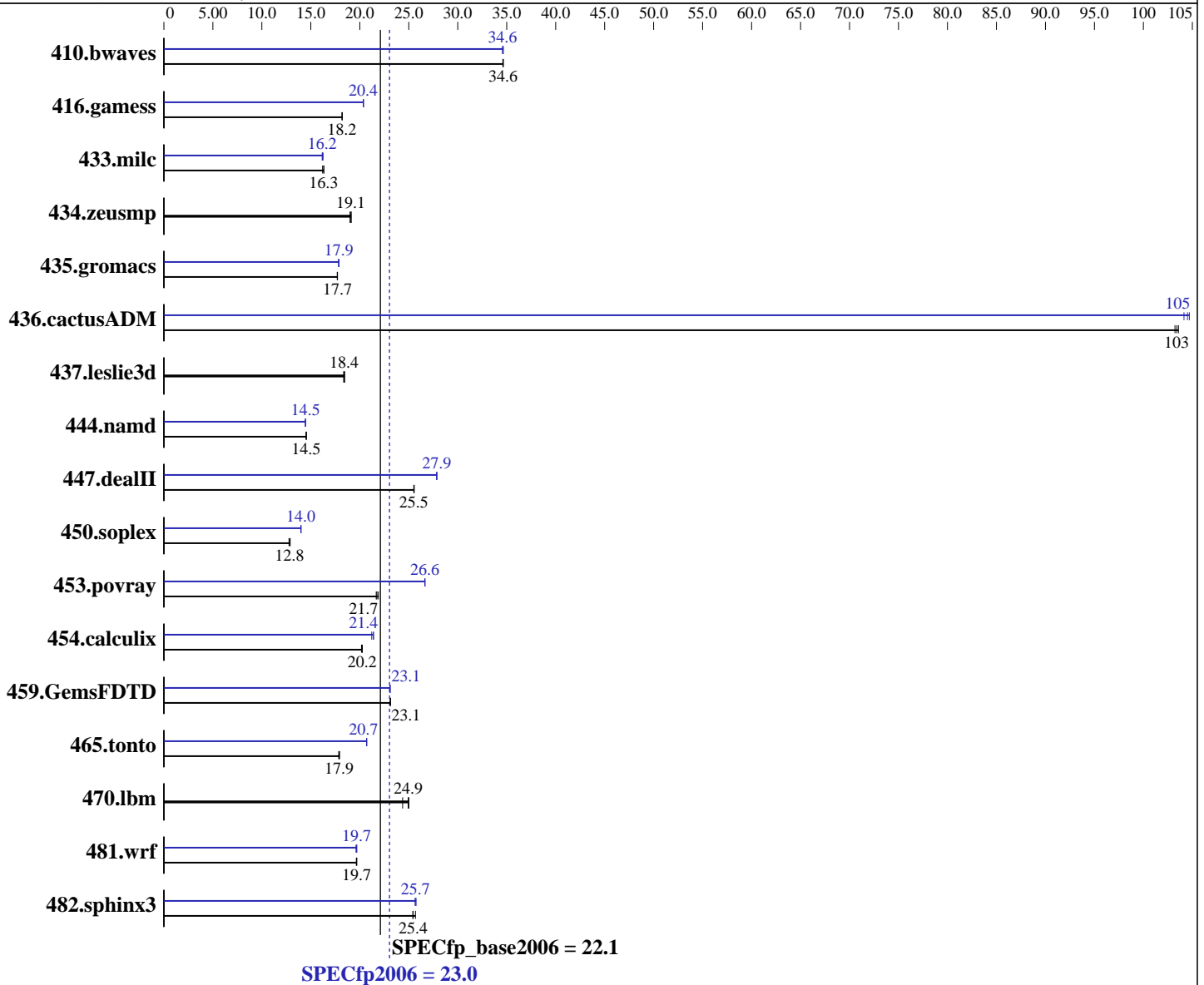
Test sponsor: NTT System S. A.

Tested by: NTT System S. A.

Test date: Jan-2009

Hardware Availability: Dec-2008

Software Availability: Dec-2008



## Hardware

CPU Name: Intel Xeon E5430  
 CPU Characteristics: 2.66 GHz, 2x6 MB P2 shared, 1333 MHz System Bus  
 CPU MHz: 2666  
 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

Continued on next page

## Software

Operating System: SuSe Linux SLES10 SP1, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux  
 Build 20080930 Package ID: l\_cproc\_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  
 Peak Pointers: 32/64-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

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	393	34.6	392	34.6	<u>392</u>	<u>34.6</u>	392	34.7	393	34.6	<u>393</u>	<u>34.6</u>
416.gamess	1077	18.2	<u>1076</u>	<u>18.2</u>	1075	18.2	<u>962</u>	<u>20.4</u>	962	20.4	961	20.4
433.milc	567	16.2	<u>562</u>	<u>16.3</u>	562	16.3	568	16.2	565	16.3	<u>568</u>	<u>16.2</u>
434.zeusmp	479	19.0	<u>477</u>	<u>19.1</u>	476	19.1	479	19.0	<u>477</u>	<u>19.1</u>	476	19.1
435.gromacs	404	17.7	403	17.7	<u>403</u>	<u>17.7</u>	401	17.8	<u>400</u>	<u>17.9</u>	399	17.9
436.cactusADM	116	103	115	104	<u>116</u>	<u>103</u>	<u>114</u>	<u>105</u>	115	104	114	105
437.leslie3d	512	18.4	<u>511</u>	<u>18.4</u>	509	18.5	512	18.4	<u>511</u>	<u>18.4</u>	509	18.5
444.namd	<u>552</u>	<u>14.5</u>	552	14.5	552	14.5	555	14.5	<u>555</u>	<u>14.5</u>	556	14.4
447.dealII	448	25.5	<u>448</u>	<u>25.5</u>	448	25.6	411	27.9	411	27.8	<u>411</u>	<u>27.9</u>
450.soplex	653	12.8	<u>650</u>	<u>12.8</u>	647	12.9	596	14.0	<u>596</u>	<u>14.0</u>	597	14.0
453.povray	243	21.9	245	21.7	<u>245</u>	<u>21.7</u>	200	26.6	200	26.7	<u>200</u>	<u>26.6</u>
454.calculix	<u>408</u>	<u>20.2</u>	407	20.3	409	20.2	385	21.4	389	21.2	<u>386</u>	<u>21.4</u>
459.GemsFDTD	459	23.1	<u>459</u>	<u>23.1</u>	459	23.1	459	23.1	460	23.1	<u>459</u>	<u>23.1</u>
465.tonto	549	17.9	551	17.8	<u>550</u>	<u>17.9</u>	476	20.7	<u>475</u>	<u>20.7</u>	475	20.7
470.lbm	549	25.0	564	24.4	<u>551</u>	<u>24.9</u>	549	25.0	564	24.4	<u>551</u>	<u>24.9</u>
481.wrf	569	19.6	<u>568</u>	<u>19.7</u>	567	19.7	567	19.7	<u>567</u>	<u>19.7</u>	570	19.6
482.sphinx3	759	25.7	<u>766</u>	<u>25.4</u>	767	25.4	757	25.7	760	25.7	<u>759</u>	<u>25.7</u>

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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort



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## 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.deall: -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

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

```



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Test date: Jan-2009

Hardware Availability: Dec-2008

Software Availability: Dec-2008

## 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
```

```
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
```

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Tested by: NTT System S. A.	Software Availability:	Dec-2008

## Peak Optimization Flags (Continued)

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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