



# SPEC® CFP2006 Result

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## SGI

SPECfp®\_rate2006 = Not Run

SGI Altix UV 1000 (Intel Xeon X7560, 2.26 GHz)

SPECfp\_rate\_base2006 = 16000

CPU2006 license: 4

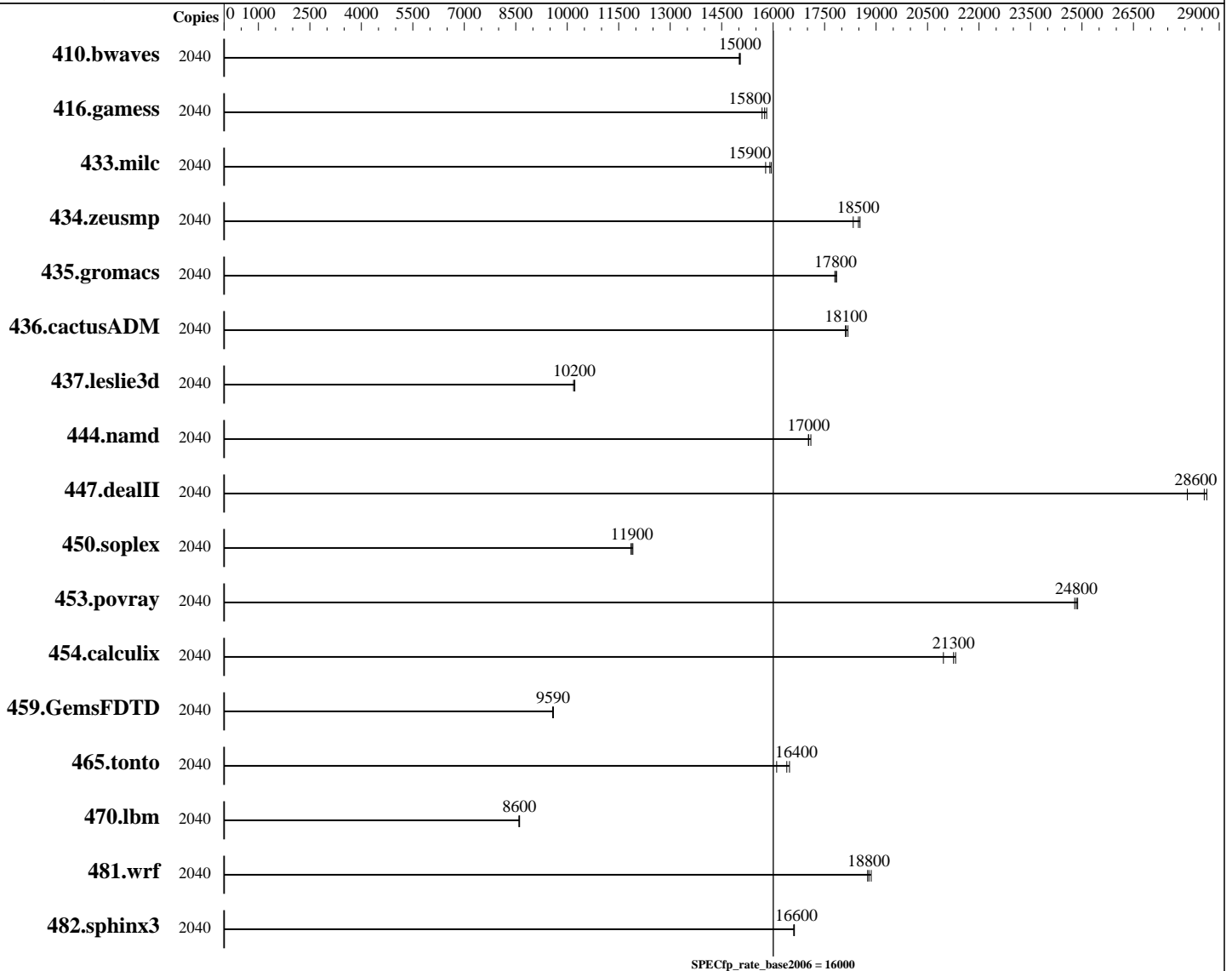
Test sponsor: SGI

Tested by: SGI

Test date: Jun-2010

Hardware Availability: Jun-2010

Software Availability: Jun-2010



### Hardware

CPU Name: Intel Xeon X7560  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz  
 CPU MHz: 2266  
 FPU: Integrated  
 CPU(s) enabled: 1024 cores, 128 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2-256 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) SP1, Kernel 2.6.32.12-0.7.1.1381.0.PTF-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: No  
 File System: tmpfs  
 System State: Multi-user, run level 3

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L3 Cache: 24 MB I+D on chip per chip  
Other Cache: None  
Memory: 5 TB (768 x 4GB + 256 x 8GB dual-rank DDR3-1066 CL7 RDIMMs)  
Disk Subsystem: 4 TB tmpfs  
Other Hardware: None

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

## Results Table

| Benchmark     | Base   |             |              |             |              |             |              |        | Peak    |       |         |       |         |       |  |  |
|---------------|--------|-------------|--------------|-------------|--------------|-------------|--------------|--------|---------|-------|---------|-------|---------|-------|--|--|
|               | Copies | Seconds     | Ratio        | Seconds     | Ratio        | Seconds     | Ratio        | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |  |  |
| 410.bwaves    | 2040   | 1847        | 15000        | 1843        | 15000        | <b>1844</b> | <b>15000</b> |        |         |       |         |       |         |       |  |  |
| 416.gamess    | 2040   | <b>2536</b> | <b>15800</b> | 2548        | 15700        | 2526        | 15800        |        |         |       |         |       |         |       |  |  |
| 433.milc      | 2040   | 1187        | 15800        | <b>1177</b> | <b>15900</b> | 1174        | 15900        |        |         |       |         |       |         |       |  |  |
| 434.zeusmp    | 2040   | 1013        | 18300        | <b>1004</b> | <b>18500</b> | 1002        | 18500        |        |         |       |         |       |         |       |  |  |
| 435.gromacs   | 2040   | 818         | 17800        | <b>817</b>  | <b>17800</b> | 816         | 17900        |        |         |       |         |       |         |       |  |  |
| 436.cactusADM | 2040   | <b>1345</b> | <b>18100</b> | 1341        | 18200        | 1346        | 18100        |        |         |       |         |       |         |       |  |  |
| 437.leslie3d  | 2040   | 1876        | 10200        | <b>1878</b> | <b>10200</b> | 1883        | 10200        |        |         |       |         |       |         |       |  |  |
| 444.namd      | 2040   | 961         | 17000        | 957         | 17100        | <b>961</b>  | <b>17000</b> |        |         |       |         |       |         |       |  |  |
| 447.dealII    | 2040   | <b>817</b>  | <b>28600</b> | 815         | 28600        | 831         | 28100        |        |         |       |         |       |         |       |  |  |
| 450.soplex    | 2040   | 1435        | 11900        | <b>1431</b> | <b>11900</b> | 1428        | 11900        |        |         |       |         |       |         |       |  |  |
| 453.povray    | 2040   | <b>437</b>  | <b>24800</b> | 436         | 24900        | 438         | 24800        |        |         |       |         |       |         |       |  |  |
| 454.calculix  | 2040   | 789         | 21300        | <b>792</b>  | <b>21300</b> | 803         | 21000        |        |         |       |         |       |         |       |  |  |
| 459.GemsFDTD  | 2040   | <b>2258</b> | <b>9590</b>  | 2260        | 9580         | 2255        | 9600         |        |         |       |         |       |         |       |  |  |
| 465.tonto     | 2040   | 1218        | 16500        | 1247        | 16100        | <b>1224</b> | <b>16400</b> |        |         |       |         |       |         |       |  |  |
| 470.lbm       | 2040   | <b>3257</b> | <b>8600</b>  | 3255        | 8610         | 3263        | 8590         |        |         |       |         |       |         |       |  |  |
| 481.wrf       | 2040   | 1215        | 18800        | 1208        | 18900        | <b>1213</b> | <b>18800</b> |        |         |       |         |       |         |       |  |  |
| 482.sphinx3   | 2040   | <b>2393</b> | <b>16600</b> | 2393        | 16600        | 2395        | 16600        |        |         |       |         |       |         |       |  |  |

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

## Submit Notes

The config file option 'submit' was used.  
numactl was used to bind copies to the cores

## Operating System Notes

Tmpfs filesystem set up with:  
mkdir -p /mnt/shm  
mount -t tmpfs -o size=4096g,rw,mpol=interleave tmpfs /mnt/shm/  
The mpol=interleave option sets the NUMA memory allocation policy for all files to allocate from each node in turn.



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## General Notes

Memory configuration:

The 4 GB DIMMs are attached to chips 0-95;  
the 8 GB DIMMs are attached to chips 96-127.

## 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

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

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## Base Optimization Flags (Continued)

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static`

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static`

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.20100316.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.20100316.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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