



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

SPECfp<sup>®</sup>2006 = **49.3**

### Express5800/GT110d-S (Intel Core i3-2120)

SPECfp\_base2006 = **47.5**

CPU2006 license: 9006

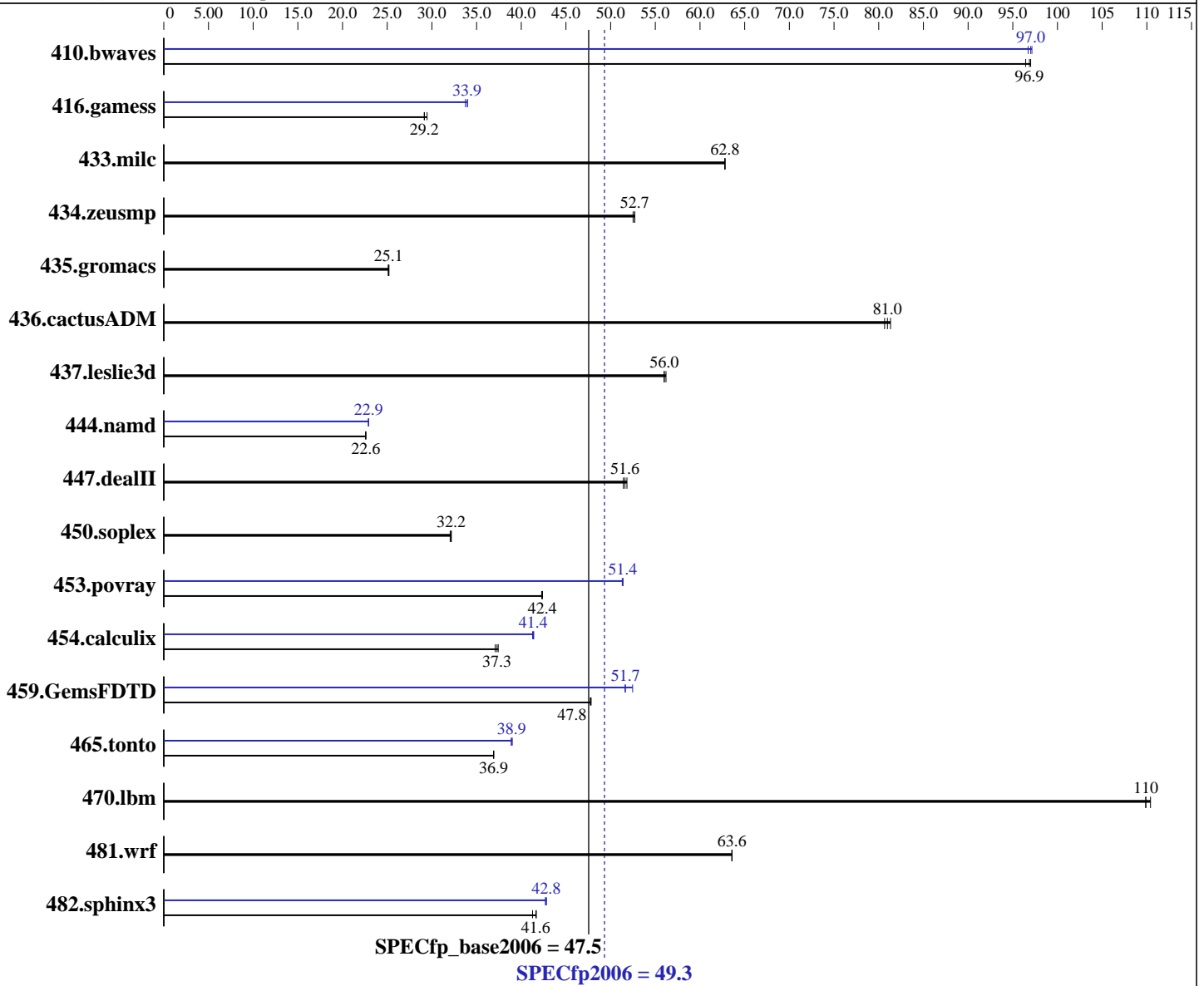
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Sep-2011

Hardware Availability: Jun-2011

Software Availability: Mar-2011



#### Hardware

CPU Name: Intel Core i3-2120  
 CPU Characteristics:  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 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 SP1 (x86\_64), Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64, Version 12.0.3.174 Build 20110309  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: 3 MB I+D on chip per chip  
Other Cache: None  
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)  
Disk Subsystem: 1 x 160 GB SATA, 7200 RPM  
Other Hardware: None

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	141	96.4	140	97.0	<b>140</b>	<b>96.9</b>	141	96.7	140	97.1	<b>140</b>	<b>97.0</b>
416.gamess	672	29.1	<b>671</b>	<b>29.2</b>	665	29.5	<b>577</b>	<b>33.9</b>	580	33.7	576	34.0
433.milc	146	62.8	<b>146</b>	<b>62.8</b>	146	62.8	146	62.8	<b>146</b>	<b>62.8</b>	146	62.8
434.zeusmp	173	52.5	173	52.7	<b>173</b>	<b>52.7</b>	173	52.5	173	52.7	<b>173</b>	<b>52.7</b>
435.gromacs	<b>284</b>	<b>25.1</b>	284	25.1	283	25.2	<b>284</b>	<b>25.1</b>	284	25.1	283	25.2
436.cactusADM	<b>148</b>	<b>81.0</b>	148	80.7	147	81.3	<b>148</b>	<b>81.0</b>	148	80.7	147	81.3
437.leslie3d	168	56.0	<b>168</b>	<b>56.0</b>	167	56.2	168	56.0	<b>168</b>	<b>56.0</b>	167	56.2
444.namd	355	22.6	<b>355</b>	<b>22.6</b>	355	22.6	350	22.9	<b>350</b>	<b>22.9</b>	350	22.9
447.dealII	222	51.4	221	51.8	<b>222</b>	<b>51.6</b>	222	51.4	221	51.8	<b>222</b>	<b>51.6</b>
450.soplex	259	32.2	260	32.0	<b>259</b>	<b>32.2</b>	259	32.2	260	32.0	<b>259</b>	<b>32.2</b>
453.povray	126	42.4	126	42.3	<b>126</b>	<b>42.4</b>	<b>104</b>	<b>51.4</b>	104	51.3	104	51.4
454.calculix	<b>221</b>	<b>37.3</b>	222	37.1	220	37.4	200	41.3	<b>199</b>	<b>41.4</b>	199	41.4
459.GemsFDTD	222	47.7	<b>222</b>	<b>47.8</b>	222	47.8	202	52.5	206	51.6	<b>205</b>	<b>51.7</b>
465.tonto	<b>267</b>	<b>36.9</b>	267	36.9	267	36.9	252	39.0	<b>253</b>	<b>38.9</b>	253	38.9
470.lbm	124	110	125	110	<b>125</b>	<b>110</b>	124	110	125	110	<b>125</b>	<b>110</b>
481.wrf	176	63.6	<b>176</b>	<b>63.6</b>	176	63.6	176	63.6	<b>176</b>	<b>63.6</b>	176	63.6
482.sphinx3	468	41.7	<b>468</b>	<b>41.6</b>	472	41.3	455	42.8	457	42.7	<b>456</b>	<b>42.8</b>

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 1800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

BIOS Settings:  
Hyper-Threading Technology: Disabled



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## General Notes

OMP\_NUM\_THREADS set to number of cores

## 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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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## Base Optimization Flags (Continued)

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

## 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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

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

447.dealIII: basepeak = yes

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## Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

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

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -opt-prefetch -parallel  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc  
-opt-malloc-options=3 -auto -unroll4  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>  
<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>  
<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.xml>



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